

**DETERMINANTS OF DELAY IN SEEKING MEDICAL CARE AMONG
WOMEN WITH INVASIVE CERVICAL CANCER IN WESTERN KENYA**

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**A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university or for any other award.

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DEDICATION

To all the women who continue to suffer and die premature deaths because of cervical cancer.

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ABBREVIATIONS AND ACRONYMS

AIDS: Acquired Immune Deficiency Syndrome

ASCO: American Cancer Society

FIGO: The International Federation of Gynecology and Obstetrics

GLOBOCAN: Global Burden of Cancer.

HBM: Health Belief Model

HIV: Human Immunodeficiency Virus

HPV: Human Papilloma Virus

IEC: Information, Education and Communication materials

JOOTRH: Jaramogi Oginga Odinga Teaching and Referral Hospital

KCRH: Kakamega County Referral Hospital

KNBS: Kenya National Bureau of Statistics

KNH: Kenyatta National Hospital

NHIF: National Hospital Insurance Fund

SPSS: Statistical Packages for Social Sciences

SSA: Sub Saharan Africa

TB: Tuberculosis

VIA: Visual Inspection with Acetic Acid

VILI: Visual Inspection with Lugol's iodine

WHO: World Health Organization

DEFINITION OF OPERATIONAL TERMS

Cryotherapy: freezing of abnormal lesions with a probe cooled by liquid nitrous oxide or carbon dioxide in order to destroy them (Bashir *et al*, 2012).

Metaplasia: is a structural change from one type of epithelium to another.

Pap smear: the papanicolou smear is a screening method used to detect precancerous and cancerous cervical lesions. It involves use of a light brush applied to the cervix to obtain cytological sample for microscopic analysis.

Symptoms: any patient's complaints that led to a diagnosis of cervical cancer which include low back pain, foul smelling vaginal discharge and irregular vaginal bleeding among others.

Psychosocial: relating to the interrelation of social factors and individual thought and behavior. The combined influence that psychological factors and the surrounding social environment have on an individual's physical and mental wellness and their ability to function.

Cultural: A way of life, especially relating to the habits, beliefs, and traditions of a certain people.

Healthcare systems: A collection of all organizations, people and actions whose primary intent is to promote, restore or maintain health for a given population.

Patient delay: is the time period of three months or more between patients first being aware of their symptoms and their first contact with a medical practitioner (Pack & Gallo, 1938; Pakseresht, 2014).

Health system delay: defined as one month or more from the time of first patient visit to the physician and the beginning of treatment (Pack & Gallo, 1938).

ABSTRACT

Cervical cancer is a disease with tremendous public health significance. It is the leading cause of cancer morbidity and mortality among women in Kenya. Although curable through regular screening and treatment of precancerous lesions, its incidence is on the rise in Eastern Africa and many women are presenting with advanced disease leading to low survival rates. In Western Kenya, it is the most common type of cancer affecting women. Patient delay accounts for a large proportion of those who present with advanced disease in developing countries. Reducing the time from onset of first symptoms to diagnosis will effectively improve quality of life and prognosis of cervical cancer patients. This cross-sectional study was conducted to explore the process of symptom appraisal and determine socioeconomic, psychosocial, and cultural and health system factors that contribute to patient delay in seeking medical care for cervical cancer among women in two county referral hospitals in rural Kenya. In the setting where the study was carried out, the prevalence of HIV/AIDS is relatively high. There were 274 respondents who participated in the study. Face to face interviews using a pretested structured questionnaire and medical records review were carried out. Data was collected from all those who met the inclusion criteria and had given their informed consent with the option of voluntary withdrawal from the study at any stage. Descriptive and inferential statistics were analyzed using Statistical Packages for Social Sciences version 21 (SPSS Inc, USA). Chi square test and logistic regression was used to derive relationships between variables; results were considered significant with p value ≤ 0.05 . Outcome measures were a description of determinants of late presentation and diagnosis of cervical cancer. The findings indicate that 55% of patients waited more than three months before seeking medical care mainly because they did not appraise the symptoms as serious warranting medical attention. This was despite majority (85%) of them having good access to medical facilities. Psychosocial factors such as beliefs and perceptions held by the patients about initial symptoms and availability of social support networks were the most significant predictors of delay in seeking medical care. Age of patient, education level, employment status, access to insurance, beliefs about traditional medicine, knowledge of cervical cancer and preventative health orientation of the respondents also contributed to delay in seeking care. In conclusion, there is need to raise awareness about cancer to empower both the public and health workers to recognize its signs and symptoms early and seek treatment. There is a need for the patients to be economically empowered in order to access available cancer care. They could be encouraged to enroll in the National Health Insurance Fund in order to benefit from its various cancer treatment packages.

CHAPTER ONE: INTRODUCTION

1.1 Background information

Cervical cancer is a curable disease if diagnosed early. However, research by different scholars (Chadza *et al.*, 2012; Ndikom and Ofi, 2012) has established that many women seek treatment when the disease has reached an inoperable stage. Hospital management of cervical cancer patients in most developing countries remains a challenge as over 80% of women are diagnosed at advanced stages of the disease when effective treatment is no longer possible (Chadza *et al.*, 2012). This has contributed to the high mortality rates due to cervical cancer in developing countries. Cervical cancer is the third most commonly diagnosed cancer in women worldwide with more than 85% burden in developing countries (Jemal *et al.*, 2011). While the incidence of cervical cancer is on the decline in more developed countries, it is on the rise particularly in Africa.

Eastern Africa has the highest incidence (42.7/100,000) as well as the highest mortality rates from cervical cancer worldwide (Ferlay *et al.*, 2012). Currently, cervical cancer is the commonest cause of cancer deaths among women in Kenya (Bashir *et al.*, 2012) and this is attributed to the fact that most patients present late (Gichangi *et al.*, 2003). Despite lack of a National Cancer Registry, data at the Eldoret Cancer Registry, a population-based cancer registry for Western Kenya shows that cervical cancer is also the most common cancer among women in the region (Tenge *et al.*, 2009). In cancer care, prognosis is strongly associated with the stage of the disease at presentation. Therefore, barriers to access to care may delay diagnosis and/or treatment resulting in advanced disease at the time of presentation (Kimlin, 2010) when only palliative care is possible. Therefore efforts to promote early detection continue to be the focus of fighting cervical

cancer. The goal of early detection is to diagnose and treat cervical cancer patients in an early stage when the prognosis for long-term survival is best (Gyenwali *et al.*, 2013). Studies (Jemal *et al.*, 2011; Gyenwali *et al.*, 2013) have shown that women diagnosed with early or local (stage 1) cervical cancer have a 98% chance of surviving 5 years after diagnosis. However, the five year survival is decreased to 17% with distant cancer at diagnosis (ASCO, 2009).

Patient pathways to presentation and initial management are key determinants of cancer patient outcomes. Delays in seeking medical care are influenced by patient characteristics and health system factors among other factors. Patient delay refers to the time from onset of symptoms to the first medical consultation (as the time gap of more than 3 months (Pakseresht, 2014). Delays by patients could be due to differences in socio-demographic and cultural factors, a strong belief in traditional medicine, negative perceptions of the disease, poverty, poor education and denial (Pakseresht, 2014). Health system factors that contribute to delay are complex and are influenced mostly by doctor and institutional factors, such as delays in scheduling appointments, misdiagnoses, lack of enough trained personnel to adequately diagnose and treat patients and poor referral systems (Chadza *et al.*, 2012). To ensure optimal care and survivorship outcomes, it is important to understand and address these diagnostic and therapeutic issues. This study was therefore done to determine factors responsible for late presentation and diagnosis in Western Kenya.

1.2 Problem statement

The global distribution and rising prevalence of cancer shows a worrisome ‘cancer divide’ where survival rates are low and outcomes poor among socioeconomically

disadvantaged populations due to weak health systems and failure to start treatment early (Coleman, 2014; Randall and Ghebre, 2016). In particular, data at the Nairobi Cancer Registry shows that of the 2,354 women diagnosed with cervical cancer, 65% died (Phillips-Howard *et al*, 2014). While the incidence of cervical cancer is on the decline in developed countries, the incidence of cervical cancer in Kenya is on the rise (Ferlay *et al*, 2012). This coupled with low survival rates due to factors such as advanced disease at presentation pose a great challenge to the control of cervical cancer. Yet, only a small proportion of global resources for cancer are spent in countries of low and middle income (Farmer *et al.*, 2010). While it has been noted that patient delay accounts for a large proportion of those who present with advanced disease in Kenya (Otieno *et al*, 2010), we do not understand why women delay in seeking medical care after experiencing the signs and symptoms of cervical cancer. There is limited information on factors that contribute delay in seeking medical care among women with invasive cervical cancer patients particularly in Western Kenya which this study sought to investigate and document.

1.3 Justification

Cancer disproportionately affects the low and middle-income countries (Coleman, 2014) and the rural poor are more vulnerable to having worse patient outcomes (Kimlin, 2010). In Sub-Saharan Africa (SSA), about 60%–75% of women who develop cervical cancer live in rural areas (Ngutu and Nyamongo, 2015). Majority of poor people in Kenya live in the rural areas such as Western Kenya where the poverty levels are higher (KNBS, 2015). Although county-specific cancer rates are unavailable in Kenya, national referral hospital records suggest a high proportion of cervical cancer patients are from Western Kenya (PATH, 2004). Kisumu and Kakamega were specifically chosen because they

have functional level five hospitals with a high patient workload and significant referrals from within the region. If the current prevention and diagnostic strategies remain unchanged, cervical cancer cases are predicted to increase to over 130,000 cases annually by 2025 (Adewole, 2013). Cervical cancer incidence peaks at the most productive age between 33-55 years. This will impact negatively on the achievement of Sustainable Development Goals on poverty, education and gender equality. Delay in presentation of cancer patients has significant economic impact than treating patients with early-stage disease (Yau *et al.*, 2010).

1.4 Research questions

1. What socio- demographic factors contribute to delay in seeking medical treatment among invasive cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals?
2. What psychosocial factors contribute to delay in seeking medical care among invasive cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals?
3. What cultural and behavioral factors contribute to delay in seeking medical care among invasive cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals.
4. What healthcare system characteristics contribute to delay in seeking medical care?

1.4 Null Hypotheses

1. There is no association between socio-demographic characteristics and delay in seeking medical treatment among invasive cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals.
2. There is no association between psychosocial factors and delay in seeking medical care among invasive cervical cancer patients in this setting at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals.
3. There is no relationship between cultural and behavioral factors and delay in seeking medical care among cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals.

1.5 Objectives

1.6.1. General objective: To determine factors that contribute to delay in seeking medical care and diagnosis among women with invasive cervical cancer at Jaramogi Oginga Odinga Teaching and Referral and Kakamega Provincial General Hospitals.

1.6.2. Specific objectives

1. To determine the socio- demographic characteristics that contribute to delay in seeking medical care among invasive cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals.
2. To determine the psychosocial factors influencing women's ability to seek medical care among invasive cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals.

3. To establish the influence of cultural and behavioral factors on women's ability to seek medical care among invasive cervical cancer patients at Jaramogi Oginga Odinga Teaching and Referral and Kakamega County Referral Hospitals.
4. To determine healthcare system characteristics that contribute to delay in diagnosis among women with invasive cervical cancer in this setting.

1.7 Significance and Anticipated Output

Cervical cancer is preventable. With the increasing incidence of cervical cancer and poor patient outcomes due to advanced disease at presentation, there is need to understand factors which inform health seeking behavior among patients with in this setting. The findings of this study will help structure appropriate community-based programs which can address patient barriers to improve early presentation for diagnosis and treatment of cervical cancer. The government and other stakeholders can also use the results to inform cervical cancer control programs in modeling of specific training programs for healthcare professionals that can address health system barriers and improve time to diagnosis and referral of cervical cancer patients.

1.8 Delimitation and limitation

Due to time and financial constraints, the study was only done in two hospitals in the Western region of Kenya and this may not give a conclusive picture due to geographic and cultural differences. The study was based on self-reports and it was assumed that the patients gave honest answers and that there were minimal problems with recall of symptoms which may have introduced recall bias. The questionnaire was not translated to the local language but local research assistants who understood the language were used.

1.9 Conceptual framework

The independent variables are sociodemographic factors, psychosocial factors, cultural factors and health system factors. The dependent variable is the delay in seeking care.

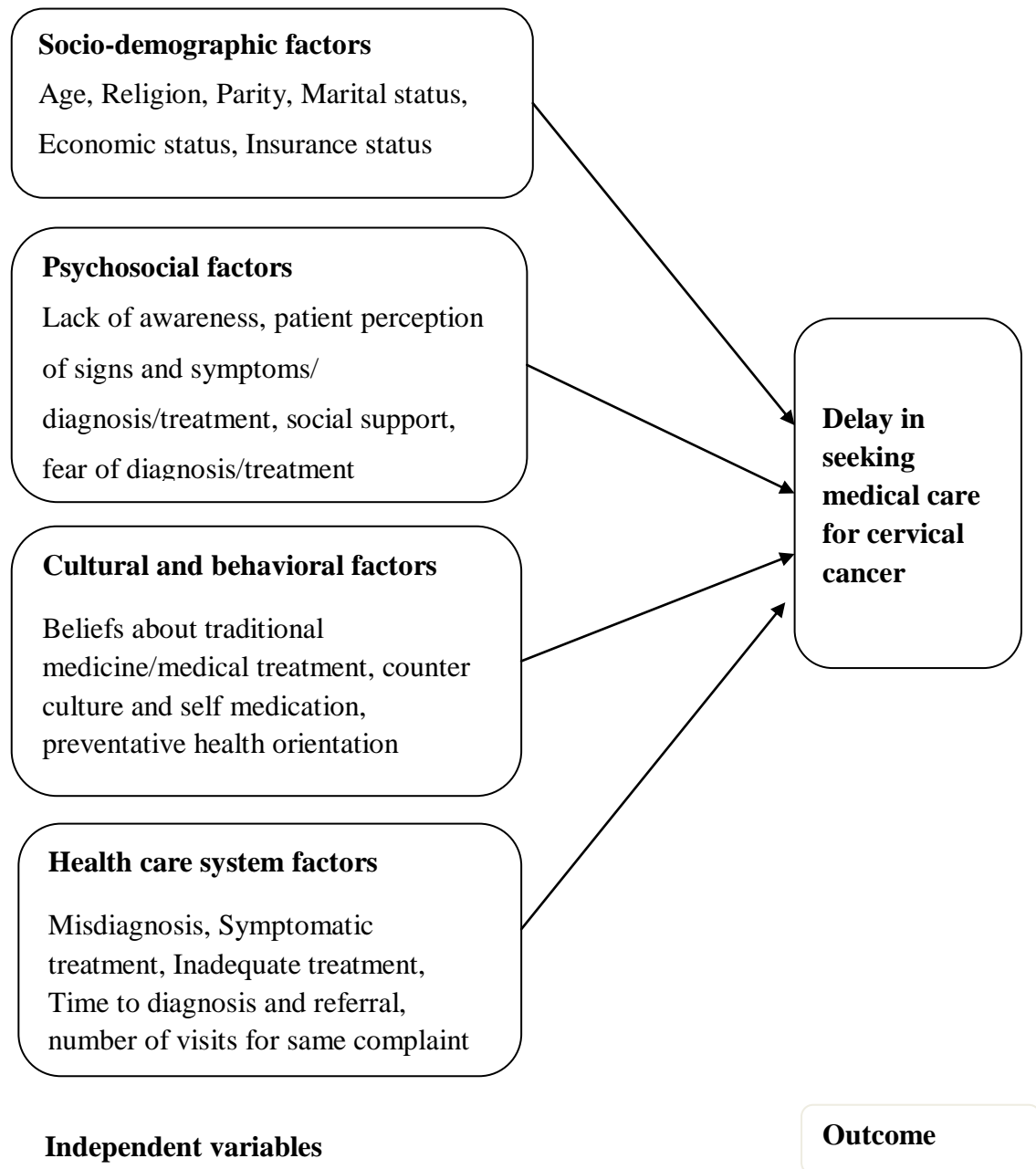


Fig 1.2: Conceptual framework of help seeking in cervical cancer patients.

(Source: Modified from Dwivedi, 2012)

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter describes the general perspective, risk factors and symptoms of cervical cancer, local trend, socio-demographic factors, psychosocial and cultural factors, health system characteristics and challenges of cervical cancer control in Africa.

2.2 General perspective

Cervical cancer is a malignant neoplasm of cells that originate from the squamocolumnar junction between the endocervix and ectocervix. The cervix is the lower part of the uterus which connects it to the vagina or birth canal. Most cervical cancers are squamous cell carcinomas (Denny *et al.*, 2006). Cervical cancer was discovered as early as 1713 by Bernadino Ramazzini, an Italian doctor (Khunmun, 2006). In 1928, Dr. George Papanicolou discovered that cervical cancer followed a predictable sequence, evolving over a number of years from precancerous lesions to overt cancer, which could be detected under a microscope. The introduction of pap smear in the 1940s in developed countries contributed to a significant decline in cases of cervical cancer as efficient awareness and effective screening programs were established (Randall and Ghebre, 2016).

There are striking geographical disparities in cervical cancer incidence and mortality. Incidence is lowest in Western Asia (4.4/100,000), Australia and New Zealand (5.5/100,000) as compared to an incidence of 29 to 42.7/100,000 in Africa (Ferlay *et al.*, 2012). Almost nine out of ten (87%) cervical cancer deaths occur in the less developed regions and fewer than 5% are screened for cervical cancer. In Kenya, it is the most frequent cancer among women and every year, 4802 women are diagnosed while 2451

die of cervical cancer in Kenya (Bashir *et al.*, 2012). Nyanza province has a HIV prevalence of 14.9% as compared to a national prevalence of 7.1% (Bashir *et al.*, 2012). HIV positive women are more likely to develop precancerous lesions which can eventually develop into invasive cervical cancer, an AIDS-defining illness. Patients who are diagnosed via symptomatic presentation tend to have more advanced disease than those diagnosed via screening (Lim *et al.*, 2014). Studies have shown that women with delayed presentation often have larger tumors and poorer prognosis (Heissey, 2011). The proportion of women who delay seeking medical care in developing countries has been found to be as high as 67% in Peru and 42% in Iran (Pineros, 2009).

2.3 Local Situation

Kenya has a population of 12.92 million women aged 15 years and older (KNBS, 2015) who are at risk of developing cervical cancer. The WHO estimates the annual age-standardized cervical cancer incidence rate in Kenya is 28.7/100,000 (Ferlay *et al.*, 2012) which is four times the United States of America rate. The peak age for cervical cancer in Kenya is between thirty-five and forty-five years of age but the screening coverage for all women 18 to 69 years of age in Kenya is low at 3.2% (Bashir *et al.*, 2012) and is usually passive, largely dependent on a clinical encounter while attending to other clinics or depending on a woman's level of knowledge and perception. There are about 300 sites that provide screening services either by visual techniques or pap smear (Bashir *et al.*, 2012). Despite all these screening programs available and media involvement women have continued to present with advanced disease with poorer outcomes. A study done among patients in a tertiary hospital in Kenya also revealed that more than 90% of cases

of cervical cancer presented in the late stages of the disease for treatment largely due to lack of awareness (Gichangi *et al.*, 2003).

Cervical cancer is the most common cancer among women in Western region (Tenge *et al.*, 2009) and most of the patients present late. It had been hypothesized that considering the two hospitals are closer to the rural population, delays would not have been as significant.

2.4 Risk factors and symptoms of cervical cancer

Infection with the sexually transmitted human papilloma virus (HPV) is the most important risk factor and is considered a necessary but not sufficient cause of cervical cancer (Fonseca-Moutinho, 2011). This forms the basis for the introduction of the HPV testing and vaccination. Further variation is caused by differential prevalence levels of the infectious agent with SSA carrying the greater overall burden (Ogembo *et al.*, 2015). About 15% of women in the general population in Kenya are estimated to harbor cervical HPV type 16 or 18 infections at a given time and 61% of invasive cervical cancers are attributed to HPV type 16 or 18 (Ogembo *et al.*, 2015). Other risk factors for cervical cancer include multiple sexual partners, HIV co-infection, having other sexually transmitted infections, cigarette smoking, having multiple sexual partners, early age at first sexual intercourse, multiparity and genetic factors (Fonseca-Moutinho, 2011). The use of combined oral contraceptives for a long time increases the incidence of cervical cancer due to oestrogen which stimulates metaplasia (Shahid, 2010). When women develop cervical cancer they present with various symptoms, the common ones being per vaginal discharge, lower abdominal pains, backache and post coital bleeding in that order (Chadza *et al.*, 2012). Other symptoms include postmenopausal bleeding and pain during

sexual contact. Treatment for cervical cancer largely depends on the stage of the disease and will usually involve surgery, radiotherapy and chemotherapy.

2.5 Socio-demographic factors

A patient's decision to delay is influenced by personal, social and economic factors. In a study in India, it was found that contacting non-medical person prior to medical person, lack of awareness and economical and family problems were associated with patient delay in presentation (Dwivedi, 2012). Socio-economic factors and insurance coverage influence diagnostic and therapeutic delays (Randall and Ghebre, 2016). Lower socioeconomic status has been found to negatively impact access to healthcare and is associated with poorer outcomes (Kimlin, 2010). Other barriers include; long distance to the facility and means of transportation to reach the health facility (Chadza *et al.*, 2012). A study in Ethiopia established that stigma against the disease played a significant role in delaying health seeking for the disease from the modern medical institutions. This led to patients keeping their disease secret, naming their illness as gastritis, kidney problem among other stomach related disorders (Birhanu *et al.*, 2012). In a study on breast cancer at Kenyatta National Hospital (KNH), age and level of education were predictors of late stage presentation for breast cancer (Otieno *et al.*, 2010). A study done at JOOTRH found that apart from age and level of education, income levels also determined uptake of screening for cervical cancer (Morema *et al.*, 2014).

At the time of the study, no current literature existed in Western Kenya looking at socio-demographic factors associated with delay in seeking medical care for invasive cervical cancer. Most literature in Western Kenya was concentrating on uptake of screening for cervical cancer.

2.6 Psychosocial Factors

The Health Belief Model (HBM) theory (Rosenstock, 1974) forms the basic theoretical framework for this study. The HBM states that the perception of a personal health behavior threat is itself influenced by at least three factors: general health values, which include interest and concern about health; specific health beliefs about vulnerability to a particular health threat; and beliefs about the consequences of the health problem. A person's individual perception regarding a condition as well as available enabling or modifying factors will lead to the likelihood of taking a desirable health action. The action depends on the degree of perceived threat/ fear of cervical cancer. Perceived susceptibility is the patient's feeling that a health problem is personally relevant. In this case, the fact that cervical cancer is possible by virtue of experiencing certain related symptoms and the patient being a woman. Perceived severity is the patient's assessment of the gravity of perceived symptoms. It is the opinion that the symptoms may relate to a serious disease such as cervical cancer. The patient's fear of severity of the disease will also impact her health seeking behavior. A perceived belief that there is treatment available to cure the cervical cancer will motivate the patient to seek that particular treatment (Jones *et al*, 2015).

In some diseases, for example, it has been shown that delayed consultation may be related to the patients becoming aware of their symptoms, how they assess these symptoms, their emotional impact and the coping strategies implemented to deal with them (Christophe, 2014). The participant's social and family environment and the social support received also appear to be decisive factors. A study in Western Kenya found that women may not seek cervical cancer screening services or make follow-up visits due to

lack of support from their husbands (Ngugi *et al.*, 2010). How the patient perceives and interprets a symptom, emotional regulation and coping towards that particular symptom, to the perception of a reason to consult a doctor and finally the decision to consult him/her varies a great deal depending on their social environment. Therefore symptom interpretation is a cognitive process and an integral factor in initiating actions. A negative symptom appraisal is a factor for delayed presentation (Otieno *et al.*, 2010). Psychosocial factors such as anxiety and fear of death, strained family relationships, body image and sexuality and fear of stigma and avoidance as some of the challenges faced by patients living with cervical cancer in Kenya and some patients kept their diagnosis a secret because they were ashamed (Ngutu and Nyamongo, 2015). To the best of my knowledge, there is a gap in literature on psychosocial barriers contributing to delay in seeking medical care among women with cervical cancer in Western Kenya as very few of such studies were found.

2.7 Cultural Factors

Cultural and religious practices influence health behavior. The provision of culturally competent care is further hindered by lack of provider training on cultural dimensions such as spiritual practices (Kimlin, 2010). Some women visit traditional healers because they believe in traditional medicine which may not efficiently cure cervical cancer (Chadza *et al.*, 2012). These patients prefer traditional medicine to modern medicine believing that it gives immediate symptomatic pain relief even though some participants thought that it is not curative (Birhanu *et al.*, 2012). Such cultures lead to late access to cervical cancer screening services for diagnosis and treatment leading to late diagnosis when the disease has reached incurable stages. Some of the cultural factors identified as

causing delays in diagnosis included belief that cervical cancer was associated with: promiscuity, a violation of normal sexual behaviors in the form of frequent sexual intercourse, multiple sexual partners, early sexual intercourse, the devil's intervention, failure to carry out proper rituals, evil spirits, exposure to the sun's rays, urinating on dirty areas when it was sunny, poor personal hygiene, abortion, and/or a mismatch in the size of genital organs of opposite sexes. For example, In Addis Ababa, many women rely on home based traditional treatment as they do not like to disclose the disease to the community owing to its perceived association the diseases with frequent sexual intercourse and multiple sexual partners (Birhanu *et al.*, 2012). Health behaviors such as self-medication, preventative health orientation and beliefs about medical treatment are mostly influenced by cultural and societal values. In Kenya, a study on breast cancer showed that the belief that the disease was incurable led to delay in seeking medical care as other culturally acceptable options were explored in tandem with the cultural definition of the disease (Muchiri, 2006 ; Ngugi *et al.*,2012). Another study found that fear, stigma and preference for traditional healers contributed to delay in presentation for breast cancer patients (Otieno *et al*, 2010). At the time of the study, there was no literature looking specifically at cultural values contributing to delay in seeking medical care among women with cervical cancer in this setting.

2.8 Healthcare system characteristics

Health care services in developing countries are poorly developed and tend to focus on curative rather than preventive health care. Most cancers are symptomatic but most cancer symptoms are the same as the symptoms of many other, more common, non-malignant conditions which mostly do not indicate serious disease. Indeed in a study in

Malawi, patients with cervical cancer were given prescriptions severally and many made numerous visits to several health facilities before they were finally diagnosed of cervical cancer (Chadza *et al.*, 2012). The health care process is complex and multidimensional and is influenced by interactions among several systemic factors. One of the barriers to health service is limited accessibility to health care centers. In an Indian study, the number of made contacts, previous inadequate treatment by medical personnel and doctor assurance were significant factors for diagnostic and therapeutic delay (Dwivedi, 2012). In a study on breast cancer patients at KNH, 24.1% of the patients also cited physician reassurance as their reason for delay in seeking medical care (Otieno *et al.*, 2010). At the time of the study, there was no local study in this setting that specifically looked at health care system factors that contribute to delay in presentation among women with invasive cervical cancer.

2.9 Challenges of Cervical Cancer Control in Africa

While pap smear programs have been successful in developed countries, these screening programs are not feasible in many African countries as they require expensive equipment, highly trained personnel, regular quality assurance in the laboratory and several visits by the patient. This has led to advocacy for use of low-cost visual inspection methods such as visual inspection with acetic acid (VIA) and visual inspection with Lugol's iodine (VILI) which do not require highly trained personnel yet enable screening and treatment within a single visit. In addition, treatment methods like cryotherapy mostly used for early lesions during VIA/VILI do not require much expertise. The evidence supporting visual inspection techniques is increasing. VIA was associated with a 35% reduction in

cervical cancer mortality in one study that was conducted in low-resource settings (Adewole, 2013).

More recently, HPV vaccination has been advocated for girls from nine years of age before sexual debut to prevent HPV infection thereby reducing incidence of cervical cancer. In America, HPV vaccination has reduced HPV infection rates among girls and women by 56% despite low coverage (Markowitz , 2013). In 2006, HPV vaccination was introduced in Kenyan private hospitals targeting young girls between 9-13 years of age before first coitus. HPV vaccine is arguably the most expensive vaccine at about £17 per dose for each of the three doses required and therefore is out of reach for most public hospitals in African countries.

The increase in cancer burden in Africa is partly due to the aging and growth of the population as well as the rising prevalence of risk factors associated with economic transition, including smoking, obesity, physical inactivity, and reproductive behaviors (Munyaradzi, 2014). Due to inadequate resources and other pressing public health concerns such as HIV/AIDS, malaria, and TB (Munyaradzi, 2014), the cancer burden in Africa still continues to receive relatively low public health priority. Most developing countries lack clear health education programs on cancer awareness, and the absence of screening facilities in these resource-poor settings contributes to late presentation of cancer cases (Munyaradzi, 2014).

CHAPTER THREE: METHODS AND MATERIALS

3.1 Research design

A cross-sectional study of patients with invasive cervical cancer was carried out between May 2016 and August 2016. This enabled determination of the factors that contribute to delay in seeking medical care at one point in time from a patient's perspective.

3.2 Variables

The independent variables were socio-demographic, economic, psychosocial, cultural factors and healthcare system factors such as misdiagnosis, poor access, symptomatic treatment and poor referral systems. The dependent variable was the delay in seeking medical care among women with cervical cancer.

3.3 Location of the study

The study was conducted in Western region of Kenya about 400km from Nairobi at Jaramogi Oginga Odinga Teaching and Referral hospital (JOOTRH) in Kisumu County and Kakamega County Referral Hospital (KCRH) in Kakamega County (Appendix I). The two were chosen as the major referral hospitals in Nyanza and Western provinces respectively. The similar distance from Nairobi City (where the only fully equipped public cancer treatment centre is located) and a relatively higher prevalence of HIV/AIDS in Nyanza which is associated with higher incidence of cervical cancer also influenced the selection. JOOTRH and KCRH both have gynecological units which conduct screening and diagnosis of cervical cancer and perform surgery on stage 1 cancer. Patients with advanced disease are either referred to Kenyatta National Hospital (KNH) for chemoradiation or sent to the JOOTRH palliative care unit for palliative care and pain management.

3.4 Study Population

The study population involved all patients with cervical cancer either accessing care at outpatient clinics or admitted in the gynecological wards at the two hospitals. According to the records at the two hospitals, the annual population of invasive cervical cancer patients is about 952 as shown in the Table 3.1 below.

Table 3.1: Population of the Study

Hospital	Outpatient	Inpatient	Total
Jaramogi Oginga Odinga Teaching and Referral hospital	489	106	595
Kakamega County Referral Hospital	275	82	357
Totals	764	188	952

Source: (Hospital records, 2014)

This comprised of cervical cancer patients/survivors diagnosed in the last five years either attending outpatient clinics or admitted in the gynecological wards.

3.4.1 Inclusion criteria

The inclusion criteria was women who gave consent, were aged 18 years and above and were within 1-5 years of a diagnosis of cervical cancer.

3.4.2 Exclusion criteria

The study excluded any patients experiencing any other cancers, psychotic patients, very ill patients and any women who were unwilling to participate.

3.5 Sampling Techniques

Western Kenya was purposively selected for the study due to the relatively higher incidence of HIV/AIDS which would translate to higher incidence of cervical cancer, a stage four AIDS defining illness. JOOTRH and KCRH were purposively selected for the study as the major referral hospitals within the region. Proportionate sampling method was used whereby selected hospital units (the outpatients and inpatients) were used to get number of participants per facility.

Systematic random sampling was then used to select patients within the outpatient and inpatient groups; amongst the outpatients, every 2nd patient on the queue who gave consent to participate in the study and met the inclusion criteria was picked for interview while for inpatients, every 2nd patient on the second bed from the starting point (the bed nearest to the entrance) who was willing to participate in the study, gave consent and met the inclusion criteria, took part in filling the interviewer administered questionnaire.

3.6 Sample Size Determination

The sample size was determined using the Epi Info 7 StatCalc computer program for calculating sample size for population proportions. Using a confidence level of 95%, expected frequency of 50% and confidence limit of 5%, the sample size was 274 patients. These were sampled proportionately among patients with cervical cancer either attending outpatient clinics or admitted in the gynecological wards. The sample size was distributed as shown in the Table 3.2 below:

Table 3. 2: Sample Size

Hospital	Outpatient	Sample size	Inpatient	Sample size	Total sample size
Jaramogi Oginga Odinga Teaching and Referral hospital	489	141	106	31	172
Kakamega County Referral Hospital	275	78	82	24	102
Totals	764	219	188	55	274

3.7 Construction of Research Instruments

The research was carried out using an interview-administered questionnaire constructed to exclude patient identifier but include socio-demographic data, disease history, health seeking experiences and clinical data. The questionnaire included both open-ended and close-ended questions both in English (Appendix II) and a Kiswahili translation (Appendix III) where necessary. In comparison with self-administered questionnaire, the interview-based approach has more advantages as it allows the interviewer to check and clarify sequence of events and to probe for information that patients might not consider relevant (Lim *et al.*, 2014).

3.8 Pre-Test study

Pretesting of the tool was carried out by interviewing the first twenty cervical cancer patients attending the clinic at Kakamega County Referral Hospital (10 patients) and Jaramogi Oginga Odinga Teaching and Referral Hospital (10 patients). These patients

were not involved in the study. The tool was refined and incorporated the challenges and issues observed during pretesting.

3.9 Validity

The results of the pretest study were used to improve validity of the questionnaire (collection of the information we needed). A review of the questionnaire was conducted to clarify the questions for ease of understanding and interpretation. The assistance of supervisors and experts in this field was sought while constructing the questionnaire. An extensive literature review was done to compare the results of the study with previous studies.

3.10 Reliability

The extent to which results of the assessment tool are consistent over time and are an accurate representation of the total population was assessed by the retest method. Adjustments were done to the interview schedule after the pretest. The research assistants were trained on how to use the tool and monitored weekly to improve reliability. No respondents were coerced to be involved in the study.

3.11 Data collection techniques

Patients with cervical cancer either attending outpatient gynecological clinics or admitted in the gynecological wards were identified from the registration desk at the clinic /ward. Then all available patients meeting the inclusion criteria were invited to participate in the study. Every second patient who met the inclusion criteria and gave a verbal and written informed consent in their preferred language (Appendices IV, V) was recruited systematically until the desired sample size was achieved. Recruitment was done by

research assistants trained on good clinical practice and conduct of the research. Face to face interview was then conducted by the research assistant using a pretested structured questionnaire. Upon conclusion, the participant was thanked for her participation. Medical records were then reviewed for supplementary information regarding clinical data, dates and stage at diagnosis. In the event that a participant declined to participate or was too distressed to continue, the interview was halted. Psychological counseling and emotional support was provided for the distressed client. Thereafter, the next accessible, eligible and willing participant was recruited. The appropriately filled questionnaires and consent forms were collected and arranged in a box file. The file was placed safely in a cabinet under lock and key for future analysis.

3.12 Data Analysis

Once the appropriately filled questionnaires were availed and analyzed for completeness, the data in hard copy were entered in Microsoft Excel, reviewed for consistency and completeness and analyzed with the use of statistical package for social sciences (SPSS) version 21. Frequencies were presented as absolute values and percentages. Associations between categorical variables and patient delay were assessed using contingency tables and Chi-square tests. Strength of association was measured using 95% confidence intervals. The categorical data was summarized as graphs, frequency charts and tables then association done by Chi-square. To facilitate analysis, some of the variables investigated were dichotomized into two: e.g below 50 years or above 50 years for age. Binary logistic regression was carried out to find the significant predictor for delay in seeking medical care. For all tests, $p \leq 0.05$ (5% level of significance) was considered to be statistically significant.

3.13 Logistical and Ethical considerations

Upon approval by the Graduate School, ethical clearance was sought from Kenyatta University Ethics and Review Committee (KU-ERC) Ref No. KU/R/COMM/51/716 (Appendix VI) who reviewed the proposal and approved all study procedures. Permit to conduct the study was thereafter sought from the National Council of Science, Technology and Innovation (NACOSTI) Ref No. NACOSTI/P/16/83102/8815 (Appendix VII). Administrative authority to conduct the study was sought from the respective hospitals. All study personnel were trained in ethical issues related to study participants. Study participants were informed about the study objectives and procedures for data collection, and their right to refuse to participate, to decline to answer any questions, and to withdraw from the study at any time. A written consent was obtained from all study participants (Appendices IV, V). All interviews were carried out by trained local study personnel who were fluent in the local languages spoken. The participants were assured of confidentiality and anonymity as there were no identifiers on the administered questionnaires (Appendices II, III). The computer used was password protected to protect the privacy of the participants. Any adverse findings were reported to those responsible for their care and to the Ethics and Review Committee. Medical advice was provided whenever necessary.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the findings of the study in line with the research questions and objectives. The results are discussed under the following subtopics: socio demographic, psychosocial, cultural and health system characteristics of the study population. SPSS was used to generate the descriptive statistics and to establish the relation between the dependent and the independent variables of the study.

4.1.1 Flowchart of enrollment, exclusion and analysis

Out of 274 questionnaires given out to respondents, 268 questionnaires were dully filled. 6 questionnaires were excluded due to incompleteness as shown in Figure 4.1.

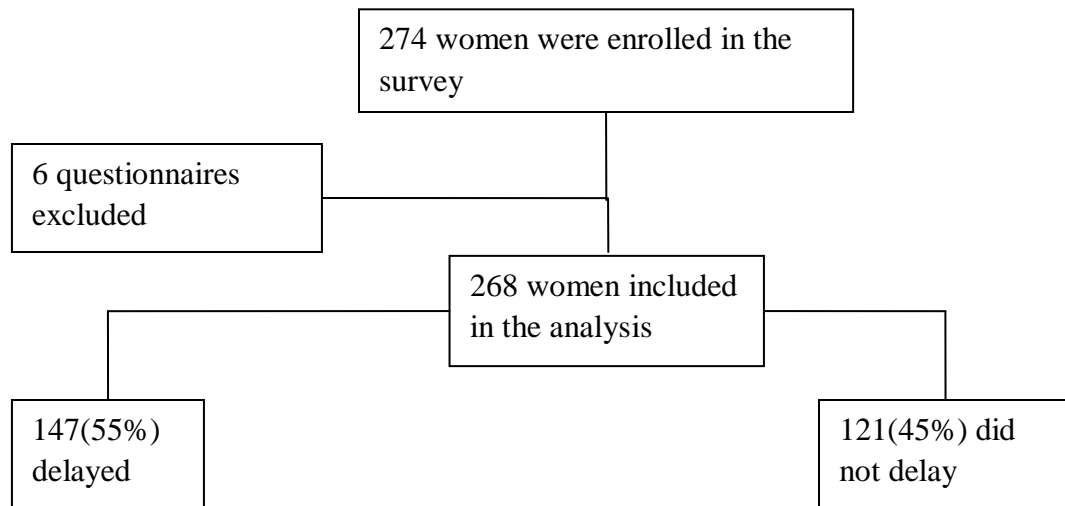


Figure 4.1: Flowchart of enrollment, exclusion and analysis

Of the 268 women included in the analysis, 55% (n=147) delayed in seeking medical care while 45% (n=121) did not delay in seeking medical care and sought care within three months of onset of signs and symptoms.

4.2 Socio Demographic Characteristics Contributing to Delay in Seeking Care

Majority of the respondents 56% (n=150) were aged 50 years and below. About 37.3% (n=100) had 3-4 children while 11.2% (n=30) of the respondents had no child. Up to 62.3% (n=167) of the respondents had used contraceptives and only 37.7% (n=101) of the respondents had never used contraceptives.

Majority of the respondents 97% (n=260) were Christians and most of the 268 respondents, 65.7% (n=176) were married. About 14.2% (n= 38) were single, 12.35% (n=33) were widowed, 5.6% (n=15) were separated and only 2.2% (n=6) were divorced.

The study established that majority 42.9% (n=115) of the respondents had primary school education while 30.6% (n=82) of them had secondary education. 21.3% (n=57) of them had no formal education and only 5.22% (n=14) of them had college/university education.

The results of the study indicate that most of the respondents 76.9% had no formal employment at the time of the interview. Majority of the respondents (73%) had no health insurance plans while only 18.7% of the respondents relied on government health insurance. The socio-demographic characteristics of the respondents are as presented in Table 4.1.

Table 4.1: Respondents Socio-Demographic Characteristics

Characteristics	Respondents N (%)
Age Category of Respondents in Years	
50 years and below	150 (56)
Above 50 years	118 (44)
Total	268 (100)
Average Number of Children	
0	30 (11.2)
1-2	80 (29.9)
3-4	100 (37.3)
Above 5	58 (21.6)
Total	268 (100)
Contraceptive Use	
Yes	167 (62.3)
No	101 (37.7)
Total	268 (100)
Religion	
Christian	260 (97)
Muslim	5 (1.9)
Other	3 (1.1)
Total	268 (100)
Marital Status	
Married	176 (65.7)
Divorced	6 (2.2)
Separated	15 (5.6)
Single	38 (14.2)
Widowed	33 (12.3)
Total	268 (100)
Education Level	
No formal schooling	57 (21.3)
Secondary School	82 (30.6)
Primary School	115 (42.9)
College/University	14 (5.2)
Total	268 (100)
Employment Status	
Yes	62 (23.1)
No	206 (76.9)
Total	268 (100)
Access to Health Insurance	
No Health Insurance	196 (73.1)
Health Insurance	72 (26.9)
Total	268 (100)

4.3 Psychosocial Factors Influencing Women's Ability to Seek Medical Care

The results of the study indicate that majority (80.2%) of the respondents shared the symptom with a close family member or a friend. A significant number of the respondents interviewed (30.6%) thought that their first symptoms were not serious on experiencing them. Again, regarding initial signs and symptoms, some cited fear (34%), embarrassment (16.8%), attribution to something else like stress or diet (12.7%) while 5.6% of them thought they had been bewitched.

The findings reveal that 51% (n=137) of the respondents did not immediately accept the doctors' diagnosis while 49% of the respondents immediately accepted the doctors' diagnosis. Out of the 137 respondents who did not accept their diagnosis, 77.9% of the respondents did not believe the diagnosis since they did not consider themselves at risk while 8.8% of the respondents thought there might be another alternative explanation. Another 8.1% (n=11) did not believe medical treatment could cure cancer while 2.9% (n=4) of the respondents had personal/ family reasons for not accepting the diagnosis and treatment.

The study findings revealed that at the time of the study, 66.8% of the respondents knew they had cervical cancer while 17.5% of the respondents did not know they had cervical cancer. For another 15.7% of the respondents, the research assistants could not say with certainty whether the respondents knew they had cervical cancer. The psychosocial findings of the respondents are as presented in Table 4.2.

Table 4.2: Respondents Psychosocial Characteristics

Characteristic	Respondents N (%)
Availability of social support network	
Yes	215 (80.2)
No	53 (19.8)
Total	268 (100)
Patient perception of initial signs and symptoms	
I thought it was not serious	82 (30.6)
I was afraid	91 (34)
Embarrassment	45 (16.8)
I thought it was because of something else-stress, diet, poor hygiene,etc	34 (12.7)
I thought i had been bewitched	15 (5.6)
Other	1 (0.4)
Total	268(100)
Acceptance of diagnosis	
Yes	131(49)
No	137(51)
Total	268(100)
Patient perception of diagnosis and treatment	
I did not believe the diagnosis since I don't consider myself at risk of cervical cancer	107(78)
I thought there might be other explanations(frequent sex, promiscuity, etc)	12 (8.8)
I don't believe cancer is curable even after treatment	11 (8.1)
I could not have treatment for partner/family reasons	4 (2.9)
I wanted another medical opinion	3 (2.2)
Total	268 (100)
Patient knowledge of cervical cancer diagnosis	
Yes	179 (66.8)
No	47 (17.5)
Cannot say with certainty	42 (15.7)
Total	268 (100)

4.4 Cultural Practices Influencing Delay in Seeking Medical care

The findings of the study indicate that majority of the respondents (50%) first consulted a nurse, 24% of the respondents first visited a doctor, 9.7% first consulted traditional healers while 16% first consulted a pharmacist. The findings revealed that up to 61% of the respondents had the habit of self- medicating. Of the respondents who are usually not

ready to see the doctor, 51.9% failed to access the doctor because it was too expensive, 18.7% felt the journey was too far and complicated, 6.7% felt embarrassed at male doctors examining their private parts, 6.3% were too busy to go to the doctor, 2.6% were already on other treatment and believed medical treatment would worsen their illness while 12.3% believed doctors would not understand them. At least 52.2% had a preventative health orientation of screening for cervical cancer. The cultural findings of the respondents are as presented in Table 4.3.

Table 4.3: Respondents Cultural and Behavioral Characteristics

Characteristic	Respondents N (%)
Beliefs about traditional medicine (First Professional Contacted)	
Traditional healer / Herbalist / Complementary therapist	26 (9.7)
Pharmacy/chemists	43 (16.1)
Nurse	134 (50)
Doctor	65 (24.2)
Total	268 (100)
Self-medication/Counter culture during illness	
Never	104 (39)
Once	49 (18.3)
Twice	46 (17.2)
3-4 times	51 (19)
5 times or more	17 (6.3)
Total	268(100)
Beliefs about medical treatment	
Too expensive	139 (51.9)
Too far-too complicated a journey	50 (18.7)
I am embarrassed at male doctors examining my private parts.	18 (6.7)
I am too busy to go to the doctor	17 (6.3)
Medical treatment would worsen my illness since I was already being treated.	7 (2.6)
I don't like to bother the doctor since they may not understand me	33 (12.3)
Other	4 (1.5)
Total	268 (100)
Preventative health orientation	
Had screening prior	140 (52.2)
Never had screening	128 (47.6)
Total	268 (100)

4.5 Health System Characteristics that Contribute to Delay in Seeking Care

The study revealed that up to 85.1% of the respondents took less than 4 hours for them to access a health facility while 14.9% took more than 4 hours to access a health facility.

Only 14% of the respondents had a biopsy done within a month. Majority (54%) took at least 1-3 months to have a biopsy done. According to the study findings, many (36%) of the respondents had the biopsy results three months after having had a biopsy done. The findings also indicate that many patients were treated for several other illnesses before a diagnosis of cervical cancer was finally made. Majority of the patients (54%) had consulted 3-5 doctors by the time a diagnosis of cervical cancer was made. The health system findings are as presented in Table 4.4.

Table 4.4: Health System Characteristics influencing delay in seeking care

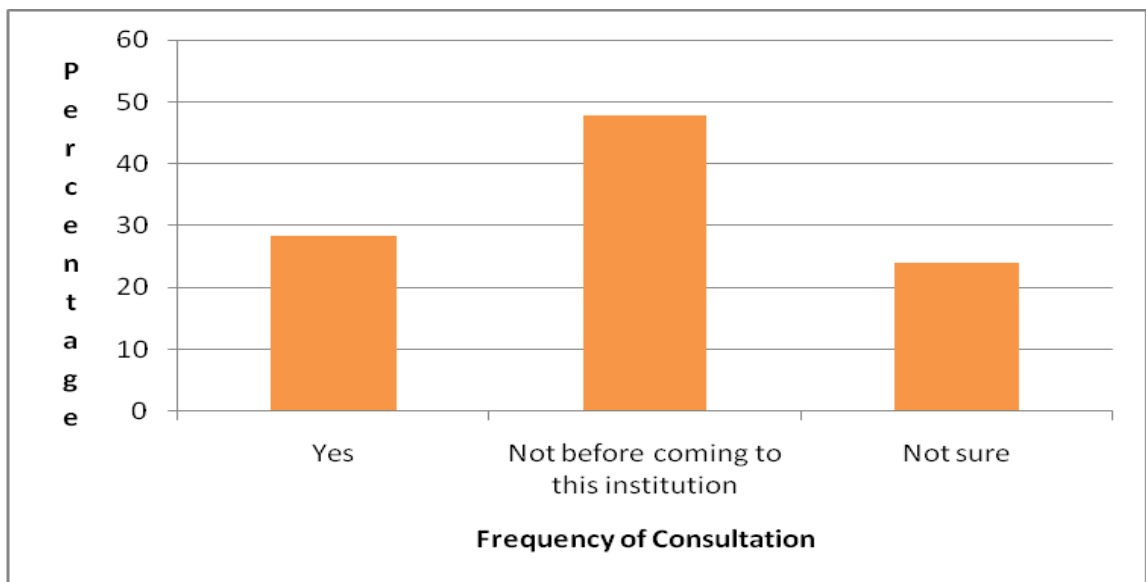
Characteristic	Respondents N (%)
Access to clinic	
≤ 4 hours	228 (85.1)
>4 hours	40 (14.9)
Total	268 (100)
Time taken to have a biopsy for diagnosis	
≤ 1 month	37 (14)
1-3 months	144 (54)
>3 months	87 (32)
Total	268 (100)
Time taken to getting diagnostic results	
≤ 1 month	80 (30)
1-3 months	90 (34)
>3 months	98 (36)
Total	268 (100)
Misdiagnoses	
Pelvic Inflammatory Disease	66 (25)
Back pain	103 (38)
Sexually transmitted Infection	63 (23)
Other Gynae Infections	36 (13)
Total	268 (100)
Number of doctors seen prior diagnosis was made	

1-2 doctors	35 (13)
3-5 doctors	145 (54)
>5 doctors	88 (33)
Total	268 (100)

4.5.1 Respondents Consultation with Obstetrician

The study sought to find out if the patients at any time had ever consulted an obstetrician. From Figure 4.2, only 29% of the patients who were interviewed had ever consulted an obstetrician before coming to those institutions.

Figure 4.2: Respondents Consultation with Obstetrician



4.5.3 Respondents Histological Type

The study sought to establish the histological types of cervical cancer and the findings are presented in Table 4.5. The findings indicate that 75.3% of the respondents had squamous cell carcinoma, 9.3% of the respondents had adenocarcinoma histological type and 1.9% of the respondents had other histological types.

Table 4.5: Respondents Histological Type

Respondents histological type	Frequency	Percentage %
Squamous cell carcinoma	202	75.3
Adenocarcinoma	25	9.3
Other,	5	1.9

UNK	36	13.4
Total	268	100

4.5.4 Respondents FIGO Stage at Diagnosis

From the findings of the study, 20.6% of the respondents had stage 4 disease at diagnosis.

The study revealed that 33.2% of the respondents had tumor stage 3, 26.1% had tumor stage 2 where tumor extends beyond uterus but not to pelvic wall or lower third of vagina and 20.1% of the respondents had stage 1 where the tumor is confined to the cervix.

Overall, up to 79.9% of the participants had advanced disease (stage 2 to 4) at the time of diagnosis

The findings on stage at diagnosis are presented in Table 4.6.

Table 4.6: Respondents FIGO Stage at Diagnosis

Respondents FIGO stage at diagnosis	Frequency	Percentage %
Stage 1 Tumor confined to the cervix	54	20.1
Stage 2 Tumor extends beyond uterus but not to pelvic wall or to lower third of vagina	70	26.1
Stage 3 Tumor involves pelvic side wall/lower third of vagina with or without hydronephrosis	89	33.2
Stage 4 Tumor extends beyond true pelvis/ has involved mucosa of the bladder and/or rectum or distant organs.	55	20.6
Total	268	100

4.6 Bivariate Analysis

Cross-tabulation was done to determine whether each of the predictor variables in this study influence the delay in seeking medical care among women with invasive cervical cancer which is the dependent variable. Pearson's Chi-square statistics was used to

determine the association. The predictor variables included socio-demographic factors, psychosocial, cultural and health system characteristics. A p-value less than 0.05 will be significant at 95 percent confidence interval.

4.6.1 Association between Demographic Characteristics and Delay in seeking medical care

The study sought to establish the association between demographic characteristics of respondents and the delay in seeking medical care among women with invasive cancer in Kenya. The findings are presented in Table 4.7.

The findings of the study revealed that statistically significant association exists between age and delay in seeking medical care ($p=0.009$), average number of children and delay in seeking medical care ($p=0.010$), education level and delay in seeking medical care ($p=0.042$), access to health insurance and delay in seeking medical care ($p=0.032$) and employment status and delay in seeking medical care ($p=0.042$).

The study established that there was no statistically significant association between contraceptive use and delay in seeking medical care ($p=0.06$), religion and delay in seeking medical care ($p=0.302$) and marital status and delay in seeking medical care ($p=0.178$).

Table 4.7: Association Between Socio-demographic Characteristics And Delay in Seeking Care

Characteristic	Categories	Delay in Seeking Medical Care		Chi square, P-value
		Those who delayed (n=147)	Those who did not delay(n=121)	
Age Distribution in Years	50 years and below	82(30.6)	68(25.4)	$\chi^2= 6.837$ df= 1 p= 0.009
	Above 50 years	66(24.6)	52(19.4)	
Average number of Children	0	12(4.5)	18(6.7)	$\chi^2= 11.454$ df= 3 p= 0.010
	1-2	29(10.8)	51(19)	
	3-4	57(21.3)	43(16)	
	Above 5	33(12.3)	25(9.3)	
Contraceptive Use	Yes	86(32)	81(30.2)	$\chi^2=0.996$ df=1 p=0.06
	No	61(22.8)	40(15)	
Religion	Christian	144(53.7)	116(43.3)	$\chi^2=0.289$ df=1 p=0.302
	Muslim	3(1.1)	5(1.9)	
Marital Status	Married	87(32.5)	89(33.2)	$\chi^2=1.929$ df=1 p=0.178
	Not currently married	60(22.4)	32 (11.9)	
Education Level	No formal schooling	35(23.8)	22(18.2)	$\chi^2=4.522$ df=3 p=0.042
	Secondary School	48(32.6)	34(28.1)	
	Primary School	60(41)	55(45.5)	
	College/University	4(2.7)	10(8.3)	
Access to Health Insurance	No Health Insurance	104(38.8)	92(34.3)	$\chi^2=0.445$ df=1 p=0.032
	Has Health Insurance	43(16)	29(10.8)	
Employment Status	Yes	28(19)	33(27)	$\chi^2=1.566$ df=1 p=0.044
	No	119(81)	88(73)	

4.6.2 Association between Psychosocial Factors and delay in Seeking Medical Care

The study further sought to determine the association between psychosocial factors and delay in seeking medical care. The results of the findings are presented in Table 4.8. From the bivariate analysis results, the study established statistically significant association between acceptance of the diagnosis ($p=0.041$), patient perception of initial signs and symptoms ($p=0.006$) and knowledge of cervical cancer diagnosis (p value= 0.04) and delay in seeking medical care among women with invasive cervical cancer in Western Kenya. However, there was no significant association between availability of social support ($p=0.063$) and perception of diagnosis and treatment ($p=0.676$) and delay in seeking medical care.

Table 4.8: Association Between Psychosocial Factors And Delay in Seeking Medical Care

Characteristic	Categories	Delay in Seeking Medical Care		Chi square, P value
		Those who delayed(n=147)	Those who did not Delay(n=121)	
Availability of Social Support Network	Yes	118(44.5)	97(36.6)	$\chi^2=2.857$ df=1 p=0.063
	No	20(7.5)	30(18.9)	
Patient perception of initial signs and symptoms	I thought it was not serious	45(16.8)	37(13.8)	$\chi^2=5.97$ df=4 p=0.006
	I was afraid	49(18.3)	42(15.7)	
	Embarrassment	25(9.3)	20(7.5)	
	I thought it was because of something else-stress, diet, poor hygiene,etc	19(7.1)	16(6)	
	I thought i had been bewitched	8(3)	7(2.6)	
Acceptance of Diagnosis	Yes	67(25)	64(24)	$\chi^2=4.163$ df=1 p=0.041
	No	72(26.8)	65(24.2)	
Patient perception of diagnosis and treatment	I did not believe the diagnosis as I don't think am at risk of cervical cancer	56(40.9)	51(37.3)	$\chi^2=2.328$ df=4 p=0.676
	I thought there might be other explanations	5(3.6)	7(5.1)	
	I don't believe cancer is curable even after treatment	7(5.1)	4(2.9)	
	I couldn't be treated for partner/family reasons	4(2.9)	0(0)	
	I wanted another medical opinion	1(0.7)	2(1.4)	
Patient knowledge of cervical cancer diagnosis	Yes	83(31)	96(35.8)	$\chi^2=6.428$ df=2 p=0.04
	No	25(9.3)	22(8.2)	
	Cannot say with certainty	31(11.6)	11(4.1)	

4.6.3 Association between Cultural Factors and Delay in Seeking Medical Care.

The study further sought to determine the cultural factors influencing delay in seeking medical care among invasive cervical cancer patients at JOOTRH and KCRH.

From the results of the bivariate analysis, the study established statistical association between first professional consulted and delay in seeking medical care for p values $0.0001 \leq 0.05$ at 95% confidence interval. The study further established statistically significant association between use of over-the counter medication and delay in seeking medical care ($p=0.013$), lack of readiness to see the doctor by the patients and delay in seeking medical care ($p=0.048$) and low uptake of cervical cancer screening and delay in seeking medical care for the p values $0.025 \leq 0.05$ at 95% confidence interval.

The study however established that there was no statistically significant association between the opinions and beliefs about medical treatment held by patients and delay in seeking medical care as supported by the p value of $0.075 > 0.05$ at 95% confidence interval. Results of the findings are presented in Table 4.9.

Table 4.9: Association of Cultural Practices on delay in Seeking Medical Care

Characteristic	Categories	Frequencies		Chi square, P value
		Those who delayed (n=147)	Those who did not delay (n=121)	
Beliefs about traditional medicine (First Professional Contacted)	Traditional healer / Herbalist	23(8.6)	3(1.1)	$\chi^2=18.958$ df=3 p=0.0001
	Pharmacy/chemists	24(9.0)	19(7.1)	
	Nurse	68(25.4)	66(24.6)	
	Doctor	32(11.9)	33(12.3)	
Self-medication/counter-culture	Never	55(20.6)	49(18.5)	$\chi^2=12.629$ df=4 p=0.013
	Once	20(7.5)	29(10.8)	
	Twice	21(7.9)	25(9.3)	
	3-4 times	37(13.9)	14(5.2)	
	5 times or more	14(5.2)	3(1.1)	
Beliefs about medical treatment	Too expensive	76(28.4)	63(23.5)	$\chi^2=11.479$ df=6 p=0.075
	Too complicated a journey	21(7.8)	29(10.8)	
	I don't trust male doctors examining my private parts	7(2.6)	11(4.1)	
	Too busy to go to the doctor	13(4.9)	4(1.5)	
	Medical treatment would worsen my illness	6(2.2)	1(0.4)	
	I don't like to bother the doctor since they don't understand me	22(8.2)	11(4.1)	
	Other	2(0.7)	2(0.7)	
Preventative health orientation	Had screening prior	72(26.6)	69(25.8)	$\chi^2=5.001$ df=1 p =0.025
	Never been screened	75(28.2)	52(19.4)	

4.6.4 Association between Health System Characteristics and Delay in Seeking Medical Care

The study sought to determine health system characteristics that contribute to delay in diagnosis among women with invasive cervical cancer in this setting. The findings are presented in Table 4.10.

From the findings of the bivariate analysis, there was no statistically significant association between the length of the journey to the clinic and delay in seeking medical care for the p values $0.08 > 0.05$ at 95% level of significance. The study found out that there was no statistically significant association between times taken to have a biopsy for diagnosis (p value of 0.22), time taken to getting diagnostic results ($p=0.113$) and misdiagnoses ($p=0.279$) and delay in seeking medical care.

Table 4.10: Influence of Health System Characteristics on Delay in Seeking Medical Care

Characteristic	Categories	Delay in Seeking health care		Chi-Square p-values
		Those who delayed(n=147)	Those who did not delay(n=121)	
Accessibility to the Clinic	Less than 4 hours	121(45.1)	107(39.9)	$\chi^2=3.069$ df=1 p =0.080
	More than 4 hours	26(17.7)	14(5.2)	
Time taken to have a biopsy for diagnosis	≤ 1 month	14(5.2)	23(8.6)	$\chi^2=7.613$ df=2 p =0.22
	1-3 months	73(27.2)	71(26.5)	
	>3 months	46(17.2)	41(15.3)	
Time taken to getting diagnostic results	≤ 1 month	42(15.7)	38(14.2)	$\chi^2=4.353$ df=2 p =0.113
	1-3 months	43(16.04)	47(17.5)	
	>3 months	52(19.4)	46(17.16)	
Misdiagnoses	Pelvic Inflammatory Disease	35(13)	31(11.6)	$\chi^2=6.289$ df=3 p =0.279
	Back pain	48(18)	55(20.5)	
	Sexually transmitted Infection	33(12.3)	30(11.2)	
	Other Gynae Infections	19(7.1)	17(6.3)	

4.7 Binary Logistic Regression Analysis

A logistic regression was performed to ascertain the factors that contribute to delay in seeking medical care among invasive cervical cancer patients in Western Kenya. The model summary is indicated in subsequent Table 4.11.

Table 4.11: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	118.899 ^a	.326	.437

From the findings in Table 4.11, the explained variation R^2 in the delay based on the model ranges from 32.6% to 43.7% depending on whether the reference is on Cox & Snell R^2 Square or Nagelkerke R^2 Square methods.

From the findings of the binary logistic regression analysis in Table 4.12, availability of social support ($p=0.003$), patient knowledge of cervical cancer diagnosis ($p=0.016$) and belief about traditional medicine ($p=0.009$) all significantly added to the model and therefore the prediction since the p values are all less than 0.05.

However, age ($p= 0.323$), average number of children ($p=0.624$), use of contraceptive ($p=0.453$), religion ($p=1.000$), marital status ($p=0.395$), education level ($p=0.104$), employment status ($p=0.256$), access to health insurance ($p=0.128$), patient perception of initial sign and symptom ($p=0.155$), acceptance of diagnosis ($p=0.062$), patient perception of diagnosis and treatment ($p=0.655$), use of over- the- counter medications during illness ($p=0.1328$), health seeking behavior ($p=0.732$), beliefs about medical treatment ($p=0.232$), preventive health orientation($p=0.898$) and access to clinic ($p=0.131$) all did not add significantly to the model as their p -values are more than the threshold of 0.05.

Therefore the regression equation becomes

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \varepsilon$$

$$Y = 26.99 + 1.786X_1 - 0.974X_2 + 1.010X_3 + \varepsilon$$

Where X_1 , X_2 and X_3 represents social support network, patient knowledge of cervical cancer and beliefs about traditional medicine.

Therefore, according to the binary logistic regression results, availability of social support network, patient knowledge of cervical cancer and beliefs about traditional medicine were the most significant predictors of delay in seeking medical care in this setting.

Table 4.12 Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Age	1.322	1.337	.977	1	.323	3.750
Average Number of Children	-.221	.450	.241	1	.624	.802
Contraceptive Use	-.379	.506	.562	1	.453	.685
Religion	-21.302	40192.935	.000	1	1.000	.000
Marital Status	.164	.193	.722	1	.395	1.178
Education Level	.500	.307	2.646	1	.104	1.648
Employment Status	-.830	.731	1.290	1	.256	.436
Access to health Insurance	-.616	.405	2.318	1	.128	.540
Social Support Net work	1.786	.612	8.533	1	.003	5.968
Patient perception of initial signs and symptoms	-.381	.268	2.022	1	.155	.683
Acceptance of diagnosis	-2.239	1.200	3.482	1	.062	.107
Patient perception of diagnosis and treatment	-.101	.225	.199	1	.655	.904
Patient knowledge of cervical cancer diagnosis	-.974	.403	5.849	1	.016	.377
Beliefs about traditional medicine	1.010	.384	6.917	1	.009	2.745
Self-medication/Counter culture	.206	.211	.958	1	.328	1.229
Health seeking behavior	-.190	.554	.117	1	.732	.827
Beliefs about medical treatment	-.164	.137	1.431	1	.232	.849
Preventative health orientation	-.073	.564	.017	1	.898	.930
Access to clinic	-1.046	.693	2.278	1	.131	.351
Constant	26.990	40192.935	.000	1	.999	526963528068.974

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

This chapter provides the summary of the findings, discussion, conclusions and recommendations of the study based on the research questions and objectives of the study. The purpose of this study was to establish the determinants of delay in seeking medical care among women.

5.1.1 Social-demographic Factors and Delay in seeking Medical care

The study established that up to 55% of the cervical cancer patients in the two hospitals had delayed in seeking medical care and 80% had advanced disease by the time of the diagnosis. This compares with Otieno *et al.*, (2010) who found that up to 69.3% of breast cancer patients presented late. In this study, it was also established that more than half of the patients were less than 50 years of age and from bivariate analysis, younger age was a significant factor in delay in seeking treatment. This also concurs with a previous study by Otieno *et al.*, (2010) who also found that younger patients tend to present late with cancer as compared to older patients. The study found that more than two thirds of the patients had ever used contraceptives and most women had 3-4 children. These findings are comparable with the Kenya Demographic Health Survey, 2014 findings which show that the contraceptive prevalence rate in the area is about 67% and most women have an average of 3.9 children in Kenya. Majority of the patients had primary school education. About one fifth of the women had no formal education which was higher than the national figure at 7% (KNBS, 2015). In this study, education level was a significant factor in delay in seeking medical care. This concurs with previous studies (Morema *et*

al.,2014) which found education level to be a significant factor in accessing medical care. The findings on the employment status indicate that majority of the patients were not employed at the time of the interview which significantly affected their delay in seeking medical care. The finding agrees with Coleman (2014) who held that lower socioeconomic status negatively impacted access to healthcare and is associated with poorer outcomes. The study further established that majority of the patients had no access to health insurance. The finding concurs with Kimlin (2010) and Coleman (2014) who opined that socio-economic factors and insurance coverage influence diagnostic and therapeutic delays. Health insurance is known to affect the stage at diagnosis, treatment uptake and survival outcomes and without it, timely access to medical care is limited (Coleman, 2014).

This implies further that financial constraints of the patients contributed to delay in seeking medical care as patients were not able to access the treatment in the first place.

5.1.2 Psychosocial Factors and Delay in Seeking Medical Care

On the first symptom the patients experienced, the study findings established that 42.9% experienced abnormal vaginal bleeding, 32.5% of the respondents indicated experiencing lower abdominal pain, 14.2% of the respondents experienced abnormal vaginal discharge, 10.1% of the respondents experienced back pain and only 0.4% of the respondents experienced dizziness. These findings are consistent with Chadza *et al.*, (2012) who opined that when women develop cervical cancer they present with various symptoms, the common ones being vaginal discharge, lower abdominal pains, backache and post coital bleeding in that order.

The beliefs and perceptions held by the patients on experiencing the first signs and symptoms indicated that majority of the respondents thought it was not serious on experiencing the first symptom. This concurs well with Gyenwali *et al.*, (2013) who opined that patient behavior of not recognizing symptom seriousness contributed to delay in presentation. Other patients seemed to have perceived something was wrong and they needed to see a doctor but engaged in denial to buy time with half of them being afraid, a few feeling embarrassed and some patients thinking it was something else like either stress or diet. A small number of respondents thought that they had been bewitched. These findings concur with the Christophe (2014) who found out that a person's individual perception regarding a condition as well as available enabling or modifying factors will lead to the likelihood of taking a desirable health action. The action depends on the degree of perceived threat or fear of cervical cancer.

A strong social support network was also established among the patients as more than three quarters of the patients shared the first symptom with their family members. However, out of these patients with social support network, majority still delayed in seeking medical care. This may indicate that majority of the patients' social connections in this setting may not have the right knowledge concerning cervical cancer signs and symptoms that would influence the patient to seek early medical care. More importantly, cancer is relatively new in health arena in Africa and a diagnosis of cancer is associated with death. Patients diagnosed with cancer risk isolation by their spouse and community at large due to stigma attached to a cancer diagnosis. The findings are consistent with Christophe (2014) who opined that the participant's social and family environment and the social support received also appear to be decisive factors.

Regarding acceptance of the diagnosis, half of the respondents did not immediately accept the doctors' diagnosis while another half of the respondents immediately accepted doctors' diagnosis. Among those who did not accept the diagnosis, majority did not believe the diagnosis given by the doctor since they had never considered themselves at risk of cervical cancer. Others reasons for non-acceptance of the diagnosis were thoughts that there might be another alternative explanation, wanting another medical opinion and due to personal/ family reasons. Non-acceptance of diagnosis can contribute further to delays in seeking treatment especially upon referral.

Even after diagnosis, a significant number of patients in this setting did not know they had cervical cancer and this correlated significantly with delay. This indicates a low perception which may be due to lack of awareness of cervical cancer. It is also noteworthy that due to the general fatalistic view of cervical cancer, many family members deterred health professionals from disclosing the illness to the patients despite counseling. Some patients who knew they had the disease did not believe that medical treatment could cure them causing further delays.

The results of the bivariate analysis established a statistically significant association between patient beliefs/ perception of symptoms, acceptance of diagnosis, knowledge of cervical cancer diagnosis and delay in seeking health care for p values 0.006, 0.041 and 0.04 are all less than 0.05 at 95% level of significance. The findings on the most significant factor for delay indicate that patient's beliefs and perception is the most significant predictor for delay. This means that a lot of effort needs to be put on changing the public's perceptions and beliefs if we are to reduce delays in seeking medical care.

There is need to structure the social support system such that people are not risking insolvency if they seek care for their signs and symptoms.

5.1.3 Cultural Factors and Delay in Seeking Medical Care

The study sought to establish the beliefs and perceptions regarding traditional medicine. Patients were asked the first professional they had consulted and from the findings, a tenth of the respondents consulted traditional healers and other complementary therapists and this concurs with Birhanu *et al.*, (2012) who established that some patients prefer traditional medicine to modern medicine believing that it gives immediate symptomatic pain relief even though some participants thought that it is not curative. Another group first consulted a chemist/pharmacist, half of the patients consulted a nurse and a quarter of them first consulted a doctor.

The study looked at counter culture in terms of counter culture and self-medication and upto two thirds of the patients admitted to buying over the counter medications. It was also established that the more these patients sought for over the counter medications, the more they were likely to delay in seeing the doctor. This is probably due to the symptomatic relief of symptoms they got from the medications.

On the readiness of the patients to see the doctor, the study found out that more than half of the respondents readily saw the doctor for medical reasons. Of the patients who do not readily see a doctor, majority failed to access the doctor because it was too expensive. Another fifth of the respondents felt the journey was too far and complicated which is consistent with the findings of Chadza *et al.*, (2012) who opined that other barriers include; long distance to the facility and means of transportation to reach the health facility. The study also established that some patients do not go to hospitals since some

of the doctors are male yet they do not trust male doctors examining their private parts. Again, slightly over a tenth of the patients did not like to do to hospital because of the doctors' attitudes- they don't like to bother the doctor with little problems since the doctors would not understand them.

The preventative health orientation was established and from the findings, more than a half of the patients had cervical cancer screening before the onset of the symptoms. The screening rate was higher than the national average of 18% (KNBS, 2015) probably because many of the patients were also attending the HIV/AIDS clinic where an active screening programme was already in place. This is in contrast with a study by Ngugi *et al.*, (2010) where women did not see the need for early detection as they believed cancer was incurable so they would die anyway. Upon screening, patients with suspicious lesions were then referred to the gynaecological clinic. From the bivariate analysis, the study found out statistically significant association between first professional consulted, self-medication, preventative health orientation and delay in seeking medical care for the p values 0.0001, 0.013, 0.048 and 0.022 are all less than 0.05 at 95% level of significance. Therefore, effective cervical cancer control programs will need to address how to deal with traditional healers and self-medication culture which considerably led to delays in this setting.

5.1.4 Health System Characteristics and Delay In Seeking Medical Care

The findings on the length of journey respondents took to access the clinic indicated that 85% took less than 4 hours to access the clinic yet 42.5% of them still delayed in seeking medical care. This implies that other determinants such as acceptability of the medical care offered in terms of diagnosis and treatment could play a bigger role in delay in

seeking medical care despite availability of services. In contrast, other studies had indicated that longer distances to health facility led to delays in seeking medical care (Chadza *et al.*, 2012). In this setting, it is not clear why patients delayed despite being in close proximity to health facilities.

Approximately half of the respondents had not consulted an obstetrician before coming to the facility indicating the non-availability of specialists in this setting. The study also established that many patients were misdiagnosed at some point and made numerous visits to health facilities before a diagnosis of cervical cancer was eventually made. This concurs with Chadza *et al.*, (2012) whose study established that patients with cervical cancer in Malawi made numerous visits to health facilities before they were finally diagnosed with cervical cancer. All the patients were misdiagnosed at some point and had been put on treatment for conditions like sexually transmitted infections, back pain and pelvic inflammatory disease before a diagnosis of cervical cancer was eventually made. This could point to a general lack of knowledge on cervical cancer symptoms among health workers, lack of adequate obstetricians within this region and poor referral systems and linkages among health care workers who see the patients.

This study established significant delays within the health systems with only about 14% of patients having a biopsy done within one month of their first medical consultation. This indicates that there is a generally low index of suspicion of cervical cancer signs and symptoms among health workers leading to mismanagement and delays in sending patients for biopsies. Furthermore, the study established that only a third of the patients got their results within a month from the time a sample was taken for biopsy. This indicates challenges in provision of adequate pathology services within the hospital.

Indeed, during the period of the study, patients were advised to take their biopsy specimens to a nearby private laboratory and bring their results back. This was because of lack of necessary biopsy equipment within the hospital laboratory.

The findings of the bivariate analysis and binary logistic regression analysis did not establish any statistically significant association between any of the health facility factors and delay in seeking medical care among cervical cancer patients in this setting.

5.2 Conclusions

1. Social-demographic factors such as younger age, higher number of children, low education level, lack of health insurance and unemployment contribute to delay in seeking medical care.
2. Psychosocial factors such as beliefs and perceptions held by the patients about initial symptoms were the most significant predictors that contribute to delay in seeking medical care. In acceptance of diagnosis and lack of knowledge on cervical cancer also contribute to delay in seeking medical care.
3. Cultural factors such as strong beliefs in traditional healers, counter culture and beliefs and myths regarding medical treatment and fatalism more often contribute to delay in seeking medical care. A preventative health orientation leads to reduction in delay in seeking medical care for cervical cancer.
4. Health system characteristics do contribute to further delays in accessing cancer treatment though they may not directly lead to delay in seeking medical care. In this setting, complexities within the health systems in terms of scheduling multiple appointments, misdiagnoses probably as a result of low index of

suspicion of cervical cancer among health workers, delays in requesting for biopsies and delays in getting biopsy results led to further delay in patient accessing the necessary cancer treatment services. The study has established that it is not enough to put up health facilities nearby. A lot has to be done to make the available services acceptable and to educate the patients on importance of seeking care in the facilities.

5.3 Recommendations

5.3.1 Recommendations from the study

Based on research findings, the study recommends that:

1. Specific strategies to reduce delay in seeking medical care such as encouraging and facilitating patients to join national insurance scheme (NHIF) and provision of job opportunities need to be addressed by national and county governments. Proper waiver systems need to be put in place in hospitals for needy patients. Innovative age-appropriate strategies to improve awareness and knowledge of cervical cancer signs and symptoms targeting the entire community need to be designed and implemented by the county governments. These could include development and dissemination of information, education and communication materials in banks, salons and grocery shops among others.
2. There is need to integrate cervical cancer awareness education in all points of care provision within the hospital by the respective hospital administrations to change patient perceptions and opinions regarding cervical cancer. There is also need to

explore how the strong social support networks in this setting can be utilized to reduce delay in seeking medical care among cervical cancer patients.

3. Health education should be integrated into community functions such as cultural events, chiefs' barazas and religious functions by the county health administration. There is need to integrate complementary medicine/ traditional healers so that they understand the importance of early referral. Also chemists need to be educated on when to refer patients for further care instead of offering symptomatic treatment repeatedly. Cancer screening services should be made available in reproductive health and comprehensive care clinics among others by the hospital administration to encourage the practice of screening in this setting as it has been shown to reduce delays.
4. The Ministry of Health needs to conduct regular refresher trainings and capacity building of health workers on cervical cancer. Health facilities need to be well equipped to provide proper diagnostic and treatment services as per national guidelines or if not possible, establish standard operating procedures that ensure timeliness in service delivery and proper working relationships with nearby private facilities that provide an outsourced service to the benefit of the patient.

5.3.2 Recommendations for further study

1. Future studies ought to be done by investigating the specific inherent factors and attributes that leads to delay in seeking medical care in the whole country. Alternatively, similar studies carried out on a regional scale shall permit room for comparative analysis.

2. A further study should be carried out to examine how best the strong social support networks can be utilized or structured to help in reducing delay in this setting.
3. A further study to find out why patients in this setting delayed in seeking care despite being in relatively close proximity to health facilities.

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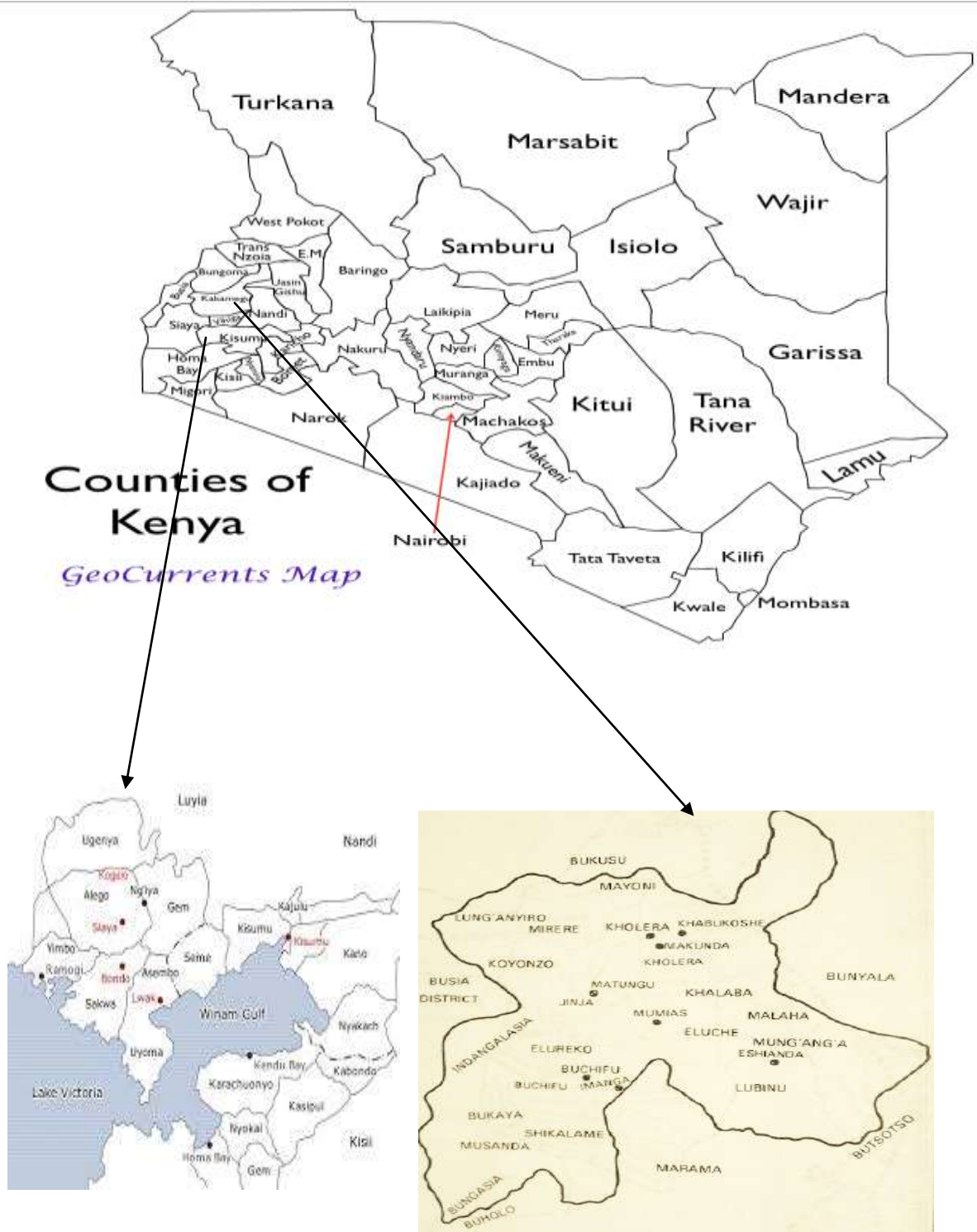
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APPENDICES

APPENDIX I: MAP OF STUDY AREA- KENYA, KISUMU AND KAKAMEGA



APPENDIX II: QUESTIONNAIRE -ENGLISH**A Study of Cervical Carcinoma**

Determinants of Late Presentation and Stage at Diagnosis in Cervical Carcinoma

DEMOGRAPHICS and SOCIOECONOMIC DATA – SECTION 1 to 2

No	QUESTIONS	ANSWERS
1.1	Patient number in the present study	_ _ _ (use sequential number enrolled on this study)
1.2	Patient initials	_ _ _ _
1.3	Date of interview (dd/mm/yyyy) / /
2. SOCIO-DEMOGRAPHICS		
2.1	Patient's age at the time of the interview	_ _ years
2.2	Patient's number of children
2.3	Has patient ever had cervical screening prior onset of symptoms?(VIA/VILI/Pap smear)? Yes No
2.4	When the disease began, where did the patient live (<i>indicate the name of the city/town/village/county</i>)
2.5	Has patient ever used oral contraceptives?	<input type="checkbox"/> Yes , if yes for how long?.....monthsyears <input type="checkbox"/> No
2.6	Religion	<input type="checkbox"/> Christian <input type="checkbox"/> Islam <input type="checkbox"/> Other, specify.....
2.7	Marital status	<input type="checkbox"/> married <input type="checkbox"/> single <input type="checkbox"/> divorced <input type="checkbox"/> widowed <input type="checkbox"/> separated
2.8	Patient education level (highest level achieved)	<input type="checkbox"/> no formal schooling <input type="checkbox"/> primary school <input type="checkbox"/> secondary school <input type="checkbox"/> college/university

2.9	Does the patient employ anybody to work in her home such as a cleaner, driver, cook, gardener)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.10	Was the patient employed just before her disease?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.11	Does the patient have any kind of health insurance? (<i>Choose one of the following</i>)	<input type="checkbox"/> No health insurance <input type="checkbox"/> Private health insurance <input type="checkbox"/> Governmental health insurance <input type="checkbox"/> Governmental + private health insurance

PART I. DETERMINANTS OF LATE DIAGNOSIS AND PRESENTATION QUESTIONNAIRE

3. FROM SIGNS/SYMPTOMS TO FIRST MEDICAL CONSULTATION		
3.1	What was the first sign/symptom (the <i>most prominent sign/symptom</i> that concerned you the most) that made you go to see a professional? (<i>indicate only one</i>)	<input type="checkbox"/> Lower abdominal pain <input type="checkbox"/> Back pain <input type="checkbox"/> Abnormal vaginal bleeding <input type="checkbox"/> Abnormal vaginal discharge <input type="checkbox"/> Dizziness/Diziness <input type="checkbox"/> Other (specify):
3.2	When did this sign/symptom first appear?	Date (dd/mm/yyyy) : / / oryears,months,weeks ago
3.3	What did you do when this sign/symptom was first noticed?	<input type="checkbox"/> Observed or waited for longer than 3 month before seeking professional advice <input type="checkbox"/> Sought or asked for professional advice within less than 3 month
4. POTENTIAL CAUSES OF DELAY (before first medical consultation)		

4.1	Who was the first professional you talked to about the signs/symptoms?	<input type="checkbox"/> Traditional healer / Herbalist / Complementary therapist <input type="checkbox"/> Pharmacy/chemist s <input type="checkbox"/> Other, specify..... <input type="checkbox"/> Nurse <input type="checkbox"/> Doctor
4.2	When did you first talk to this person about the signs/ symptoms?	Date (dd/mm/yyyy) : / / oryears,months,weeks ago
4.3	Did you tell any family member/friend about your symptoms? If yes, who?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.4	How did you initially feel about your signs/symptoms	<input type="checkbox"/> I thought it was not serious <input type="checkbox"/> I was afraid <input type="checkbox"/> Embarrassment <input type="checkbox"/> I thought it was because of something else-stress, diet, poor hygiene, etc <input type="checkbox"/> I thought i had been bewitched <input type="checkbox"/> Other, specify.....
4.5	How many times did you go to a traditional healer / Complementary therapist <i>before</i> going to a doctor?	<input type="checkbox"/> Never <input type="checkbox"/> once <input type="checkbox"/> twice <input type="checkbox"/> 3 or 4 times <input type="checkbox"/> 5 times or more
4.6	How many times did you go to a pharmacy or chemist shop <i>before</i> going to a doctor?	<input type="checkbox"/> Never <input type="checkbox"/> once <input type="checkbox"/> twice <input type="checkbox"/> 3 or 4 times <input type="checkbox"/> 5 times or more

4.7	Are you the kind of person who goes readily to the doctor when you are not feeling well or are sick?	<input type="checkbox"/> Yes, if I am sick or not feeling well, I go readily. <input type="checkbox"/> No, I don't go readily. If not, why (<i>only one answer allowed</i>) <input type="checkbox"/> too expensive <input type="checkbox"/> too far – too complicated a journey <input type="checkbox"/> I am embarrassed at male doctors examining my private parts <input type="checkbox"/> I am too busy to go to the doctor <input type="checkbox"/> Medical treatment would worsen my illness since i was already on other alternative treatment <input type="checkbox"/> I don't like to bother a doctor sinc they may not understand me <input type="checkbox"/> Other, specify:.....
5. FIRST MEDICAL CONSULTATION		
5.1	Who was the first doctor you talked to about the signs/symptoms?	<input type="checkbox"/> Private hospital doctor <input type="checkbox"/> Government hospital doctor <input type="checkbox"/> Private pharmacist <input type="checkbox"/> Other, specify which one:
5.2	When did this first consultation take place? <i>Try to obtain the exact date if possible. If the patient does not remember the date, then ask how long ago (from the time of this interview).</i>	Date (dd/mm/yyyy) : / / oryears,months,weeks ago

7.1	When was the first time that some tissue was taken for diagnosis (biopsy)? If the patient does not remember the date, then ask how long ago (from the time of this interview).	Date (dd/mm/yyyy) : / / <i>or</i>years,months,weeks ago <input type="checkbox"/> Does not remember having a biopsy → go to 8.3
7.2	When were you given the result? If the patient does not remember the date, then ask how many months ago	Date (dd/mm/yyyy) : / / <i>or</i>years,months,weeks ago <input type="checkbox"/> Not given any results of the biopsy
7.3	Before getting the cervical cancer diagnosis, were you diagnosed with any of the following conditions or illnesses after you started having signs/symptoms of cervical cancer? <i>(Please go through each illness with the patient)</i>	- Pelvic inflammatory disease <input type="checkbox"/> Yes <input type="checkbox"/> No - Back pain <input type="checkbox"/> Yes <input type="checkbox"/> No - Sexually transmitted infection <input type="checkbox"/> Yes <input type="checkbox"/> No - Other gynae infection <input type="checkbox"/> Yes <input type="checkbox"/> No - Other (specify).....
7.4	How many different doctors did you consult from the very 1 st one to the one who diagnosed you with this disease? (include the doctors who gave you the diagnosis)	Number of different doctors visited: _ _
7.5	How many visits to doctors did you make altogether (including going to the same doctor/s more than once)	Total number of visits to doctors: _ _
8. FROM DIAGNOSIS TO TREATMENT		

8.1	Did you immediately accept the diagnosis made?	<input type="checkbox"/> Yes <input type="checkbox"/> No, if No, indicate why: <input type="checkbox"/> I did not believe the diagnosis since i don't consider myself at risk of cervical cancer <input type="checkbox"/> I thought that there might be alternative explanations- frequent sex, promiscuity, etc <input type="checkbox"/> I wanted another medical opinion <input type="checkbox"/> I don't believe the disease is curable with treatment <input type="checkbox"/> I could not have treatment for personal/family reasons <input type="checkbox"/> Other, specify:.....
8.2	How many times did you go to a traditional healer / Complementary therapist <i>after</i> being diagnosed?	<input type="checkbox"/> None <input type="checkbox"/> once <input type="checkbox"/> twice <input type="checkbox"/> 3 or 4 times <input type="checkbox"/> 5 times or more
8.3	Were you told where to go to receive further tests or treatment, once you were diagnosed?	<input type="checkbox"/> Yes, I was given clear information <input type="checkbox"/> Information was given, but it was not clear where I needed to go <input type="checkbox"/> No, I was not given any information
8.4	Have you agreed to have treatment at this center?	<input type="checkbox"/> Yes <input type="checkbox"/> No

9. QUESTION to the INTERVIEWER at the END of the INTERVIEW		
9.1	<i>Do you think that the patient knows that she has cervical cancer?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> I cannot say with certainty

CLINICAL DATA

M1	Date of first evaluation at this institution	Date (dd/mm/yyyy) : / /
M2	Date of confirmed pathological diagnosis	Date (dd/mm/yyyy) : / /
	Histological type	<input type="checkbox"/> squamous cell carcinoma

M3		<input type="checkbox"/> adenocarcinoma <input type="checkbox"/> Other, specify _____ <input type="checkbox"/> UNK
M4	Histological grade	<input type="checkbox"/> G1 (well differentiated) <input type="checkbox"/> G3 (poorly differentiated) <input type="checkbox"/> G2 (moderately differentiated) <input type="checkbox"/> GX (grade cannot be assessed)
M5	FIGO stage at diagnosis	check one <input type="checkbox"/> Stage 0 The carcinoma is confined to the cells lining the cervix but not beyond basement membrane(Carcinoma in situ) <input type="checkbox"/> Stage 1 Tumor confined to the cervix <input type="checkbox"/> Stage 2 Tumor extends beyond uterus but not to pelvic wall or to lower third of vagina <input type="checkbox"/> Stage 3 Tumor involves pelvic side wall/ lower third of vagina with or without hydronephrosis <input type="checkbox"/> Stage 4 Tumor with bladder/rectal mucosa extension and/or extension beyond true pelvis
M6	Provide reason for missing data to above questions	<input type="checkbox"/> Full medical record could not be retrieved <input type="checkbox"/> Data was missing from the medical record.

GUIDELINES FOR COMPLETION OF THE QUESTIONNAIRES

LEGEND

Text that is written in Italics is for the interviewer only and does not need to be read to the patient

Unk = “Unknown” needs to be checked if the question has been asked, but no answer can be provided

NA = “Not Applicable” needs to be checked if the question does not apply to the patient

WARNING

If the patient is not aware that she has cervical cancer, use his/her terminology for the disease each time you find cervical cancer in the questionnaire.

DATES

It is important to get the most accurate and exact date as possible.

To help the patient to remember exact dates, ask her if it was before or after specific events that she may know (holidays, national days, local festivals, back to school,

political events, football matches, dates of very special weather, etc). Take time to question about the dates, prompting the patient.

- When the exact **day** is not known, ask the following question:

- Was it at the beginning of the month, middle of the month or end of the month?
→ Write day 5 of the month for beginning, 15 for middle and 25 for the end.

.If the patient does not remember at all, do not write any day

- When the exact **month** is not known ask the following question:

- Was it the first part of the year, second part, third part or fourth part?
→ Write February (02) for the 1st trimester, May (05) for the 2nd trimester, August (08) for the 3rd trimester and Nov (11) for the 4th trimester.

- If patient does not remember at all, fill in how many months ago from the date of the interview.

NAMES OF MEDICAL TESTS OR USE OF MEDICAL TERMS

It is extremely important to put the names of medical tests or use medical terms only in ways that are understandable to the patient. For example, the patient may not know what an MRI scan is – this may need to be described.

APPENDIX III: QUESTIONNAIRE-KISWAHILI VERSION

Utafiti wa Saratani Ya Mfuko wa Uzazi

Yanayosababisha Kuchelewa Kutafuta Matibabu Hospitalini na Hatua katika Utambuzi wa Saratani Ya Mfuko wa Uzazi

DEMOGRAPHIA na DATA YA KISOCIOEKONOMIKIA – SEHEMU 1 to 2

No	SWALI	JIBU
1.1	Nambari ya mgonjwa katika utafiti	_ _ _ _ (tumia nambari ya kufuatana katika usajili)
1.2	Majina ya mgonjwa kwa herufi tangulizi	_ _ _ _
1.3	Tarehe (dd/mm/yyyy) / /
2. SOCIO-DEMOGRAPHIA		
2.1	Umri wa mgonjwa wakati wa utafiti	_ _ miaka
2.2	Idadi ya watoto aliowazaa mgonjwa
2.3	Mgonjwa aliwahi fanyiwa uchunguzi wowote wa saratani ya mfuko wa uzazi kabla ya dalili za ugonjwa kutokea? (VIA/VILI/Pap smear)?Ndio La
2.4	Wakati ugonjwa ulipoanza mgonjwa aliishi wapi? (<i>andika jina la city/town/village/county</i>)
2.5	Je, mgonjwa amewahi kutumia dawa za kumeza za kupanga uzazi?	<input type="checkbox"/> Ndio, kama ndio kwa muda upi?.....miezi.....miaka <input type="checkbox"/> La
2.6	Dini	<input type="checkbox"/> Mkristo <input type="checkbox"/> Muislamu <input type="checkbox"/> Nyingine, taja.....
2.7	Hali ya kuolewa	<input type="checkbox"/> ameolewa <input type="checkbox"/> pekee <input type="checkbox"/> ametalaka <input type="checkbox"/> mjane

		<input type="checkbox"/> ametengwa
2.8	Elimu ya mgonjwa(kiwango cha juu sana alichofanikiwa)	<input type="checkbox"/> hana masomo rasmi <input type="checkbox"/> shule ya msingi <input type="checkbox"/> shule ya upili <input type="checkbox"/> chuo/chuo kikuu
2.9	Je, mgonjwa amemwajiri mtu yeyote katika nyumba yake kama msafishi, dereva, mpishi, mlinzi wa bustani)?	<input type="checkbox"/> Ndio <input type="checkbox"/> La
2.10	Je, mgonjwa alikuwa amejiriwa kabla ya ugonjwa wake?	<input type="checkbox"/> Ndio <input type="checkbox"/> La
2.11	Je, mgonjwa ana bima yoyote ya afya? (<i>Chagua moja ya haya</i>)	<input type="checkbox"/> Hana bima ya afya <input type="checkbox"/> Ana bima ya binafsi <input type="checkbox"/> Ana bima ya serikali(NHIF) <input type="checkbox"/> Ana bima ya serikali+ ya binafsi

SEHEMU YA I. VIGezo VINAVYOCHANGIA KUCHELEWA KUONEKANA HOSPITALINI

3. KUTOKA DALILI KUANZA HADI WAKATI WA KWANZA KUONEKANA NA DAKTARI		
3.1	Je, ni dalili gani iliyotangulia (ile iliyokupa wasiwasi zaidi) iliyokufanya uende umwone mtaalamu wa afya? (<i>chagua moja tu</i>)	<input type="checkbox"/> Uchungu sehemu ya chini ya tumbo <input type="checkbox"/> Uchungu mgongoni <input type="checkbox"/> kuona hedhi/ kutokwa na damu isiyo ya kawaida <input type="checkbox"/> Kutokwa na uchafu sehemu za siri isiya ya kawaida <input type="checkbox"/> Kizunguzungu <input type="checkbox"/> Nyingine (taja):
3.2	Je, dalili hii ilionekana lini kwa mara ya kwanza?	Tarehe (dd/mm/yyyy) : / / aumiaka,miezi,wiki zilizopita
3.3	Je, ulifanya nini wakati dalili hiyo ilipoonekana?	<input type="checkbox"/> Niliichunguza na kungojea zaidi ya miezi mitatu kabla ya kutafuta mawaidha ya mtaalamu <input type="checkbox"/> Nilitafuta au kuulizia mawaidha ya mtaalamu kabla ya miezi mitatu kupita.
4. YALIYOSABABISHA KUCHELEWA(kabla kuja hospitalini kwa mara ya kwanza)		

4.1	Je, ni nani aliyekuwa mtaalamu wa kwanza kumjulisha kuhusu dalili zako?	<input type="checkbox"/> Mtaalamu wa kitamaduni / Mtaalamu wa mitishamba <input type="checkbox"/> Mfamasia <input type="checkbox"/> Mwingine, taja..... <input type="checkbox"/> Muuguzi <input type="checkbox"/> Daktari
4.2	Je, ni lini mara ya kwanza ulipomjulisha mtaalamu huyu kuhusu dalili zako?	Tarehe (dd/mm/yyyy) : / / <i>au</i>miaka,miezi,wiki zilizopita
4.3	Did you tell any family member/friend about your symptoms? If yes, who?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.4	Je, ulihisi nini kuhusu dalili zako mara ya kwanza?	<input type="checkbox"/> Nilifikiri si shida kubwa <input type="checkbox"/> Niliogopa <input type="checkbox"/> Nilikuwa na aibu <input type="checkbox"/> Nilifikiri ilikuwa kwa ajili ya sababu nyingine -dhiki, chakula, hali mbaya ya usafi, etc <input type="checkbox"/> Nilifikiri nilikuwa nimerogwa <input type="checkbox"/> Nyingine, taja.....
4.5	Je, ni mara ngapi ulienda kumwona mtaalamu wa kitamaduni/ mtaalamu wa mitishamba kabla ya kuenda kumuona daktari?	<input type="checkbox"/> Sikuwahi <input type="checkbox"/> Mara moja <input type="checkbox"/> Mara mbili <input type="checkbox"/> Mara tatu au nne <input type="checkbox"/> Mara tano au zaidi
4.6	Je, ni mara ngapi ulienda kwa duka la dawa kununua madawa kabla ya kuwahi kuenda kumuona daktari?	<input type="checkbox"/> Sikuwahi <input type="checkbox"/> Mara moja <input type="checkbox"/> Mara mbili <input type="checkbox"/> Mara tatu au nne <input type="checkbox"/> Mara tano au zaidi

4.7	Je, kwa kawaida wewe huwa tayari kuenda kumuona daktari wakati unapohisi vibaya au ukiwa mgonjwa?	<input type="checkbox"/> Ndio, nikiwa mgonjwa au ninapohisi vibaya, niko tayari kuenda. <input type="checkbox"/> Hapana, kawaida siko tayari kuenda. Kama sivyo, kwa nini? <i>(jibu moja pekee lakubaliwa)</i> <input type="checkbox"/> ni ghali sana <input type="checkbox"/> ni mbali sana– safari ni ngumu sana <input type="checkbox"/> Siwaamini madaktari wanaume kunichunguza haswa sehemu zangu za siri <input type="checkbox"/> Sina wakati au muda wa kuenda kumuona daktari <input type="checkbox"/> Matibabu ya hospitali yange fanya ugonjwa wangu uzidi kwani nilikuwa natumia matibabu mengine <input type="checkbox"/> Sipendi kuwasumbua madaktari maana kawaida huwa hawanielewi <input type="checkbox"/> Nyingine, taja:.....
5. MARA YA KWANZA KUONEKANA HOSPITALINI		
5.1	Ni daktari yupi wa kwanza uliyemwambia dalili zako?	<input type="checkbox"/> Daktari wa hospitali ya kibinafsi <input type="checkbox"/> Daktari wa hospitali ya serikali <input type="checkbox"/> Daktari wa famasia <input type="checkbox"/> Nyingine, taja ni nani:
5.2	Je, ni lini mashauriano haya yalifanyika? <i>Jaribu kupata tarehe halisi ikiwezekana.</i> <i>Ikiwa mgonjwa hakumbuki tarehe, basi uliza ni muda gani hivi(kutoka wakati wa usajili huu).</i>	Tarehe (dd/mm/yyyy) : / / <i>au</i>miaka,miezi,wiki zilizopita

5.3	Je, safari ya kuenda kwa daktari ilichukua muda upi? Kwa masaa	<input type="checkbox"/> Chini ya masaa manne <input type="checkbox"/> Zaidi ya masaa manne
5.4	Je, uchunguzi wa mfuko wa uzazi ulifanya wakati wa masahauriano haya ya kwanza?	<input type="checkbox"/> Ndio <input type="checkbox"/> La
5.5	Je, daktari alifanya nini au kukupa mawaidha gani wakati wa mashauriano haya ya kwanza? <i>(Tick as many as apply)</i>	<input type="checkbox"/> alinipa madawa ya magonjwa maambukizi ya uzazi <input type="checkbox"/> alinituma kwa mtaalamu wa magonjwa ya akina mama/ hospitali <input type="checkbox"/> alinituma kwa mtaalamu wa aina nyingine <input type="checkbox"/> alichukua sampuli kwenye mfuko wa uzazi ili ichunguzwa <input type="checkbox"/> alinituma picha ya x-ray <input type="checkbox"/> alinituma picha za aina ya ultrasound <input type="checkbox"/> Nyingine, taja:
5.6	Basi ulifanya nini?	<input type="checkbox"/> Nilifanya daktari alivyonishauri <input type="checkbox"/> Sikufuata mashauri ya daktari, <i>kama sivyo, kwa nini?:</i>
5.7	Je, ni mara ngapi ulienda kumuona daktari/ kliniki mwakani kabla ya mahojiano haya?	<input type="checkbox"/> Sikuwahi <input type="checkbox"/> Mara moja <input type="checkbox"/> mara mbili <input type="checkbox"/> Mara tatu au zaidi
6.MAHOJIANO YA KWANZA NA MTAALAMU		
6.1	Je, uliwahi kuonekana na daktari mtaalamu wa wanawake wakati wowote?	<input type="checkbox"/> Ndio <input type="checkbox"/> La, sio kabla ya kuja katika hospitali hii <input type="checkbox"/> Sina uhakika
7. UTAMBULIZI WA UGONJWA		

8. KUTOKA UTAMBULIZI WA UGONJWA HADI MATIBABU		
8.1	Je, ulikubali matokeo ya utambulizi wa ugonjwa?	<input type="checkbox"/> Ndio <input type="checkbox"/> La, kama la, kwa nini?: <input type="checkbox"/> Sikuamini kwa maana sijioni kama naweza kupata saratani ya mfuko wa uzazi <input type="checkbox"/> Nilifikiri kuna sababu zingine kama kushiriki tendo la uzazi mara nyingi, kushiriki ngono na kadhalika <input type="checkbox"/> Nilitaka ushauri wa daktari mwingine <input type="checkbox"/> Sikuamini ugonjwa huu una matibabu <input type="checkbox"/> Sikuweza kupata matibabu kwa sababu za kipekee/kifamilia <input type="checkbox"/> Nyingine, taja:.....
8.2	Je, ni mara ngapi ulimtembelea mtaalamu wa kienyeji/ mitishamba hata baada ya kupata matokeo ya utambulizi wa ugonjwa?	<input type="checkbox"/> Sikuwahi <input type="checkbox"/> Mara moja <input type="checkbox"/> mara mbili <input type="checkbox"/> Mara tatu au nne <input type="checkbox"/> Mara tano au zaidi
8.3	Je, ulielezewa wapi utaenda kupata uchunguzi zaidi au matibabu baada ya utambulizi wa ugonjwa?	<input type="checkbox"/> Ndio, nilipewa habari kwa kina <input type="checkbox"/> Nilipewa habari lakini hayakuwa ya kina ni wapi nilihitaji kuenda <input type="checkbox"/> La, sikupeewa habari yoyote
8.4	Je, umekubali matibabu katika hospitali hii?	<input type="checkbox"/> Ndio <input type="checkbox"/> La

9.SWALI kwa MSAJILI mwisho wa MAHOJIANO		
9.1	<i>Je, unadhani kwamba mgonjwa huyu anajua kuwa ana saratani ya mfuko wa uzazi?</i>	<input type="checkbox"/> Ndio <input type="checkbox"/> La <input type="checkbox"/> Siwezi sema kwa uhakika

CLINICAL DATA

M1	Date of first evaluation at this institution	Date (dd/mm/yyyy) : / /
M2	Date of confirmed pathological diagnosis	Date (dd/mm/yyyy) : / /
M3	Histological type	<input type="checkbox"/> squamous cell carcinoma <input type="checkbox"/> adenocarcinoma <input type="checkbox"/> Other, specify _____ <input type="checkbox"/> UNK
M4	Histological grade	<input type="checkbox"/> G1 (well differentiated) <input type="checkbox"/> G3 (poorly differentiated) <input type="checkbox"/> G2 (moderately differentiated) <input type="checkbox"/> GX (grade cannot be assessed)
M5	FIGO stage at diagnosis	check one <input type="checkbox"/> Stage 0 The carcinoma is confined to the cells lining the cervix but not beyond basement membrane(Carcinoma in situ) <input type="checkbox"/> Stage 1 Tumor confined to the cervix <input type="checkbox"/> Stage 2 Tumor extends beyond uterus but not to pelvic wall or to lower third of vagina <input type="checkbox"/> Stage 3 Tumor involves pelvic side wall/ lower third of vagina with or without hydronephrosis <input type="checkbox"/> Stage 4 Tumor with bladder/rectal mucosa extension and/or extension beyond true pelvis
M6	Provide reason for missing data to above questions	<input type="checkbox"/> Full medical record could not be retrieved <input type="checkbox"/> Data was missing from the medical record.

APPENDIX IV: INFORMED CONSENT-ENGLISH VERSION

Title of the study: “**Determinants of delay in seeking medical care among women with invasive cervical cancer in Western Kenya**”.

Institution: Kenyatta University **Principal Investigator:** Dr. Mary Flaviane Nyangasi

Participant information: You are requested to participate in this research study. The incidence of cervical cancer is on the rise in Kenya. The goal of this study is to determine factors that contribute to delayed cervical cancer diagnosis and treatment within our region and society at large. It is very important that you understand these concepts that apply to all participants in the study before enrolling;

- i) Participation is voluntary with the right to refuse to participate or withdraw at any stage.
- ii) There is no penalty for refusing to participate
- iii) Your responses are confidential and will not be linked to you. All information including records of your participation will be confidential. Your identity will be concealed such that your name will not be used in any report resulting from this study. You will get free medical advice whenever necessary while in the study.
- iv) There are no risks foreseen by participating but you can skip those questions you are not comfortable answering or withdraw if you become uncomfortable.
- v) Although you may not benefit directly from participating in the study, you will make a major contribution to information concerning delay in seeking medical care for cervical cancer. In future, other may benefit because doctors and scientists will learn about how to reduce delays.

Please do contact me, Dr. Mary Nyangasi on 0722914646 in case of any questions or clarifications. You could also contact my supervisors: Prof Gichangi on 0722521946 or Dr. Osero on 0736284130. You can also contact the KU Ethics and Research committee. Your signature means that you understand the information provided and that you want to participate in the study.

I _____ agree to participate in the above study.

Date _____ Signature _____

Witness name _____ Date _____ Signature _____

Name of Investigator _____ Date _____ Signature _____

APPENDIX V: INFORMED CONSENT -KISWAHILI VERSION

Utafiti Kuhusu: “**Vigezo vinavyochangia kuchelewa kutafuta huduma ya hospitali kati ya wanawake wenye saratani ya mfuko wa uzazi eneo la magharibi mwa Kenya**”.

Taasisi: Kenyatta University **Mchunguzi mkuu:** Daktari Mary Flaviane Nyangasi

Habari kwa mshiriki: Unaombwa kushiriki katika utafiti huu. Matukio ya saratani ya mfuko wa uzazi yanazidi kuongezeka nchini Kenya. Utafiti huu unalenga kuamua ni sababu gani zinazochangia kuchelewa utambuzi wa ugonjwa na matibabu katika eneo la magharibi mwa Kenya. Ni muhimu uelewe kuhusu maneno haya yanayogusia washiriki wote katika utafiti kabla ya kujisajili;

- i) Kushiriki ni kwa hiari na una haki kukataa kushiriki au kujiondoa wakati wowote.
- ii) Hakuna adhabu kwa kukataa kushiriki.
- iii) Majibu yako ni ya siri na hayatuhusishwa nawe. Kila habari ikiwemo kumbukumbu ya kushiriki kwako ni ya siri. Utambulisho wako utafichwa kama kwamba jina lako halitatumiwa kwenye ripoti yoyote itakayotokea kulingana na utafiti huu. Utapata maagizo ya bure ya kimatibabu wakati wowote kwa muda wa utafiti huu.
- iv) Hapana hatari yoyote inayoonekana kwa kushiriki lakini unaweza kuruka yale maswali ambayo hauna raha kuyajibu au kujiondoa kabisa kama mshiriki.
- v) Hata kama hautapata ridhaa maalum kwa kushiriki, utasaidia sana kuelewa sababu za wanawake wenye saratani ya mfuko wa uzazi kuchelewa kutafuta

matibabu hospitalini. Hapo baadaye, wengine watasaidika kwa maana madaktari na wanasayansi watatjifunza jinsi ya kupunguza kuchelewa kwa kutafuta matibabu.

Tafadhali nipigie simu, Daktari. Mary Nyangasi katika 0722914646 ikiwa una maswali yoyote. Unaweza pia kuwapigia simu wasimamizi wangu: Prof Gichangi katika 0722521946 ama Daktari. Osero katika 0736284130. Unaweza pia kuwapigia simu KU Ethics and Research committee. Sahihi yako inamaanisha kwamba umeelewa maelezo haya na kwamba unataka kusajiliwa katika utafiti huu.

Mimi _____ nakubali kushiriki katika utafiti huu.

Tarehe _____ Sahihi _____

Jina la Shahidi _____ Tarehe _____ Sahihi _____

Jina la Msajili _____ Tarehe _____ Sahihi _____

APPENDIX VI: ETHICAL APPROVAL



KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

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Fax: 8711242/8711575

Our Ref: KU/R/COMM/51/716

Date: 23rd May, 2016

Mary Flaviane Nyangasi
Kenyatta University,
P.O Box 43844,
Nairobi

Dear Nyangasi,

RE APPLICATION NUMBER PKU/470/1 570- "DETERMINANTS OF DELAY IN SEEKING MEDICAL CARE AMONG WOMEN WITH INVASIVECERVICAL CANCER IN WESTERN KENYA."- VERSION 2

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic "Determinants of delay in seeking medical care among women with Invasive Cervical Cancer in Western Kenya."-Version 2

2. APPLICANT

Mary Flaviane Nyangasi

3. STUDY SITE

Western, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 23rd May, 2016.

5. ADVICE/CONDITIONS

- i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
- ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
- iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
- iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

Titus Kahiga

DR. TITUS KAHIGA
CHAIRMAN ETHICS REVIEW COMMITTEE



I, Mary Flaviane Nyangasi, accept the advice given and will fulfill the conditions therein.

Signature..... *Mary Flaviane Nyangasi* Dated this day of 27/5/16 2016.

cc. Vice-Chancellor
DVC-Research Innovation and outreach


APPENDIX VII: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
DR. MARY FLAVIANE NYANGASI
of KENYATTA UNIVERSITY, 27351-100
Nairobi, has been permitted to conduct
research in *Kakamega , Kisumu*
Counties

on the topic: *DETERMINANTS OF DELAY*
IN SEEKING MEDICAL CARE AMONG
WOMEN WITH INVASIVE CERVICAL
CANCER IN WESTERN KENYA

for the period ending:
31st May,2017

Permit No. : NACOSTI/P/16/83102/8815
Date Of Issue : 31st May,2016
Fee Recieved :Ksh 1000



Applicant's
Signature

Director General
National Commission for Science,
Technology & Innovation