

**FACTORS AFFECTING CERVICAL CANCER DIAGNOSIS AND TREATMENT  
AT SELECTED PUBLIC HOSPITALS IN THE MOMBASA COUNTY**

**BY**

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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF  
THE REQUIREMENT FOR THE AWARD OF MASTER OF ARTS DEGREE IN  
PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI.**

**2013**

## DECLARATION

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

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L50/66734/2010

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This research project report has been submitted for defence with my approval as University supervisor.

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## **DEDICATION**

To all the cervical cancer patients living in the Mombasa county. To my loving husband and friend Rev. Collins Odhiambo Bolo, our sons Emmanuel Odhiambo Bolo, Joseph Otieno Bolo and daughter Victoria Odhiambo Bolo for their unending support and patience while I was under taking the course.

## **ACKNOWLEDGEMENT**

I owe the successful completion of this research report to the guidance and contribution to Yahweh and a number of individuals. My gratitude goes to the University of Nairobi, for granting me the opportunity to undertake postgraduate level studies. Secondly, I would like to acknowledge the invaluable support and guidance provided to me by my supervisor, Dr Saeed Mwaguni of the Environment and Health Sciences Department, Technical University of Mombasa who showed a lot of patience while guiding this study. To Jonhn Bosco Kisimbi and Dr Christopher Gakuu, I appreciate their encouragement on the value of acquiring knowledge.

I would also like to thank the management and staff of the Likoni Sub district Hospital, Tudor district Hospital, Port Reitz District Hospital and the Coast Provincial General Hospital for their support and cooperation which enabled me to collect both primary and secondary data for my study.

Lastly, my gratitude goes to all those who assisted me in one way or the other to complete this research report.

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## **ABBREVIATIONS AND ACRONYMS**

<b>WHO</b>	WORLD HEALTH ORGANISATION
<b>MOH</b>	MINISTRY OF HEALTH
<b>KNH</b>	KENYATTA NATIONAL HOSPITAL
<b>NIH</b>	NATIONAL INSTITUTE OF HEALTH
<b>GOK</b>	GOVERNMENT OF KENYA
<b>SPSS</b>	STATISTICAL PROGRAM SCIENTIFIC STUDIES
<b>CPGH</b>	COAST PROVINCIAL GENERAL HOSPITAL
<b>ASCO</b>	AMERICAN SOCIETY OF CLINICAL ONCOLOGY
<b>AIDS</b>	ACQUIRED IMMUNE DEFICIENCY SYNDROME
<b>HIV</b>	HUMAN IMMUNODEFICIENCY VIRUS
<b>NCI</b>	NATIONAL CANCER INSTITUTE
<b>NCR</b>	NAIROBI CANCER REGISTRY
<b>KESHO</b>	KENYA SOCIETY OF HEAMATOLOGY AND ONCOLOGY
<b>IARC</b>	INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
<b>PHC</b>	PRIMARY HEALTH CARE
<b>MCH</b>	MATERNAL CHILD HEALTH
<b>MDSP</b>	MOMBASA DISTRICT STRATEGIC PLAN
<b>WHS</b>	WORLD HEALTH STATISTICS
<b>HPV</b>	HUMAN PAPILOMA VIRUS
<b>AHS</b>	AFRICAN HEALTH SCIENCE

## **ABSTRACT**

This research study is about factors affecting cervical cancer diagnosis and treatment at the Mombasa County. The study was undertaken to examine the factors that affecting cervical cancer diagnosis and treatment at the Mombasa County. Four healthcare facilities were studied. A descriptive cross sectional study was done using stratified sampling method. Data was collected among healthcare workers using structured questionnaires. The key informants were interviewed using the structured interview guide. The quantitative data from the study was coded and entered into the computer for analysis using the Statistical Package for Social Sciences (SPSS) version 20 and Chi-square used for testing hypothesis. The study findings revealed that healthcare workers are deficient in knowledge on cervical awareness and treatment. The cost of diagnosis and treatment was also high to majority of the patients since majority could not afford to pay for their treatment. The healthcare facilities were also inadequate according to the study making the situation worse. From the findings it was concluded that healthcare workers awareness on cervical cancer is low; that the cost of cervical cancer treatment is high and majority of patients cannot afford it; similarly, majority of the health care institutions have inadequate facilities. Based on these findings was therefore recommended that more awareness need to be created among the healthcare workers. The cost of treatment should be reduced through government policy. Finally, the upgrading of healthcare facilities within the County was recommended.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the study

Cervical cancer is a disease that is preventable but impacts most low-income countries negatively. This is shown in the statistics where, out of the half a million plus women diagnosed with cancer of the cervix globally each year, eighty percent (80%) come from low income countries (AMPATH, 2010).

Among American women, cervical cancer is the eighth (8<sup>th</sup>) most common type of cancer. More than 10,000 new patients develop cervical cancer each year, and 3600 women in United States die from the advanced form of the disease annually. In the United Kingdom, 2800 women are diagnosed with cervical cancer each year and as many as 1,100 of them die from the disease which is the 12<sup>th</sup> most common cancer for their women (Globocan 2008).

In India, the burden of cervical cancer is enormous, accounting for about 20 percent of all cancers related deaths in women. It is the number one cause of death in Indian women of middle age (Ferlay et. al, 2004, Globocan, 2002). In Nigeria, out of the 10,000 diagnosed with cervical cancer yearly, 8,000 die (Airede et al 2008). In Kenya, cancer is the third leading cause of death with a rate of 18,000 deaths per year (MPH, 2009). Cervical cancer is the second most prevalent type of cancer among women in the country, after breast cancer, and the incidence, is increasing (WHO, 2010). The annual crude mortality rate per 100,000 females of all ages is 8.6 compared to 7.7 in breast cancer (Globocan 2008).

According to Lewis (PAHO, 2004), cervical cancer is fully preventable and curable at low cost when screening is done early. In a developed country like Canada, cervical cancer is the 11<sup>th</sup> most common cancer, affecting women; but in over the last 40 years, incidence and mortality of the disease has decreased because of effective prevention, early detection and treatment. This is also true for North America and Europe (AMPATH 2010). However, due to the high mortalities in the developing countries, it remains the second leading cause of death worldwide, despite being preventable.

A report released by AMPATH, University of Toronto (2010) on cervical cancer in Kenya revealed that, there are no Pap smear test programs and this is resulting to both high frequency and mortality of the disease. The report also noted an extreme lack of resources to treat cervical cancer- both medical equipment and physician expertise.

According to World Health Statistics, India, 2.6% of all women aged 18-69 years are screened every 3 years. 4.9% urban women aged between 18-69 years are screened every 3 years and 2.3% rural women aged between 18-69 years are screened every 3 years. It has been recognized that countries which have regular screening and diagnostic programs, have reduced incidence in of this disease (Kim et al, 2008; Spayne et al, 2007). In many African countries, traditional cytology- based Pap smear screening programs are not a feasible solution due to inadequate health services, poor laboratory infrastructure (Denny et al 2005, Bradley and Hoffman, 2006). Currently, the coverage of cervical cancer screening for all women between 18 and 69 years is 3.2%. This situation is dire and something needs to be done.

Kenya has a population of about 10 million women in the ages of 15 years and above who are at risk contracting cervical cancer. Sexually active women are at risk of developing cervical cancer –a disease, which is preventable if detected and treated early (Carr and sellers, 2004; Ayinde and Omigbodun, 2003). The diagnosis and treatment of cervical cancer requires a multidisplinary team of health care givers who include medical oncologist, surgical oncologists, nurse oncologist, palliative care specialists, gynaecologic oncologist, pathologists, radiologist etc. Currently, there are three medical oncologists, four radiation oncologists, two surgical oncologists, and two gynaecologic oncologists for the whole Kenyan population. However, in Kenyan health centres Chemotherapy drugs are not easily available. Patients who live in the rural areas therefore have to walk several kilometres to access only the basic of health care. Opioids are only available in hospitals licensed for this purpose. And for those in need of radiotherapy, then they have to bear the high cost and can access it in a few hospitals, mostly located in the big cities (National Assembly, 2011).

According to Nairobi women' hospital, too many cancers are not detected early enough due to lack of awareness. In the sub –Saharan countries priority and awareness has been given to infectious diseases like malaria, Tuberculosis, diarrhoeal diseases. According to the National cervical cancer strategic plan 2011-2015 more sensitization and awareness will need to be

created on the same, within the healthcare workers, who are key in creating awareness, targeted for proper education.

The Mombasa County has not been spared from the above predicaments. There are around 160 privately owned clinics, 22 municipal council owned and 15 Government hospitals. The major hospitals include Coast Provincial General Hospital, and the privately owned Mombasa Hospital, Aga Khan Hospital and Pandya Memorial Hospital. The Coast Provincial General Hospital serves as a referral level hospital for the other counties in the region and is overwhelmed with work. While the other major health facilities, are expensive and out of reach for most people. The government health facilities have few doctors, clinical officers, nurses, clinical officers and public health officers. The Doctor /patient ratio is about 12:100,000 (MDSP 2005-2010), which among other factors, make it difficult for the medical personnel to concentrate on early diagnosis of diseases.

The proposed research study was carried out in the Mombasa County to provide information on the subject at the county level in the country, specifically targeting to establish the factors affecting cervical cancer diagnosis and treatment in the region

## **1.2 Statement of the problem**

Cervical cancer is a serious cause of mortality and morbidity among women in developing countries including Kenya. Current estimates from the Ministry of Health indicate that every year about 2450 women are diagnosed with cervical cancer and of these about 1675 die from the disease. The annual number of cervical cancer cases is projected to increase to approximately 4260 by 2025 (Kidula, L. 2011).

Cervical cancer is fully preventable and curable, at low cost and at low risk, when screening to facilitate the timely detection of early precursor lesions in asymptomatic women is available together with appropriate diagnosis, treatment and follow-up” (Lewis, M. Pan American Health Organization, 2004). In Sub Sahara Africa, priority is given to infectious diseases such as malaria, tuberculosis, leprosy, diarrhoeal diseases, acute respiratory infections and HIV/AIDS all of which have preventive and management strategies. Several studies have shown that the level of knowledge on cervical cancer is very low in Africa and

this cut across different levels. Among 500 patients using the maternal and child health clinic in Lagos – Nigeria, only 4.3% were found to be aware of cervical cancer (Anorlu et al, 2004).

According to the Department of Research, 2011, Kenyatta National Hospital, the only public institution that hosts most of the cancer experts and technology in Kenya, is currently overwhelmed with inpatient and outpatient cases and simply cannot cope. Patients from the Mombasa County are also forced to go to Nairobi to seek for treatment in this already overwhelmed facility. This study was seeking to examine the factors affecting cervical cancer treatment and diagnosis in selected government hospitals at the Mombasa, County.

### **Purpose of the study**

The study focused on factors affecting cervical cancer diagnosis and treatment in selected public hospitals at the Mombasa County.

### **1.4 Objectives of the study**

The study was guided by the following research objectives: -

- i) To assess the level of awareness of healthcare workers on cervical cancer diagnosis and treatment at the Mombasa County.
- ii) To determine how the cost of diagnosis and treatment affects the patient diagnosis and treatment at the Mombasa County.
- iii) To establish how the availability of health facilities affects diagnosis and treatment of cervical cancer at the Mombasa County.

### **1.5 Research questions**

The study was guided by the following research questions:

- i) What is the level of awareness of the healthcare workers on early cervical cancer diagnosis treatment at the Mombasa County?

- ii) How does cost of cervical treatment and diagnosis affect the patient's ability to pay for the treatment at the Mombasa County?
- iii) How does the unavailability of Healthcare facilities affect cervical cancer diagnosis and treatment at the Mombasa County?

## 1.6 Research hypothesis

The study was guided by the following research hypothesis:

- i)  $H_0$  = There is no relationship between level of awareness of the healthcare workers and cervical diagnosis and treatment at the Mombasa County.

$H_1$  = There is a relationship between the level of awareness of the healthcare workers and cervical cancer diagnosis and treatment at the Mombasa County.

- ii)  $H_0$  = There is no relationship between the cost of treatment and diagnosis of cervical cancer and the patient's ability to pay for the treatment of at the Mombasa County.

$H_1$  = There is a relationship between cost of cervical cancer diagnosis and treatment and the patient's ability to pay for the treatment of at the Mombasa County.

- iii)  $H_0$  = There is no relationship between availability of healthcare facilities and diagnosis and treatment of cervical cancer at the Mombasa County.

$H_1$  = There is a relationship between access to healthcare facilities and diagnosis and treatment of cervical cancer at the Mombasa County.

## 1.7 Significance of the study

The findings of the research study were significant because statistics indicate that a large number of women suffering from cervical cancer lose their lives from a disease that are treatable and therefore such deaths could be prevented. Such deaths, robs the community of mothers and productive members of society, impacting negatively on socio-economic wellbeing. Secondly, the information generated from the study will be dissipated appropriately and will help create awareness about the disease, prompting women to seek



early diagnostic interventions, preventing further deaths. Finally, awareness created from the study would help to demystify some cultural myth about the disease and encourage people to seek early diagnosis and treatment.

### **1.8 Delimitations of the Study**

- i) The study covered only a selected few government hospital facilities in the Mombasa County; Likoni Sub district hospital, Tudor District hospital, Port Reitz District Hospital and Coast Provincial General Hospital.
- ii) The study was limited to cervical cancer.

### **1.9 Limitations of the Study**

The key limitations during the study were:

- i) Scarcity of recorded information about the disease, cultural norms restricted the respondents to talk about the disease.
- ii) The busy schedules of healthcare workers may deny the researcher quality time for the administration of research instruments
- iii) Limited to government owned healthcare facilities the study will not capture information on those who seek treatment from privately owned facilities within the county.

### **1.10 Basic assumptions of the study**

The study was based on the following assumptions: -

- i) There was adequate recorded information about the disease in the Mombasa County.
- ii) Medical staffs were available and cooperative to participate in helping the researcher generate the information sought.

- iii) Information missed from privately owned facilities is negligible and will therefore not affect the overall results of the study

### **1.11 Definitions of significant terms as used in the study.**

**Cancer:** According to the NCI, it is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues.

**Cervical cancer:** Abnormal division of cancer cells in the cervix

**Chemotherapy:** Treatment with drugs that kill cancer cells.

**Radiotherapy:** The use of high-energy radiation from x-rays, gamma rays, neutrons, Protons, and other sources to kill cancer cells and shrink tumours.

**Pap smear:** A microscopic examination of cells scraped from the opening of the cervix.

**Cancer staging:** A system that is used to describe the extent of cancer in the body.

**Treatment cycle:** A course of treatment that is repeated on a regular schedule with periods of rest in between.

**Opioids:** They are medications that relieve pain by reducing the intensity of the pain signals reaching the brain and affect brain areas controlling emotions.

**Adjuvant Therapy:** Additional cancer treatment given after the primary treatment to lower the risk that the cancer will come back.

### **1.12 Organisation of the Study.**

The study has been organised into five chapters. The first chapter introduces the study by looking at the factors affecting cervical cancer diagnosis and treatment globally and regionally. The chapter also outlines the problem statement, purpose and objectives, research questions, significance, limitations and delimitations, basic assumptions of the study and definitions of significant terms.

The second chapter reviews literature on level of awareness of healthcare workers and how cost and availability of healthcare facilities affect cervical cancer diagnosis and treatment.

The third chapter explains research methodology adopted in the study. It outlines the research design, target population, sampling size and procedure, data collection methods and procedures, validity and reliability of research instruments, ethical considerations and data analysis and interpretation techniques.

Chapter four outlines the data analysis, presentation and interpretation. A summary of the findings, discussion, conclusions, recommendations and suggestions for future research make up the fifth chapter of this study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents literature review on factors influencing implementation of cervical cancer diagnosis and treatment programs at the Mombasa County. The literature review looks at how the level of knowledge of healthcare workers, cost of treatment and diagnosis and unavailability of health facilities has an influence on the diagnosis and treatment programs of cervical cancer. It looks at the scenarios in both developed and developing countries narrowing to the situation in Kenya in general terms, before zeroing on how these factors affect diagnosis and treatment of cervical cancer at the Mombasa County.

#### **2.2 Level of Awareness of the Health Care Workers.**

Most patients who visit the public health systems rely on the healthcare workers for information and guidance. The healthcare workers have a role in providing health education during the hospital visits and this is part of their daily routine. Information relayed will depend on the level of knowledge of the healthcare giver on the particular subject. A study conducted in India among staff nurses in order to evaluate their knowledge regarding cervical cancer showed that only 69% of the 100 staff nurses had some knowledge related to cancer of the cervix. The study showed that nurses being the majority of healthcare workers can provide health promotion, counselling to patients they serve in day to day practice and are in more ideal position to provide health education to young girls and women (V. Shah et al 2012). Being the majority of care-givers, it is desirable that most of them should be knowledgeable about cervical cancer, a situation which is not.

Cervical cancer is one of the most preventable human cancers, because of its slow progression, cytological identifiable precursors, and effective treatment (Lee J, Seow A, ling SL, 2002). Access to current information on prevention, early diagnosis, cancer type or the related treatment options help patients make more informed decisions about their healthcare. Patients can also get to know the long term and the short term side effects of their treatment. (D. Blum, 2012).

Over the years awareness and uptake of cervical cancer screening services has remained poor in developing countries. Problems associated with cervical cancer incidence include late reporting, ignorance and cultural issues relating to cervical cancer screening (Chizoma and Bola, 2012). The role of the healthcare worker in this cannot be overlooked.

In Africa, the cancer problem is associated with level of knowledge and awareness in the health workers and the general population at large. In Africa, Oncology seems to be a segment of the medicine that is practiced only by the local traditional healers, leading to devastating effects on the natural history of the tumours. As much as 95% of cancer patients in the African countries are diagnosed at late- or end-stage disease. The delayed diagnosis for these patients is due to the low level of cancer awareness between the population and the health workers, culture and constraints on access to specialized care, which is usually evident in these African countries (Loehrer Pj, Greger HA, et al, 1991).

In the Sub Saharan Africa, priority has been given to infectious diseases such as malaria, tuberculosis, leprosy, diarrhoeal diseases, acute respiratory infections and HIV/AIDS all of which have preventive and management strategies (Anorlu et al, 2004). In these programs, a lot of awareness has been created, healthcare workers have been trained and even resources have been made available to prevent and cure these infectious conditions. However this is not the case with cervical cancer in our facilities.

According to a research conducted among Cameroonian women, lack of knowledge about cervical cancer in the population and among healthcare workers is a major barrier for access to cervical cancer prevention. In the findings, less than half of the nurses had adequate knowledge regarding cervical cancer. There was a significant association between knowledge levels of causes of cervical cancer and transmission of HPV and age. Knowledge was more adequate among the young nurses ( $p = 0.027$ ) and knowledge differed significantly between cadres. Registered nurses had more adequate knowledge than enrolled nurses ( $p = 0.006$ ). The majority did not know screening intervals and a few were aware of HPV vaccine. Most nurses (84.6%) had never had a Pap smear examination themselves (Catherine McCarey et al, 2011).

A study conducted by the African Health Sciences in a Tanzanian tertiary health facility, revealed that less than half of the nurses had adequate knowledge regarding cervical cancer.

There was a significant association between knowledge levels of causes of cervical cancer and transmission of HPV and age. Knowledge was more adequate among the young nurses ( $p = 0.027$ ) and knowledge differed significantly between cadres. Registered nurses had more adequate knowledge than enrolled nurses ( $p = 0.006$ ). The majority did not know screening intervals and a few were aware of HPV vaccine. Most nurses (84.6%) had never had a Pap smear examination. Nurses were asked for their most recent source of cervical cancer information. The results showed that nursing school was the most common (53.3%) source of cervical cancer information followed by the media (47.4%). Colleagues and self study were sources of information for 18.2% of the respondents each. Only 2.9% and 8% had attended seminars and continuing medical education sessions on cervical cancer (Urasa and Darja 2011).

During the cancer treatment, there is often a lot of information for patients to remember, keep track of and act on. They need to get knowledge on how and when to take the medication, when to go for appointments and what to expect after treatment. To manage all these, it is recommended that patients keep written record of all procedures, treatments and medication received. The American Society of Clinical Oncologist has a printable form's to help patient manage their health care in terms of; what treatment is planned, received and follow-up care. This however is not the case in the developing countries where the healthcare workers are deficient of information (ASCO, 2012).

A study done in Nigeria showed that the awareness of cervical cancer is low among women utilizing selected healthcare facilities. This could be worse among those not utilizing the healthcare facilities. Many women claimed that information on cervical cancer was not being provided by the health care workers. According to the study the participants were eager to know more about the disease and screening methods but the information was simply not given. Knowledge on cervical cancer and prevention by screening has show several gaps and misconceptions. Continuous medical education programs to include all healthcare workers should be conducted at hospital to increase their awareness. All healthcare workers should be trained to encourage early screening and treatment. Healthcare workers need to be targeted first because of their important role in any screening program (Chidzoma and Bola, 2012).

### **2.3 The cost of cervical cancer screening and treatment**

Medical technology is increasingly costly in most fields of clinical medicine. Oncology has not been spared from issues of cost, in part resulting from the tremendous scientific progress that has led to new tools for diagnosis, treatment and follow up of patients (Meropol and Schulman, 2003). According to a task force established by American Society of Clinical Oncologist, Cancer care costs are growing rapidly, at a rate of 15% per year, and the newest drugs cost several thousand dollars per month of treatment. 33% of families are experiencing difficulty paying for their cancer care.

Worldwide women of low socio-economic status have a greater risk of having cervical cancer. Cervical cancer is often referred to as a disease of poverty and of poor women. A recent study in Mali in West Africa showed that within a population widely infected with HPV, poor social conditions, high parity and poor hygienic conditions were the main co-factors for cervical cancer (Palacio-Mejia et al., 2003).

Financing cancer treatment is a major challenge for both developed and developing countries. The occurrence of the disease has a significant negative impact as the treatments are very expensive, quality of life is degraded and the disease too often leads to death. The death accounts for a significant number of potential years of life lost. Cancer also causes a loss of economic income available to the community (National Cancer Institute- France, 2007).

A report by BMC Health Service Research on estimation of costs of cervical cancer (sue , j. Et al,2005)) screening, diagnosis and treatment, showed that direct cost is associated with clinic visits and laboratory tests and were still very high to the patient. There is other out of pocket expenses such as two way transportation to the facility, accommodation and food. All these have to be factored in by the patient (Sue, J.et al, 2005).

In 1989, the American Cancer Society issued a report. "Cancer in the Poor: A Report to the Nation". The report was a culmination of a series of fact finding hearings held throughout the nation in collaboration with the NCI and Centres of Disease Control (CDC). Poor people with cancer of all racial and ethnic groups testified with the following key findings; that they lack access to quality healthcare and are more likely than others to die of cancer, that they endure greater pain and suffering from cancer than most Americans, the poor face substantial obstacles to obtaining and using health insurance and often do not seek for the needed care, if they cannot pay for it. That poor people and their families must make extraordinary sacrifices

to obtain and pay for healthcare. That cancer education and outreach efforts are insensitive and irrelevant to many poor people (American Cancer Society 1989).

According to a report by the U.S Centre for disease Control and Prevention, 20 percent of cancer patients' younger than 65 years of age delay or refuse treatment due to the high associated cost. According to a bulleting of National Cancer Institute, the average cost of initial cancer therapy per patient increased by \$4,000 to \$7, 000, depending on the cancer type. A larger number of patients receiving chemotherapy and can now avail themselves for chemotherapy because of reimbursements by insurance companies. However, there have been cases of insurance companies rejecting payments for some expensive chemotherapeutic drugs as part of cost cutting measures. On the other hand, most pharmaceutical companies have programs to help patients who cannot afford to pay for chemotherapy (D. Penick 2011).

In America, where treatment can only be obtained with a health insurance, lack of adequate health insurance may prevent many patients from seeking treatment, taking necessary medications, or attending regular appointments. Even patients with health insurance may find the costs associated with cancer treatment more than expected.

Cervical cancer is fully preventable and curable, at low cost and at low risk, when screening to facilitate the timely detection of early precursor lesions in asymptomatic women is available together with appropriate diagnosis, treatment and follow-up" (Lewis, M. Pan American Health Organization, 2004). However this is not achievable in resource limited countries. Screening of cervical cancer should begin approximately three years after a woman begins vaginal intercourse, but not later than 21 years of age. It should be done every year with conventional pap tests or every two years using liquid based pap tests. Women 70years of age and older who have had three or more normal Pap tests and no abnormal Pap test in he past ten years and who have had hysterectomy may choose to stop cervical cancer screening (cancer facts and figures 2012).

The total cost of cervical screening in Italy was estimated to be €158.5 annually. Most of these costs are associated with opportunistic screening. The cost of additional tests in women with abnormal pap smear were estimated to be approximately €4.0 million in the first year and €5.2 million to be including the cost of followup (Biomed 2009).



In Kenya cancer cases have become rampant and yet many poor people cannot afford chemotherapy. The poor or the low income earners experience challenges in costs incurred while obtaining their treatment and to try and mitigate the cost of drugs, patients have been buying cheap generic drugs. (Meroprol and Schulman, 2007). For those who can afford the treatment, it is eating away their finances and investments. Some doctors in Kenya feel that government has not invested much in cancer treatment and the cases in the country are rising rapidly (Diplomat E.A., 2011).

According to Diplomat East Africa, Cancer drugs do not form part of essential drug list in the Kenyan public hospitals, in the cancer centres where they are available the issue of cost is a hindrance (Diplomat East Africa, 2011). The costs vary between Sh80, 000 and Sh2 million depending on the drugs and the duration of radiation treatment. For patients who require chemotherapy (treatment using injections), the cost and availability of drugs has equally posed great challenges in the management of cancer in the country (Diplomat E.A., 2011).

Cancer centre at the Kenyatta National Hospital, cancer patients pay KSh 300 per session translating to KSh1, 500. The entire six weeks sessions costs KSh 9,000. Private Hospital charges on the other hand are KSh 80,000 per week. For solid tumours the tests include but not limited to CT Scans or Magnetic Resonance Imaging (MRI) and biopsy which costs between KSh 10000 to 30,000/-. Kenyatta Hospital has an agreement with the private hospitals to have poor patients access the radiation services at subsided cost of KSh 35,000 a week but this is still too high.

Other costs incurred in cancer treatment may range from KSh 6000 to KSh 10,000 spent on preliminary investigations and drugs that may cost up to KSh 30,000 per course. At least six courses are required in the eight weeks. This is too expensive for a normal Kenyan who survives on less than a dollar per day. Many give up and are with no option but to wait to die. (KHN 2011). According to a report by Evelyne Situma in Business daily, patients pay KSh 500- 1000 per session for radiotherapy. Chemotherapy costs between KSh 6,000 to KSh 600,000 depending on the drugs being used. In the private hospitals like Cancer Care Kenya, it costs about KSh 50,000 a week for radiotherapy, and about KSh 12,000 to KSh 200,000 per chemotherapy treatment (Business daily 2013).

## **2.4 Availability of healthcare facilities**

Cervical cancer is predominant in low resource setting countries. The main reason has been attributed to limited access to screening and treatment facilities. Countries that have organized screening programs have substantially reduced cervical cancer incidence and mortality. Screening programs have the potential to be effective because cervical cancer is easily accessible to biopsy. There is a long latent period easily recognizable before development of cancer and there is an effective treatment in precursor disease (Dinshaw et al 2011). Availability of screening programmes in the UK has reduced mortality rates by 62% in 1987-2006 (Cancer Research UK, 2008).

In Ghindae, Referral Hospital in Eritrea, a 58year old woman with post menopausal bleeding, haematuria, diffuse abdominal pain and dyspnoea presented in the hospital but there were no radiological instruments for diagnosis in the hospital and only complete blood count was carried out, confirming the suspected anaemia. The patient died after two days of hospitalization (Pezzadini, Marino et al 2007). The Kenya health referral system has not spared the cancer patients from the same predicament.

In the government sector, patients seek medical services at the health centre where they are then referred to the district or sub district hospital. If no diagnosis can be made they are referred to provincial hospital for diagnosis. Some results are taken back to the district hospitals for confirmation before being referred to a referral hospital. This has resulted into delays in patient reviews at established cancer centres. The predicament becomes worse especially if the referral is to Kenyatta National Hospital, where there is a two month waiting period before treatment commences (Diplomat E.A, 2011).

According to a report by Diplomat East Africa, Kenya has only two public and two private centres to handle all cases of cancer that require treatment. Kenyatta National Hospital Cancer Treatment Centre and the Moi Referral and Teaching Hospital are the only public health facilities and the private centres are found at Nairobi's MP Shah Hospital and the Aga Khan University. The Coast General Hospital has a fairly well established Satellite Cancer Centre, which collaborates with the Kenyatta Hospital Cancer Treatment Centre. (Diplomat E.A., 2011).

In the public cancer centres, the equipment that is meant to handle cancer diagnosis and treatment is limited. The lack of adequate radiological and laboratory facilities, in particular,

has contributed to lack of diagnosis of cancer. To the contrary, the existing private cancer centres have well established diagnostic, laboratory facilities and radiotherapy equipment. However, these facilities have limited impact on the majority of the public due to their exorbitant costs. The costs vary between Ksh 80, 000 and Ksh 2 million depending on the drugs and the duration of radiation treatment. For patients who require chemotherapy (treatment using injections), the cost and availability of drugs has equally posed great challenges in the management of cancer in the country. (National Assembly, 2011)

At the moment, there are only two radiation machines for a population of 40 million in the public health facilities in Kenya. This means one machine serves 20 million Kenyans. These two machines handle on average 150 patients per day running on a 3-shift programme from 7.00 am to midnight. To compound this challenge, the KNH Cancer Centre sees 40 to 50 new cancer cases per week. These do not include those cancer cases that have undergone surgery. (National Assembly, 2011)

There are also between 80 and 90 patients on chemotherapy every week at the Kenyatta National Hospital Cancer Treatment Centre alone. Thereafter, patients have to endure a six-week waiting period after diagnosis for treatment process to commence. This is worse in the case of patients who need radiation treatment because the waiting period is over 3 months. (National Assembly, 2011)

For the Kenyatta National Hospital Cancer Treatment Centre to cope, a minimum investment in six major radiation machines is required, but on condition that other centres are equally developed with similar equipment. (National Assembly, 2011)

The Mombasa County has one hospice situated at the Coast Province General Hospital, which provides care to cancer and HIV/AIDS patients. It is a registered charity and began operations in August 2001 within Coast General Hospital. In 2006 the Hospice moved to its own dedicated premises in the grounds of the hospital. On average the Hospice attends to 75 patients a month through the out-patient services and home visits. The hospice has 3 palliative care personnel (KEHPCA 2011).

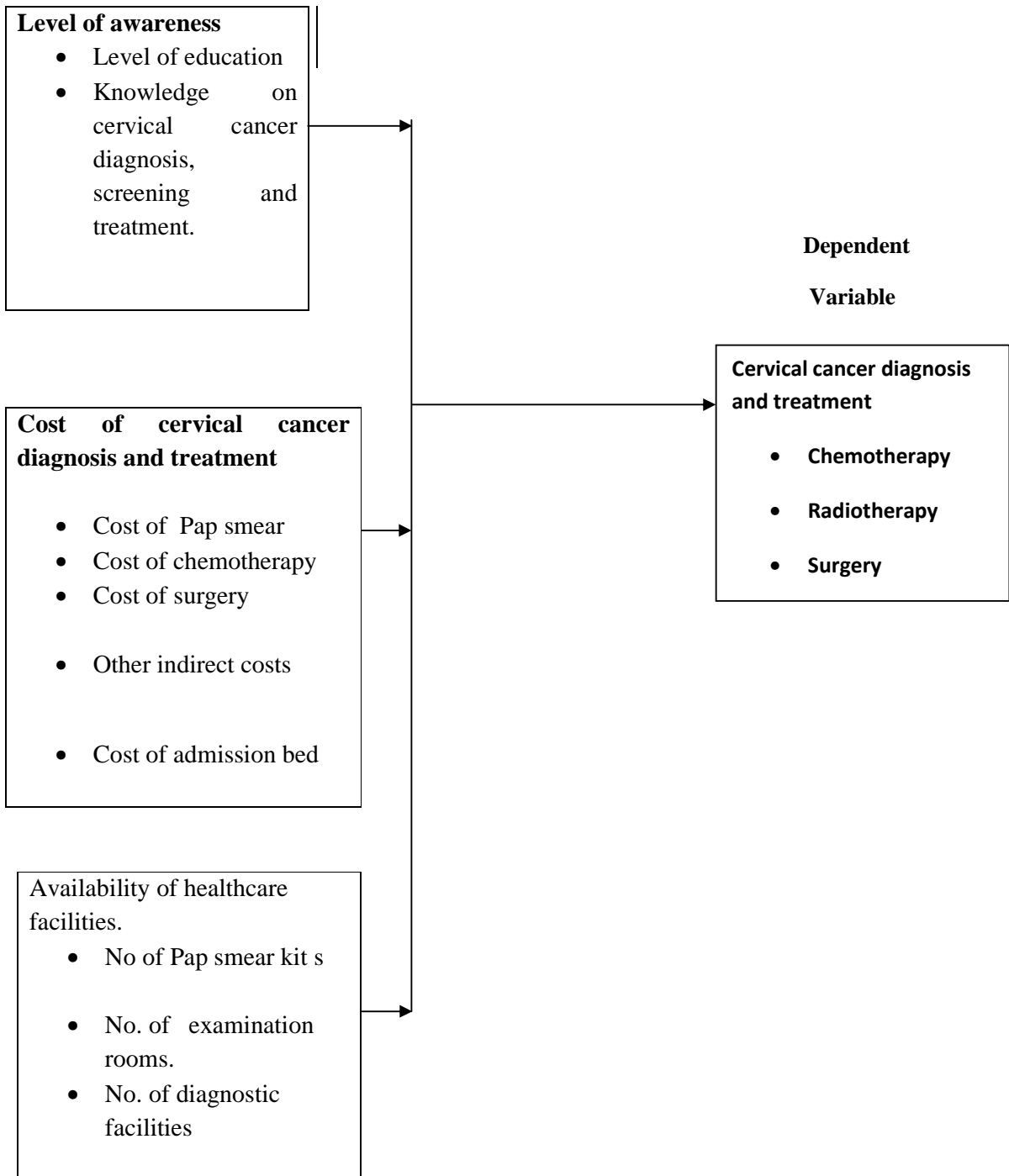
## **2.5 Conceptual Framework.**

The conceptual frame work outlined the independent and dependent variables. The independent variables affect the diagnosis and treatment of cervical cancer. The independent variables were: level of awareness, cost of treatment and diagnosis, and availability of healthcare facilities. The dependent variable was cervical cancer diagnosis and treatment at the few selected public hospitals.

It represents the schematic diagram showing the relationship between the independent variables and the dependent variable.

**Figure 1: Conceptual framework**

**Independent Variables**



## **2.6 Summary of Literature Reviews**

The Literature reviewed looks at factors affecting cervical cancer diagnosis and treatment in the developed and developing countries. It gives an overview of how level of awareness of healthcare workers, cost of diagnosis and treatment and availability of healthcare facilities can affect cervical cancer and diagnosis.

The literature reviewed has indicated the importance knowledge of healthcare providers on cervical cancer diagnosis. Information obtained from the healthcare personnel is key for cancer diagnosis and treatment and little or no knowledge on the healthcare worker can affect the outcome of the treatment and diagnosis.

Treatment and diagnosis of cancer is costly to the patient as there are other indirect costs associated costs and the poor are at a higher risk of dying from the disease. Early diagnosis and treatment can prevent the deaths.

Finally the access to healthcare facilities has an influence in cervical cancer diagnosis and treatment. This study therefore sought to bring out information on the situation in the Mombasa County to show if these generic problems exist.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the methodology that was used to carry out the study. It gives a detailed analysis of the research design, the target population, the sampling design, sample size determination, data collection tools and data analysis techniques

#### **3.2 Research design**

The research project was carried out in the health institutions at the Mombasa County. The research record included both qualitative and quantitative approach. The data was obtained from the Likoni sub district hospital, Port Reitz district hospital, Tudor district hospital and the Coast Provincial General Hospital all being major hospitals in the Mombasa County. Primary data was obtained within a ten days. Health Records of up to five years was followed up. The study sought to show how the level of awareness of the healthcare workers, cost and unavailability of healthcare workers affects cervical diagnosis and treatment within the Mombasa County. The study employed a descriptive cross-sectional survey design on doctors and nurses working at the selected government health facilities in the County. According to Lovell and Lawson (1971) descriptive research is concerned with conditions that already exist, practices that are held, processes that are ongoing and trends that are developing. Descriptive survey was most appropriate for the purpose of study was to create a detailed description of the issue (Mugenda & Mugenda, 1999). Descriptive survey design was used on the doctors and nurses in order to keep the number of study subjects manageable while enabling the investigation of the population by selected samples to analyse and discover occurrences.(Creswell 2003) and (Best and Khan, 2004).

#### **3.3 Target population.**

The target population was 300 professionals comprising of doctors, nurses and administration personnel working in the Tudor district hospital (20), Likoni District hospital (15), Port Reitz district hospital (55), and the Coast Provincial General Hospital (210) within the Mombasa

County. The doctors and nurses working in the MCH/FP Clinics and gynaecology clinics were targeted because of the nature of the condition that was being investigated. All carders of nurses and doctors were questioned provided they worked in the maternal child health clinics and the gynaecology wards. The study did not include patients.

### 3.4 Sample size and sampling Procedure

The sample of the study was drawn from doctors and nurses working at the Likoni District hospital, Tudor District Hospital, Port Reitz hospital and Coast Provincial General Hospitals through stratified sampling procedure.

Bartlett, J. E., II, Kotrlik, J. W., & Higgins table was used to determine the sample size. Categorical data assuming alpha levels of .10,.05, or .01. The margins of error used in the table are .05 (Bartlett et al., 2001). The total population of nurses and doctors working in MCH/FP and gynaecology clinics and wards selected hospital in Mombasa County was 300; hence from the table 169 nurses and doctors participated in the study.

Stratified sampling was suitable because it formed several segments or strata. Random sampling was then selected from each stratum. There were four strata made up of the four different hospitals.

#### 3.4.1 Sample size distribution table

Hospital	Target population (doctors& nurses)	Sample size
Coast general hospital	210	118
Port Reitz district hospital	55	31
Tudor district hospital	20	11
Likoni District hospital	15	9
<b>Total</b>	<b>300</b>	<b>169</b>



### **3.5 Data collection methods and instruments.**

To ensure objectivity and hence comprehensiveness of this study, both primary and secondary data was used. The primary data which was collected by structured questionnaires schedules for personal interviews. The Structured Questionnaires schedule was divided into demographics, open and closed format to determine how healthcare workers level of awareness, cost and availability of facilities has an influence on cervical cancer diagnosis and treatment programs. The questionnaire as a data collection tool allowed the researcher to gather structured information from the respondents. It also made analysis easy due to the structured information in it. Interview guides were administered on the hospital administrators in order to compare and verify with information from the questionnaires. Secondary data was gathered from various sources such as past literature, publications, internet and government documents.

### **3.6 Data collection procedure**

Once permission to carry out the research was obtained from the County Director of Medical services, the researcher was able to visit sampled hospitals. The structured questionnaires, interviews were administered personally by the researcher and the assistant. The interviews were conducted using an interview guide and involved note taking. In this study secondary data was gathered from various sources such as past literatures, medical records, publications, internet and analysis from the government documents.

### **3.7 Validity and reliability of research instruments.**

Validity is the appropriateness and usefulness of the inferences a researcher makes while reliability is the consistency of scores or answers from one administration of instruments to another and from one set of items to another.

#### **3.7.1 Validity of instruments**

A pilot study was carried out in one the government hospitals in town; the hospital was not included in the sample size. Kombo and Tromp defined validity of a data collection

instruments as the accuracy or meaningfulness and technical soundness of the research. It was to measure of how well a test measures what it was supposed to measure (Kombo and Tromp 2006).The questionnaire was also done in a very simple language that the respondents understood. To overcome the challenges the questionnaire was designed such that there is counterchecking of questions whose answers will verify previously given answers.

### **3.7.2 Reliability instruments**

The questionnaire was accepted as reliable the tendency toward consistency found in repeated measurements is referred to as reliability. (Carmines and Zeller, 1979). Retesting method will be employed as it is less costly in determining the reliability of the data collecting instrument. The response of each participant is expected to indicate that the tools will be appropriate and could be used in future. The purpose of the pilot study is to remove any irrelevant question items and focus the questionnaire so that the right information is collected. The outcome of the pilot will then lead to the improvement of the questionnaire and thereby ensure consistency.

### **3.8 Ethical consideration.**

Permission from the Provincial Director of Medical Services was sought for before conducting the research. A copy of the same will be provided to any respondent who demanded.

Access and acceptance was sought from in the respective institutions through the hospital administrators.

Participants were explained to the purpose of the research and the importance of their responses towards the success of the research.

Confidentiality and anonymity was guaranteed as numbers instead of names will be used. Informed consent was sought for from all respondents.

### 3.9 Data analysis and Presentation

The researcher used both quantitative and qualitative methods to analyze data. According to Kothari (2004), data processing and analysis is described as the categorizing, manipulating and summarizing of data in order to obtain answers to research questions. Simple descriptive statistics was used such as percentages as this has an advantage of being easily understood especially when making results known to a variety of readers.

The results of data analysis were presented in tables to display the information obtained from the respondents. The quantitative data collected was summarized and analyzed by using statistical package for social sciences (SPSS) version 20 and exported to MS Word. Martin and Acuna (2002) observe that the statistical Package for Social Sciences (SPSS) is able to handle large amounts of data; it is time saving and also quite efficient. The responses with open ended items (qualitative data) in form of phrases and words will be organised by creating categories, themes and patterns related to research questions (Mugenda & Mugenda, 1999). Chi- square test will run to test hypothesis.

### 3.10 Operational Definitions of Variables.

Independent variables	Indicator	Measure	Data Collection Method	Scale	Tool of Analysis
Level of awareness	Education level  Level of knowledge on cervical cancer diagnosis with each treatment undertaken.	No. of healthcare staffs with certificate, diploma and degree.  No. of workers who can each answer questions correctly.	Questionnaires and interviews.	Nominal	SPSS

Cost of cervical cancer diagnosis and treatment	<p>Cost chemotherapy</p> <p>Cost of diagnostic tests.</p> <p>Other indirect costs.</p> <p>Cost of Pap smear.</p> <p>Cost of an admission bed.</p>	<p>No. of patients who can afford chemotherapy, radiotherapy.</p> <p>No. of patients who can afford diagnostic tests.</p> <p>Transport, caregiver.</p> <p>No. of patients who can afford Pap smear test.</p>	Medical records.	Nominal	SPSS
Availability of Healthcare facilities.	<p>Theatres.</p> <p>Laboratory facilities.</p> <p>Examination machine.</p>	<p>No. of operating theatres.</p> <p>No. of laboratory facilities.</p> <p>No. of admissions.</p> <p>No. of examinations tables.</p>	<p>Checklist.</p> <p>Field visits.</p> <p>Questionnaires.</p>	Nominal	SPSS
Cancer treatment and diagnosis	<p>Chemotherapy</p> <p>Radiotherapy</p> <p>Surgery</p> <p>Pap smear test</p>	<p>No. of patients who come for chemotherapy.</p> <p>No. of patients who come for radiotherapy.</p> <p>No. of patients who come for Pap smear test.</p>	<p>Questionnaire</p> <p>Medical records.</p>	Nominal	SPSS

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introduction

In this chapter, the analysed data is presented together with relevant interpretations. The objective of the study was to assess the level of awareness of the healthcare workers on cervical cancer and treatment; to establish how cost and availability of healthcare facilities affects diagnosis and treatment of cervical cancer at the Mombasa County. The findings have been presented in four parts: Demographic characteristics of respondents, awareness levels of the healthcare workers, cost of diagnosis and treatment and availability of healthcare facilities and hypothesis testing.

#### 4.2 Response rate

The study initially targeted one hundred and sixty nine respondents which included four hospital administrators from each facility, however only one hundred and sixty four were able to respond. This included the four hospital administrators.

Table 4.1: Response Rate.

	Number of respondents That were to be interviewed	Actual Number interviewed
Tudor district hospital	11	11
Likoni District Hospital	9	9
Port Reitz District Hospital	31	31
Coast Provincial General Hospital	118	113
<b>TOTAL</b>	<b>169</b>	<b>164</b>

Table 4.1 shows that the research was conducted in four hospitals. A total of 164 respondents including four Key informants responded. This gave a 97% response rate. The good response was attributed to the effectiveness of the data collecting instrument and flexibility in timing of the researcher. Large percentage of data was collected in the evening and at night.

### 4.3 Demographic characteristics of respondents.

The study was set to determine factors affecting cervical cancer diagnosis and treatment at the Mombasa County. The table summarises the background information of the respondents of the study.

Table 4.2 Demographic characteristics of the respondents.

<b>Respondents</b>	<b>Frequency</b>	<b>Percentage %</b>
<b>(sex)</b>		
Male	47	28.7
Female	117	71.3
<b>Total</b>	<b>164</b>	<b>100</b>
<b>(Age)</b>		
Below 25 years	10	6.1
26-30 years	42	25.6
31-35 years	44	25.8
36-40 years	41	25.0
41-45 years	1	0.6
46-50 years	21	12.8
51 years and above	5	3.0
<b>Total</b>	<b>164</b>	<b>100</b>

<b>Respondents</b>	<b>Frequency</b>	<b>Percentage %</b>
<b>(Highest level of education)</b>		
Certificate	45	27.4
Diploma	99	60.4
Degree	20	12.2
<b>Total</b>	<b>164</b>	<b>100</b>
Doctor	14	8.5
Nurse	132	80.5
Clinical officer	8	4.9
Intern clinical officers	10	6.1
<b>Total</b>	<b>164</b>	<b>100</b>

From the table 4.2, 71.3 % of the respondents were female majorly between 26 -40 years. On the highest level of education, the larger majority are Diploma holders with 60.1% with 12.2 % degree holders' majority being nurses 80.5% and the rest 19.5%. This shows that the study targeted the right population of healthcare workers in the County.

#### **4.4 Level of awareness**

An analysis of the respondents' level of awareness on what causes cervical cancer showed that 30.5% knew the cause of the disease, 68.9 % did not know and about 6% giving no response. On whether it is curable 70.1% strongly disagreed, 25.6% agreed .The result indicated a low awareness on cervical cancer diagnosis and treatment. This is also consistent with another study conducted in Nigeria and Cameroon.( Catherine McCarey et al, 2011,Chizoma and Bola, 2012).

Table 4.3 Level of awareness of the Healthcare workers

<b>Respondents</b>	<b>Frequency</b>	<b>Percentage %</b>
<b>(Do you know what causes Cervical cancer)</b>		
Yes	50	30.5
No	113	68.9
No response	1	0.6
<b>Total</b>	<b>164</b>	<b>100</b>
<b>(Is cervical cancer curable?)</b>		
Strongly agree	5	3.0
Agree	42	25.6
Disagree	115	70.1
Strongly Disagree	2	1.2
<b>Total</b>	<b>164</b>	<b>100</b>

From table 4.3, the level of awareness is low since 68.9% of the respondents did not know what causes cervical cancer and about 70.1% disagreed that it was curable. This calls for more awareness on the disease diagnosis and treatment among the healthcare workers.

The study was set to test the following null hypothesis:

$H_0$  = There is no relationship between level of awareness of the healthcare workers and cervical diagnosis and treatment at the Mombasa County.

Alternative hypothesis



$H_1$  = There is a relationship between the level of awareness of the healthcare workers and cervical cancer diagnosis and treatment at the Mombasa County.

For this analysis, the probability level was set at 0.005.

Table 4.4 Chi-Square tests-relationship between level of awareness of the healthcare workers and cervical cancer diagnosis and treatment at the Mombasa County.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.041 <sup>a</sup>	9	.000
Likelihood Ratio	33.666	9	.000
Linear-by-Linear Association	14.916	1	.000
N of Valid Cases	164		

From the table, chi-square statistic is 34.041, the chi square has nine (9) degrees of freedom and the p value is .000. The null hypothesis is rejected since  $p < 0.005$  and alternative hypothesis accepted. There is a relationship between the level of awareness of healthcare workers and cervical cancer diagnosis and treatment.

#### 4.5 Cost of diagnosis and treatment.

On cost of diagnosis and treatment, the findings of the study revealed that the cost treatment is high and not all patients are able to pay for their treatment.

Table 4.5 Cost of diagnosis and treatment

<b>Respondents</b>	<b>Frequency</b>	<b>Percentage %</b>
<b>(Average Cost of chemotherapy per session)</b>		
Below KSh1,000	3	1.8
Between KSh1,001-2,000	23	14.0
BetweenKSh2,001- 3,000	38	23.2
BetweenKSh3001-4,000	8	4.9
Between KSh4001-5000	63	38.4
AboveKsh 5000	27	16.5
No response	2	1.2
<b>Total</b>	<b>164</b>	<b>100</b>
<b>(Are the patients able to pay)</b>		
Yes	2	1.2
No	153	93.3
I don't Know	9	5.5
<b>Total</b>	<b>164</b>	<b>100</b>

From table 4.4 the study revealed that cost of one session of chemotherapy was variable with 63 of the respondents showing between Ksh 4001-5000, 38% showing between Ksh 2001-3000, 27% above 5000 and 23% revealing between Ksh 1001-2000. These variations in prices are mainly because of the nature of combinations of chemotherapy drugs given to different patients according to American Cancer Society (1989).

The study tested the following hypothesis

$H_0$  =There is no relationship between the cost of treatment and diagnosis and the patients diagnostic and treatment status at the Mombasa County.

H<sub>1</sub>= There is a relationship between cost of cervical cancer diagnosis and treatment and the patient's ability to pay for the treatment at the Mombasa County.

For this analysis, the probability level was set at 0.005.

Table 4.6 Chi square Tests-relationship between cost of diagnosis and treatment and the patients diagnostic and treatment outcome.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.913 <sup>a</sup>	12	.003
Likelihood Ratio	23.562	12	.023
Linear-by-Linear Association	7.613	1	.006
N of Valid Cases	164		

For the table 4.6, chi square statistic is 29.913, the chi square has 12 degrees of freedom and the p value is .003. Since the p value is less than (.005) we reject the null hypothesis and accept the alternative that there is a relationship between the cost of cervical diagnosis and treatment and the patient ability to pay for the treatment.

#### **4.6 Availability of Healthcare facilities.**

On availability of healthcare facilities many studies have shown that most developing countries are lacking facilities to adequately fight cervical cancer (National Assembly, 2011). The findings revealed that there are inadequate facilities for diagnosis and treatment of cervical cancer patients at the healthcare facilities. The findings also revealed that there are inadequate patient examination rooms and admission beds for cervical patients.

Table 4.7 Availability of healthcare facilities

<b>Respondents</b>	<b>Frequency</b>	<b>Percentage %</b>
<b>( No of patient examination rooms)</b>		
One	8	4.9
Two	39	23.8
Three	57	34.8
Four	9	5.5
Above five	50	30.5
None	1	0.6
<b>Total</b>	<b>164</b>	<b>100</b>
<b>(No of admissions per day)</b>		
Below 10	119	72.6
Between 11-20	44	26.8
No response	1	0.6
<b>Total</b>	<b>164</b>	<b>100</b>

From table 4.4 the study revealed 34.85 of the facilities had three examination rooms, 23.8% had two and 30.5% had above five. The above five was a finding in the main tertiary hospital only. It is evident that the facilities in the healthcare institutions are inadequate to admit cervical cancer patients. This is shown by 72.6% below ten admission responses.

The study tested the following hypothesis;

$H_0$  = There is no relationship between availability of healthcare facilities and diagnosis and treatment of cervical cancer at the Mombasa County.

$H_1$  = There is a relationship between the availability of healthcare facilities and diagnosis and treatment of cervical cancer at the Mombasa County

Table 4.8 Chi-square Tests- Relationship between availability of healthcare facilities and diagnosis and treatment of cervical cancer

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	219.749 <sup>a</sup>	10	.000
Likelihood Ratio	73.020	10	.000
Linear-by-Linear Association	1.874	1	.171
N of Valid Cases	164		

From table 4.8, the chi-square statistic is 219.749, the chi-square has ten (10) degrees of freedom and the p value is .000. Since the p value is less than the 0.005 the null hypothesis is rejected and the alternative hypothesis accepted. There is a relationship between the availability of facilities and diagnosis and treatment of cervical cancer.

#### **4.7 In depth Interview Guide for Key informants.**

In-depth interviews were conducted on four hospital administrators to find out their views on factors affecting cervical cancer diagnosis and treatment in selected public hospital facilities. This was useful in drawing out information not captured by the questionnaires. The information from the informants revealed that awareness of cervical cancer treatment and diagnosis was inadequate among the healthcare workers. The need for creating more awareness was raised in all four facilities. Majority of the informants cited cost of treatment as being a challenge to the patients. This impacted negatively on their health status, many left with no option but to wait to die. About the issue of facilities it was a general challenge in all the four health care facilities. There were no Pap smear tests services in three out of the four facilities. Examination rooms were limited in all the four facilities. All cervical cancer patients in three out of four facilities were being referred due to unavailability of facilities to take care of cervical cancer patients. They suggested better screening and vaccinations campaigns which would lower the mortality levels of the women.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter sums up the findings of the research; outlines the implication of the study findings, Discussions and conclusions based on the research findings, recommendations and other suggestions for further research.

#### **5.2 Summary of findings.**

##### **5.2.1. Level of Awareness on Cervical Cancer**

The first objective was to assess the level of awareness of the healthcare workers on cervical cancer and diagnosis. The findings revealed that 60% of the respondents were diploma holders with 27% and 12% being certificate and degree holders respectively. Majority of the healthcare workers in frequent contact with the patients are nurses having an 80% response rate. There were very few doctors (8.5%) available in the facilities with several intern clinicians. The null hypothesis was rejected . The alternative hypothesis was that there is a relationship between the level of awareness of the healthcare workers and cervical cancer diagnosis and treatment was accepted.

##### **5.2.2 Cost of Diagnosis and Treatment**

In examining how the cost of cervical diagnosis and treatment affects the ability of the patient to pay for the treatment, the findings revealed that the cost of one session was between Ksh 2000 and Ksh 5000. The study revealed that only 1.2% of the patients are able to pay and more than 93.3% are not able to pay for these treatments. The null hypothesis was rejected and the alternative that states that there is a relationship between cost of cervical cancer treatment and the ability of the patient to pay for the treatment was accepted.

### **5.2.3 Availability of Health Care Facilities**

The final objective was to establish how availability of healthcare facilities affects cervical cancer diagnosis and treatment. The study revealed that there are less than ten admissions per facility due to the unavailability of the facilities to examine and accommodate cervical patients.

The null hypothesis was rejected and the alternative accepted stating that there is a relationship between the availability of healthcare facilities and the diagnosis and treatment of cervical cancer patients was accepted.

### **5.3 Discussion.**

In terms of level of awareness, 63.4% percent of the respondents were not aware of the causes of cervical cancer. These findings are closely related with those of Catherine McCarey et al (2011) that revealed that lack of awareness among healthcare workers is the prime barrier for access cervical cancer prevention. Another study done by Chidzoma and Bola (2012) found out that many patients were eager to learn about cervical cancer and screening methods but information was simply not being given. The hypothesis test carried out revealed that there is a relationship between the level of awareness of the healthcare workers and cervical cancer diagnosis and treatment. These results concur with those of Urasa and Darja(2011) who found that there was a significant association between knowledge levels of cervical cancer and disease transmission.

On cost of cervical cancer diagnosis and treatment it was shown through the study that, diagnosis and treatment was costly and most patients could not afford it. These results concur with the National cancer Institute-France (2007) which revealed that financing cancer treatment was a major challenge for both developed and developing countries The hypothesis test carried out was accepted. It revealed that there is a relationship between cost of diagnosis and treatment and patients ability to pay for the treatment. The findings were closely related with those of the D, Penick (2011) that showed poor people delay or refuse treatment due to high associated costs.

The final objective was focused on availability of healthcare facilities. It was revealed that most of our healthcare institutions do not have adequate facilities to take care patients with

cervical cancer as explained by the National Assembly (2011). The hypothesis test carried out revealed that there is a relationship between availability of healthcare facilities and diagnosis and treatment of cervical cancer. This finding was closely related with Pezzatini, Marino et al (2007) which showed availability of can affect the diagnosis and treatment of the patients.

#### **5.4 Conclusions**

Based on the findings it can be concluded that the majority of the healthcare workers in contact with patients are nurses. Those more than a 50% of the healthcare workers have inadequate knowledge on cervical cancer and diagnosis.

It can also be concluded that the cost of diagnosis and treatment of cervical cancer is high and many patients cannot afford to pay for it.

Additionally, it can be concluded that the healthcare facilities are inadequate for the care of the cervical cancer patients.

Finally, it can be concluded that there is a relationship between the variables for which hypotheses has been tested on the factors affecting cervical cancer patients diagnosis and treatment at the Mombasa County.

#### **5.5 Recommendations**

The following recommendations have been put forward by the researcher based on findings from the study:

1. It is the recommendation of the researcher that the healthcare workers be sensitised on cervical cancer diagnosis and treatment. The nurses being the majority of the healthcare workers should be trained and equipped with knowledge on cervical cancer diagnosis and treatment.
2. The government should initiate awareness programs and cheap and affordable chemotherapeutic drugs should be made available to all patients.
3. The healthcare facilities should be upgraded to have the basic equipment and facilities able to take care of cervical cancer patients adequately.



## **5.6 Areas Recommended for Further Research**

The study focused on factors affecting cervical cancer diagnosis and treatment at the Mombasa County only. Similar comparative studies could be carried out in other Counties. A study could also be done to examine the private facilities within the county.

Further study can also be done to get the direct opinion of the cervical cancer patients themselves.

## REFERENCE

- Airede, L.R., Onakewor, J.U.E., Aziken, M.E., Ande, A.B.A., Aligbe, J.U. (2008). *Carcinoma of the uterine cervix in Nigerian women: The need to adopt a national preventive strategy*.  
Journal 2008; 11(1): 1-11. Sahel Medical. Retrieved from <http://www.ajol.info/index.php/afrij/article/download/86306/76133> date?
- American Cancer Society. (1989). *Cancer and the poor: A report to the Nation*. 1989. A national Cancer Institute publication.
- AMPATH-U of T. (2010). *Cervical cancer in Kenya*. AMPATH Report. Retrieved from <http://www.ampathoncologyinstitute.org>.
- Anorlu, R.J., Ribiu, K.A., Abudu, O.O., Ola, E.R. (2007). *Cervical Cancer screening practices among general practitioners in Lagos Nigeria*. Journal Obst. Gynaecol., 27(2):181-184.
- Ayinde, O.A., Omigbodun, A.O. (2003): *Knowledge, attitude and practices related to prevention of cancer of the cervix among female health workers in Ibadan*. J Obstet Gynaecol. 2003; 23(1): 59-62 (Pub med)
- Best, J.W. & Kahn, J.V. (2004). *Research in Education*. (7<sup>th</sup> ed.). New Delhi, India: Prentice Hall.
- Barlett, James E. II, Kortlik, Joe. W. and Higgins, Chadwick. C. (2001). *Organisational Research; Determining appropriate sample size in survey research*. Organisational Information Technology, learning and performance journal, 19; 1
- Cancer research UK. (2012). *Cancer treatments*. Retrieved from <http://www.cancerresearchuk.org/about>
- Cancer facts and figures , (2012). Retrieved from <http://www.cancer.org/acs/groups/content/.../documents/.../acspc-031941.pdf>
- Catherine Mc Carey, David Pirek, Pierre M et al. *Awareness of HPV and cervical cancer prevention among Cameroonian healthcare workers*. BMC Women's Health (2011).

- Carr, K.C., Sellors, J.W. (2004). *Cervical Cancer screening in low resource setting using visual inspection with acetic acid*. Journal of Midwifery and women health 2004 July-Aug; 49(4): 329-37.
- Chizoma, M. Ndikom and Bola, A. Ofi (2012). *Reproductive health* 2012, 9:11.
- Creswell, J.W. (2003). *Research Design: Qualitative, Quantitative and Mixed methods Approaches*. (2<sup>nd</sup> ed.). California, USA: Sage.
- Dennu, L. (2008). *Prevention of Cervical Cancer*. *Reproductive Health Matters*. 2008; 16(32).18-31.
- Diplomat, E. A. (2012). *The cancer burden Kenyans has to bear*. Special Reports - KNH. Diplomat East Africa (July, 2012).
- Evelyne Situma. (2013). *High cost of Cancer Treatment*. Business Daily , Sunday, 3<sup>rd</sup> February 2013: .
- Ferlay, J., Bray, F., Pisani, P., Parkin, D.M. (2002): *Cancer Incidence*. Globocan-IRCA.2002. Retrieved from [www.hu.ufsc.br/.../CAP%202%20-%20GASTOS%20DCA%20HPV.pdf](http://www.hu.ufsc.br/.../CAP%202%20-%20GASTOS%20DCA%20HPV.pdf)
- Global cancer statistics. ( 2002). *CA Cancer J Clin* 2005;55:74-108
- Global Medicine Report. (2011). Retrieved from [http:// www.dmu.edu/globalhealth](http://www.dmu.edu/globalhealth).
- J, Moodley., M, Kawonga., J ,Bradley., M, Hoffman. (2006). *Challenges implementing cancer screening programs in South Africa*. *Cancer Epidemiology* Vol 30(4),361-368.
- Kothari, C.R. (1985). *Research Methodology: Methods and techniques*. New Delphi: Willey Eastern Ltd.
- Kothari, C.R. (2004) *Research Methodology, methods and techniques* (2<sup>nd</sup>ed), New Delhi: New Age International Publisher.
- Kenyatta National Hospital Cancer Unit Report (2011)
- Kenya National Cancer Control strategy. (2011). Retrieved from [www.ipcrc.net/pdfs/Kenya-National-Cancer-Control-strategy.pdf](http://www.ipcrc.net/pdfs/Kenya-National-Cancer-Control-strategy.pdf)

- Kidula, L. (2012). *Cervical Cancer in Kenya: A presentation to a Cancer workshop – KNH.*
- Kim, J.J., Brisson, M., Edmunds, W.J., Goldie, S.J. (2008). *Modelling Cervical Cancer*
- Kombo, K.D., & Tromp, A.L.D. (2006). *Thesis Writing: An Introduction.* Nairobi: Pauline’s Publications.
- Lee, J., Seow, A., Ling, S.L., Peng, L.H.(2002). *Improving adherence to regular pap smear screening among Asian women: a population-based study in Singapore.* Health Educ Behav. 2002 Apr;29(2):207-18. PubMed PMID: 11942715
- Lewis, J. Merley. (2004). *Situational analysis of cervical cancer ; Latin America*
- Lovell, K. & Lawson, K.S. (1971). *Understanding Research in Education.* London: London University Press.
- Loehrer, P.J., Sr, Greger, H.A., Weinberger, M. et al.(1991). *Knowledge and beliefs about cancer in a socioeconomically disadvantaged population.* Cancer 1991; 68: 1665–1671.
- Martin, K & Acuna, C. (2002). *SPSS for Institutional Researchers.* Bucknell Lewisburg, Pennsylvania: University Press.
- Mombasa District Strategic Plan. ( 2005-2010), page 8.
- Meropol, N.J., Schulman ,K.A.(2007). *Cost of Cancer Care: Issues and Implications.* Journal of Clinical Oncology 2007; 25:180-186.
- Ministry of Health Report.(2010). “*Cancer Burden in the Country*”2010-[www.pub.iaea.org](http://www.pub.iaea.org)
- Mugenda, M. Olive and Mugenda, A.G.(1999) *Research methods, Quantitative and Qualitative Approaches,* Nairobi: Acts press.
- Ministry of Health Report. (2010). “*Cancer Burden in the Country.* Retrieved from <http://www.pub.iaea.org>
- M. Pezzatini, G. Marino, S. Conte and V. Catracchia.(2007). *Oncology in Africa.* Ann Oncol (2007) 18(12):2046-2047.

National Assembly. (2011). *Policy brief on the situational analysis of cancer in Kenya*. Department of research.

Pact Kenya. (2010). *Cancer Assessment in Africa and Asia report (2010)*. Retrieved from <http://www.cancer.iaea.org/newstory>.

Pan American Health Organization. (2004). *Health accounts and national health accounts in the Americas*, Washington, DC; 2004:1-6.

Parkin, D. M., Bray, F., Ferlay, J., & Pisani, P. (2005). *Global Cancer Statistics, 2002*. CA: A Cancer Journal for Clinicians, 55 (2), 74 - 108.

Spayne, Y., Ackerman, I., Milosevic, M., Seinfeld. (2007). *Cancer: A Failure of Screening*: Eur. Formal Public Health, 18(2): 162-165.

Sue.J ,et al.(2005). *Cost effectiveness of cervical cancer screening in five developing countries*. A new England journal of medicine.Retrieved fom <Http://www.nejm.org>.

Urasa, M. and Darja, E . (2011).*Knowledge of cervical cancer and screenining practices among nurses at a regional Hospital in Tanzania*. Afr Health Sci. 2011 March; 11(1): 48–57.

PMCID: PMC3092321

World Health Organization Report. (2011). Retrieved from

<http://www.who.org/www.africasciencenews.org>

[www.parliament.go.ke/../](http://www.parliament.go.ke/../) policy-brief-on-the-situational-analysis-of –cancer 2011 date?.

Zvavahera, M., Chirenje, Simbarashe R, et al. (2001) *Situation analysis for cervical cancer diagnosis and treatment in East, Central and Southern African Countries*. Bulletin of the World Health Organisation, 2001,79(2)

**APPENDIX 1: Letter of Transmittal**

MARY SELESA ONDITI

P.O. BOX 82887- 80100,

MOMBASA.

17<sup>th</sup> JULY, 2013

THE COUNTY DIRECTOR OF MEDICAL SERVICES,

P.O.BOX -00100,

MOMBASA.

Dear Sir / Madam,

**RE: PERMISSION TO CONDUCT RESEARCH.**

I am a post graduate student at the University of Nairobi pursuing a Masters of Arts degree in Project Planning and Management (MAPPM). As part of partial fulfilment for the degree I am required to carry out a research. My topic of study is on 'factors affecting cervical cancer diagnosis and treatment in selected public hospitals at the Mombasa County.

I would like to request for your permission to carry out the research in the healthcare facilities in the Mombasa County. The research will involve interviewing of Healthcare workers in the health centres in each constituency. The information obtained will be used purely and solely for academic purposes and will be treated with utmost confidence. Names or any other personal details shall not appear in the report.

I look forward to your kind and favourable response.

Yours faithfully,

Mary Selesa Onditi

## QUESTIONNAIRE

### INTRODUCTION

My name is Mary Selesa Onditi, a Master of Arts student at the University of Nairobi, Mombasa Campus. I am conducting a research on factors affecting cervical cancer diagnosis and treatment in selected public health facilities at the Mombasa County. The findings of the study will be used to create more awareness on cervical cancer and to create the need for more affordable treatment and facilities.

### CONFIDENTIALITY AND CONSENT

You have been randomly selected to participate in the study. Consequently, with your consent, kindly respond to this questionnaire. We would like to assure that the information that you share with us will be treated with strict confidentiality. Your name will not be written on this form, and will not be used in connection with any information that you give. You do not have to answer any question that you do not want to. However, your honest answers to the questions will be highly appreciated in helping us understand better the factors hindering cervical cancer diagnosis and treatment at the Mombasa County.

Would you be willing to participate?

Yes..... No.....

Please fill in an answer or tick (✓) as appropriate.

#### Section one: Background information

1. Gender

(1) Male..... (2)Female.....

2. Age

a) Below 25 years .....(1)

b) 26-30 years .....(2)

c) 31-35 years .....(3)

d) 36-40 years .....(4)

- e) 41-45 years .....(5)
- f) 46- 50 years .....(6)
- g) 51 years and above .....(7)

3. Highest level of education attained:

- a) Secondary School .....(1)
- b) Certificate .....(2)
- c) Diploma .....(3)
- d) Degree .....(4)
- e) Others (specify) .....(5)

4. Occupation:

- a) Doctor .....(1)
- b) Nurse .....(2)
- c) Others (specify) .....(3)

**Section 2: Level of Awareness.**

1. Do you know what causes cervical cancer?

- a) YES .....(1)
- b) NO ..... (2)
- c) I don't Know .....(3)

b) If Yes above please state, .....



2. Is cervical cancer curable? (Please tick your most appropriate answer)

- a) Strongly agree .....(1)
- b) Agree .....(2)
- c) Disagree .....(3)
- d) Strongly disagree.....(4)

**3. Section Three: Cost of cervical cancer diagnosis and treatment.**

1. What is the cost of screening cervical cancer?

- a. Below KSh 500 .....(1)
- b. Between KSh 501-1000 .....(2)
- c. Between KSh 1001-1500 .....(3)
- d. Between KSh 1501-2000 .....(4)
- e. Above KSh 2000. ....(5)

2. What is the average cost of one session of chemotherapy?

- a. Below KSh 1,000 .....(1)
- b. Between KSh 1,001-2,000 .....(2)
- c. Between KSh 2,001- 3,000 .....(3)
- d. Between KSh 3001-4,000 ..... (4)
- e. Between KSh 4001-5000 .....(5)
- f. Above Ksh 5000 .....(6)

3. Are all the patients who use the facility able to pay for the chemotherapy?

- a) Yes .....(1)

- b) No .....(2)
- c) Some ..... (3)
- d) I don't know .....(4)

**Section 4. Availability of Healthcare facilities.**

1. How many patient examinations rooms do you have in this facility. (Please tick where applicable)

- a) One .....(1)
- b) Two .....(2)
- c) Three .....(3)
- d) Four .....(4)
- e) Above five .....(5)
- f) None .....(6)

2. How many cervical patients do you admit per day?

- a) Below 10 .....(1)
- b) Between 11-20 .....(2)
- c) Between 21-30 .....(3)
- d) Between 31-40 .....(4)
- e) Above 40 .....

**Appendix 3: Key informants interview guide.**

I want to thank you for taking time to meet with me today. My name is Mary Selesa Onditi, a Master of Arts student at the University of Nairobi, Mombasa campus. I am conducting a research on the factors hindering early cervical cancer diagnosis and treatment.

This interview should take about an 30minutes to one hour. I will be taking notes to avoid missing on any of the comments you will give.

All responses will be kept confidential and for education purposes only. All information you will give will not identify you as a respondent. You don't have to talk about anything you don't want to and you may end the interview at any point.

Do you have any questions on what I have just explained?

Are you willing to participate in the interview?

Yes ..... NO.....

### **Appendix 3: Informant Interview Guide**

1. What are general challenges of patients who visit your facility with cervical cancer?
2. How competent are the nurses and Doctors in your facility in dealing with cervical cancer patients?
3. What challenges might they be facing when dealing with the cervical cancer patients?
4. How have the challenges influenced the diagnosis and treatment of the patients?
5. What is the cost implication on the family and on the patient living with cervical cancer?
6. In your opinion, what can be done to help this situation?
7. What are the common challenges facing your hospital facility?
8. What is the impact of the above (8) on the patients suffering from cervical cancer?
9. In your opinion what can be done to improve the situation at hand?
  - By the government?
  - By the institution?
  - By the society?
  - By family?
10. Before we close, is there anything else you would want us to add?

*Thank you for your time and input.*