

**FACTORS INFLUENCING UTILIZATION OF CERVICAL CANCER
SCREENING SERVICES IN EMBU HOSPITAL, EMBU COUNTY, KENYA.**

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DECLARATION

This project report is my original work and has not been submitted for an award in any other University

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DEDICATION

I wish to dedicate this research report to my husband Festus, sons Kenneth and Alex for their inspiration, support, understanding and encouragement during my entire Masters programme.

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LIST OF ABBREVIATIONS AND ACRONYMS

CACX	Cancer of the Cervix
HIV	Human Immunodeficiency Virus
HPV	Human papilloma virus
IUCD	Intra Uterine Contraceptive Device
KFS	Kenya Fact Sheet
Pap smear	Papanicolaou smear test
PATH	Program for Appropriate Technology in Health
PEPFAR	United States President's Emergency Plan for AIDS Relief
VIA	Visual Inspection with Acetic Acid
VILI	Visual Inspection with Lugol's Iodine
W.H.O	World Health Organization

ABSTRACT

Cervical cancer is a major global health problem, with nearly 528,000 new cases occurring each year worldwide. Each year an estimated 275,000 women die from the disease with about 86% of the cases occurring in developing countries, representing 13% of female cancers. Cervical cancer screening using Pap smear provides an appropriate way for early detection and prevention of cervical cancer if appropriately implemented. The purpose of this study was to establish the factors that influence utilization of cervical cancer screening services among women of reproductive age in Embu hospital, Embu County, Kenya. The objectives of the study were to establish how knowledge about cervical cancer, accessibility of screening services and the cost of these services influence women of reproductive age to utilize cervical cancer screening services in Embu Hospital. The study was cross-sectional descriptive survey conducted among women admitted in the gynecology ward at Embu hospital, in Embu County, Kenya. A cross-sectional descriptive study design was chosen as it would adopt quantitative approach through self-administered questionnaires. The target population for the study was women of reproductive age in Embu County. The sample size comprised of 138 women admitted in gynecology ward and convenience sampling was used to select respondents. Only women who were admitted in the gynecology ward were included. Data was analyzed using excel and statistical package for social sciences (SPSS). Descriptive statistics specifically tables have been used to present the findings. This study revealed that awareness about cervical cancer was high (77%) among the women in Embu; however the knowledge of cervical cancer screening and cervical cancer risk factors were low (41% and 22%) respectively despite high literacy rates among the women. Barriers such as lack of information about cervical cancer screening procedures, not knowing where to go for cervical cancer screening and thinking that cervical cancer screening is painful were sighted as the reasons why women don't do cervical cancer screening. Utilization of screening services was low at 36%. The study revealed that cervical cancer screening services were accessible and available (70%), and affordable (52%). Therefore accessibility or cost of the screening service would not be considered as a factor as to why women are not utilizing the cervical screening service. It is recommended that the Government of Kenya, through the ministry of health should acknowledge and recognize that cervical cancer is a major public health concern and accord its prevention and treatment priority in resource allocation. There is a critical need to intensify mass education on risk factors for the disease, to inform them of the role of HPV in HIV-infected women and to promote both HIV screening and regular cervical cancer screening.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Cervical cancer is a major global health problem. Cervical cancer kills an estimated 275,000 women every year and 528,000 new cases are reported worldwide annually (WHO, 2013). About 86% of the deaths occur in lower-resource countries of sub-Saharan Africa. Almost 70% of the global burden falls in areas with lower levels of development and more than one fifth of all new cases are diagnosed in India (WHO, 2013). This entirely preventable disease is the second largest cancer killer of women in low and middle-income countries, with most women dying in the prime of life (WHO, 2013). While numerous tools and technologies exist to prevent cervical cancer, these interventions remain largely inaccessible to the girls and women who need them most. Despite the proven link between the Human Papillomavirus (HPV) and cervical cancer, HPV vaccines are not yet widely available and screening rates remain low in much of the world. Lack of awareness and deep-seated stigma associated with the disease also pose significant barriers to access help (WHO, 2013). Cervical cancer is a malignant neoplasm of the cervical area of the uterus in which the cells of the cervix become abnormal and begin to grow uncontrollably, forming tumours (Kumar, et al., 2007). When advanced, it is often associated with high mortality and morbidity as the prognosis is very poor. Therefore, early detection and treatment of the precancerous stage is the key to success in achieving a reduction in mortality and morbidity that result from cervical cancer (Kumar, et al., 2007).

Studies done in U.S.A and Sweden revealed that regular cervical cancer screening with a follow up of abnormalities significantly reduce the incidence of cervical cancer and therefore the mortality and morbidity associated with it (Saslow, Boetes& Burke, 2008; Bergstrom *et al.*, 1999). According to the American cancer society, it is currently recommended that, every woman who is sexually active, or 21 years of age or more, should have a cervical cancer screening done annually for the first 3 consecutive years (Saslow, Boetes& Burke, 2008).

In the third world cervical cancer is the most common cancer and it is where over three quarters of the estimated half a million newly diagnosed cases occur annually. The highest incidence is observed in developing countries including the sub-Saharan Africa (GLOBOCAN, 2013; Stat bite, 2006). This high incidence is attributed to inaccessibility of and inadequacy of screening programs as well as the unawareness of the disease in less developed countries (Stat bite, 2006; Gatune and Nyamongo, 2005).

Despite the advances that have been made, cervical cancer is still a common cause of death in Africa and South-Central Asia; however, non-cancer related deaths especially due to acquired immune-deficiency syndrome and tuberculosis have overshadowed cervical cancer awareness by the public at large (Yang, *et al.*, 2004). A survey done in Malawi on the cervical cancer morbidity showed that 80% of women who sought help between 2001 and 2002, were at an inoperable stage, thus in the terminal stages of the disease. Consequently, every year, 2316 women are diagnosed with cervical cancer and 1621 die from the disease in Malawi. (Chadza, *et al.*, 2012).

Kenya has a population of 12.92million women ages 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 4802 women are diagnosed with cervical cancer and 2451 die from the disease (ICO, 2013). Cervical cancer ranks as the first most frequent cancer among women in Kenya and the first most frequent cancer among women between 15 and 44 years of age. About 39.6% of women in the general population are estimated to harbor cervical HPV infection at a given time, and 61.4% of invasive cervical cancers are attributed to HPVs 16 or 18 (ICO, 2013) .

In a study conducted among patients at Kenyatta National Hospital in Nairobi, Kenya, it revealed that, Pap smear testing was more likely if the patient had cervical cancer, or was aware about cervical cancer, or had some education, or had used family planning and condoms, or was 35 years and above (Gichangi, *et al.*, 2003). However, the study revealed that perception of risk of cervical cancer was not associated with Pap smear testing ((Gichangi, *et al.*, 2003).

A study carried out in Central Provincial General Hospital, Nyeri, Kenya, found out that utilization of cervical cancer screening services was low at 24.7% despite the fact that the study group consisted of well educated women who had autonomy in decision making and good family support. Only less than 20% of the women knew the importance of cervical cancer testing and majority (80%) of the respondents could only mention one to two risk factors of cervical cancer (Gichogo, 2012).

Another study done in Kasarani, Nairobi Kenya found out that 80% of respondents knew about Pap smear and cervical cancer and only 21% of them had had a Pap smear test done on them (Ombechi et al., 2009). From the study it can be concluded that knowledge of cervical cancer and Pap smear does not translate to action. There could be more underlying reasons as to why women do not go for screening despite knowing the importance.

Most cervical cancers take up to 10-12 years to develop therefore cervical cancer screening is very important and should be done regularly as recommended. Since cervical cancer is preventable it is important that women be aware of screening services and diagnostic procedures available and their benefits, risk factors for cervical cancer as well as management of pre-invasive disease (Saslow, *et al.*, 2008).

Cervical cancer can be detected early and treated. The tests to detect cervical cancer include the Papanicolaou test (Pap smear), visual inspection with acetic acid (VIA) and visual inspection with Lugol's iodine (VILI) which are currently available in most government hospitals as well as private clinics and hospitals in Kenya. Cervical cancer screening using these tests have been used for early detection of cervical cancer in women, thus preventing development of cervical cancer and as a result saving a lot of women from unnecessary mortality and morbidity resulting from cervical cancers. However, although there is overwhelming evidence that cervical cancer today is almost totally preventable to a large extent through screening and treatment of premalignant lesions, the service is unfortunately not readily utilized by the general population in most developing countries, including Kenya.

1.2 Statement of the Problem

Current estimates indicate that every year 4802 women are diagnosed with cervical cancer and 2451 die from the disease in Kenya (ICO, 2013). Cervical cancer ranks as the first most frequent cancer among women in Kenya and the first most frequent cancer among women between 15 and 44 years of age. About 61.4% of invasive cervical cancers are attributed to HPV infection (ICO, 2013).

While numerous tools and technologies exist to prevent cervical cancer, these interventions remain largely inaccessible to the girls and women who need them most. Despite the proven link between the HPV and cervical cancer, HPV vaccines are not yet widely available and screening rates remain low in much of the world. Lack of awareness and deep-seated stigma associated with the disease also pose significant barriers to access (WHO, 2013).

In the recent past cases of deaths due to cervical cancer has been on the rise in Embu Hospital raising concern that women may not be undergoing the Pap smear test as recommended or the women are tested when it is too late to intervene with curing treatment and therefore receive palliative care only. Deaths due to cervical cancer in Embu Hospital were as follows; 2012- 28 deaths, 2011- 26 deaths, 2010-21 deaths, 2009- 15 deaths (Embu PGH records). Women of reproductive age seeking services in Embu Hospital are increasingly being diagnosed with cervical cancer in its late stages. This led to the question whether the women in this region ever go for cervical cancer screening as recommended, and if they do not, what hinders them? This study, therefore, sought to establish the factors that influence utilization of cervical cancer screening services by women of reproductive age in Embu hospital, Embu County.

1.3 Purpose of the study

The purpose of this study was to establish some of the factors that influence utilization of cervical cancer screening services by women of reproductive age in Embu hospital, Embu County, Kenya.

1.4 Objectives of the study.

The study was guided by the following objectives:

- (i) To establish how knowledge about cervical cancer influences utilization of cervical cancer screening services by women of reproductive age in Embu hospital.
- (ii) To establish how accessibility of cervical cancer screening services influence their utilization by women of reproductive age in Embu hospital.
- (iii) To establish how the cost of cervical cancer screening services influence their utilization by women of reproductive age in Embu hospital.

1.5 Research Questions

This research study sought to answer the following questions:

- (i) To what extent does knowledge about cervical cancer influence utilization of cervical cancer screening services by women of reproductive age in Embu hospital?
- (ii) How does accessibility of cervical cancer screening services influence their utilization by women of reproductive age in Embu hospital?
- (iii) To what extent does the cost of cervical cancer screening services influence their utilization by women of reproductive age in Embu hospital?

1.6 Significance of the study

The study examined the extent to which knowledge about cervical cancer, accessible services and the cost of services influence utilization of cervical cancer screening services in Embu hospital. Thus the findings of the study are expected to help in decision making on how to improve uptake of cervical cancer screening services in Embu hospital. The results of the study should contribute to the development of programs informing women of reproductive age on the importance and benefits of cervical examination done via screening tests. The study results will also aim to the development of programs aimed at dispelling any myths or factors present among women that hinder them from undergoing the cervical cancer screening tests. It is hoped that the findings of this study will lead to recommendations that will enable the Ministry of Health to engineer cervical cancer screening program in Kenya with the aim of increasing uptake of the eligible age group.

This will lead to early identification of those at risk of developing cervical cancer and early interventions taken, thereby reducing the occurrence of the disease as well as decreasing mortality and morbidity resulting from it.

1.7 Limitations of the study

Accessing all women in the reproductive age in Embu County was not possible since the population is large. Due to resources and time that was available, not a large sample was involved in the study as would be desired. The research was carried out in gynecology ward of Embu hospital. The respondent's feelings, attitude, social interaction and failure to respond to certain items in the questionnaire due individual's culture and values were not easy to control but all efforts were put to assure the respondents of utmost confidentiality.

1.8 Delimitations of the study

The study being an academic research, was conducted within the stipulated time of the Master's programme thus the scope of the study was reduced to enable the research be carried out within the set time frame and with the available resources/finances. The respondents were assured of utmost confidentiality.

1.9 Assumptions of the study

It was assumed that the respondents answered the questions in the questionnaire truthfully and honestly to the best of their knowledge. It was also assumed that the sample selected represented the view of the larger population.

1.10 Definition of significant terms

Benefits; Viewed as the gain that doing cervical cancer screening will result to; like early detection of cervical cancer, delay progression of cervical cancer and subsequently leading to decrease mortality due to cervical cancer.

Barriers; Refers to obstacles that prevent those eligible for cervical cancer screening from participating in the available cervical cancer screening programs.

Cervical cancer screening; Steps taken to identify people with any form of cervical cells changes and those without any form of cervical cells changes.

knowledge about cancer of cervix; refers to ability to identify what is cancer of the cervix, at least six risk factors of cancer of the cervix and at least three benefits of cervical cancer screening.

Accessible services; cervical cancer screening services are within reach of the target population.

Cost of services; cervical cancer screening services are affordable to the target population.

Women of reproductive age: female aged between 18years to 49 years.

1.11 Organization of the study

The study is organized in five chapters.

Chapter one is organized into background of the study, statement of the problem, purpose of the study, objectives, research questions, significance of the study, definition of significant terms and assumptions of the study.

Chapter two contains the literature review and the conceptual framework.

Chapter three deals with research methodology employed which include research design, target population, sample size and sampling procedure, research instruments, data collection procedures, data analysis techniques, ethical considerations and a table of operationalization of variables.

Chapter four focus on data analysis, interpretation and presentation of findings.

Chapter five covers the discussion of key findings, conclusions drawn from the findings and recommendations made there to.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to factors that are a hindrance to seeking cervical cancer screening services from global and local perspectives. The areas reviewed include an overview of cervical cancer screening, inadequacy of knowledge as a hindrance, inaccessible and unaffordable services as hindrance to women of reproductive age to search for cervical cancer screening services. The chapter also contains the conceptual framework and the summary of literature review.

2.2 Overview of Cervical Cancer Screening.

Cervical cancer is one of the most common cancers that affect a woman's reproductive organs. Cervical cancer is a major global health problem. Cervical cancer kills an estimated 275,000 women every year in the world and 528,000 new cases are reported worldwide annually (WHO, 2013). About 86% of the deaths occur in lower-resource countries of sub-Saharan Africa. Almost 70% of the global burden falls in areas with lower levels of development and more than one fifth of all new cases are diagnosed in India (WHO, 2013). This entirely preventable disease is the second largest cancer killer of women in low and middle-income countries, with most women dying in the prime of life (WHO, 2013). While numerous tools and technologies exist to prevent cervical cancer, these interventions remain largely inaccessible to the girls and women who need them most. Despite the proven link between the Human Papillomavirus (HPV) and cervical cancer, HPV vaccines are not yet widely available and screening rates remain low in much of the world. Lack of awareness and deep-seated stigma associated with the disease also pose significant barriers to access help (WHO, 2013). Various strains of the human Papillomavirus (HPV), a sexually transmitted infection, play a role in causing most cases of cervical cancer. When exposed to HPV, a woman's immune system typically prevents the virus from doing harm. In a small group of women, however, the virus survives for years before it eventually converts some cells on the surface of the cervix into cancer cells. Cervical cancer occurs most often in women over age thirty years.

Thanks largely to Pap test screening, globally the death rate from cervical cancer has decreased greatly over the last 50 years. However in Kenya women have not taken to doing Pap smear regularly and this leads to many late diagnosis. And today, most cases of cervical cancer can be prevented with a vaccine for young women. However, the vaccine is expensive and out of reach for most women in Kenya.

In Kenya there are no Pap smear programs. As a result both the frequency and mortality from cervical cancer is high. Most Kenyan women are diagnosed in advanced stages of the cancer compared to North America, where most are diagnosed early when treatment is more effective. There is an extreme lack of resources to treat cervix cancer (both medical equipment and physician expertise) in Kenya. There are, however, effective strategies that can be employed to reduce the impact of cervix cancer. Ultimately the goal must be to prevent cervical cancer through introduction of the HPV vaccine, but even if introduced today it will take many years for its full impact to be realized.

Over the years awareness and uptake of services has remained poor despite all the studies on cervical cancer screening. Various studies indicate that cervical cancer screening services is poorly utilized and the awareness of the need for it is very low (Wong, 2009; Carr, Sellors, 2004; Ayinde & Omigbodun, 2003). Problems associated with cervical cancer incidence include late reporting, ignorance and cultural issues relating to cervical cancer screening. Currently, reports show that only three-percent of women between the ages of 15-49 request cervical cancer screening. Given that patient records take many forms and are not necessarily shared between clinics, it is difficult for health providers to be aware of their patients' cervical screening status, or to track health trends related to the disease. The Government of Kenya can use its existing HIV care and treatment network to refer patients for cervical cancer testing. According to the United States President's Emergency Plan for AIDS Relief (PEPFAR), women with HIV are four times more likely to develop abnormalities to the cervix, which can lead to cancer. PEPFAR's aim in Kenya is to develop and strengthen cancer control activities through supporting the Ministry of Health's National Cancer Control Strategy 2011-2016, specifically through initiation and scale up of cervical cancer screening (VIA/VILI)

and point of care treatment of precancerous lesions with cryotherapy for HIV-infected women (PEPFAR., Kenya).

2.3 Knowledge on cervical cancer as an influence to utilization of screening services.

In many developing countries, women's knowledge of cervical cancer is very limited (Amarin, Badria, & Obeidat, 2008). It has been demonstrated that the vast majority of women in some countries had not heard of cervical cancer and even more knew nothing about cervical screening (Wong, 2009; Kidanto, Kilewo, and Moshiro, 2002). Poor knowledge of cervical cancer among women has also been reported in various studies (Wong, 2009; Carr, Sellors, 2004; Ayinde & Omigbodun, 2003). A study of influences on uptake of reproductive health services revealed that knowledge about cervical cancer among the women was very low (Mutuyaba et al., 2007). Prominent in their finding was the fact that patients are not given adequate information on cervical cancer and screening. This shows that women are willing to know about their health but health providers are not using their vantage positions to provide necessary information on cervical cancer. There are several studies showing that knowledge about cervical cancer and Pap testing influences uptake of cervical cancer screening services (Coughlin and Uhler, 2002; Idestrom, Milsom, and Andersson-Ellstrom, 2002). This was especially true among Jordanian women where about 80% of those interviewed in a study knew cervical cancer could be detected and referred to the Pap test as a means of prevention (Amarin, Badria, & Obeidat, 2008). This gap in knowledge is one of the most important determinants of inadequate screening status. Many studies have shown that cervical cancer and Pap testing awareness positively influence the utilization of cervical cancer screening services (Aboyeji, Ijaiya and Jimoh, 2004; Lartey, Joubert and Cronje, 2003; Idestrom, Milsom, and Andersson-Ellstrom, 2002). In many developing countries, women's knowledge of cervical cancer and Pap smears is very limited. In a survey performed in Nigeria, 254 women were randomly assessed and asked about knowledge of cervical cancer (Ayayi and Adewole, 1998). Only 15% had ever heard of cervical cancer and those who knew about cervical screening were even less. The barriers identified by Mutuyaba et al., (2007) were ignorance about cervical cancer, cultural constraint/beliefs about illness, economic

factors, domestic gender power relations, alternative authoritative sources of reproductive health knowledge and unfriendly health care services.

Research among Kenyan women to find out how much they know about cervical health suggests a further challenge. A 2010 study conducted in Kisumu by the University of North Carolina-Chapel Hill found that 89% of the study population knew of cancer in general, but only 15% had heard of cervical cancer. None of the women in the study knew about the HPV vaccine (Huchko, et al., 2011).

In a study conducted among patients at Kenyatta National Hospital in Nairobi, Kenya it revealed that, Pap smear testing was more likely if the patient was aware about cervical cancer, or had some education, or had used family planning and condoms, or was 35 years and above (Gichangi et al., 2003). However, the study revealed that perception of risk of cervical cancer was not associated with Pap smear testing (Gichangi et al., 2003). Another study carried out in Central Provincial General Hospital, Nyeri, Kenya found out that utilization of cervical cancer screening services was low at 24.7% despite the fact that the study group consisted of well educated women who had autonomy in decision making and good family support. Only less than 20% of the women knew the importance of cervical cancer testing and majority (80%) of the respondents could only mention one to two risk factors of cervical cancer (Gichogo, 2012). Lack of awareness and screening plus the unavailability of HPV vaccines are obstacles in Kenya's fight against cervical cancer. Vaccination is crucial in developing countries because so few women go for cervical cancer screening.

However, another study done in Kasarani, Nairobi Kenya found out that 80% of respondents knew about Pap smear and cervical cancer and only 21% of them had had a Pap smear test done on them (Ombechi et al., 2009). This study found out that knowledge of cervical cancer and Pap smear does not translate to action. There could be more underlying reasons as to why women do not go for screening despite knowing the importance.

2.4 Accessibility of the screening services as an influence to their utilization.

All sexually active women are at risk for the development of cervical cancer. Where the services are available, many women seem not to be aware of the services. Services are mainly available in some secondary and tertiary health facilities at a cost that make it not accessible and affordable to many women.

The major factors identified by the women in a study by Ndikom and Ofi (2012) are lack of awareness about the screening, illiteracy, some people think that such services are for educated people, and the facts that when people are healthy they don't bother about preventive services as they have other contending problems.

Also, poor knowledge, underlying health and cultural beliefs, attitudes, language and unhelpful attitudes of health professionals are important barriers (Thomas, Saleem, Abraham, 2005). Other barriers to screening include low income, decreased access, insufficient funding, and unfavorable attitudes towards screening (Hilton et al., 2003). Similarly, the barriers identified by Mutyaba (2007) were ignorance about cervical cancer, cultural constraint/beliefs about illness, economic factors, domestic gender power relations, alternative authoritative sources of reproductive health knowledge and unfriendly health care services.

Cervical cancer and HIV represent synergistic threats to women's reproductive health and overall mortality in resource-limited countries. Biologically, HIV infection increases women's risk of human Papillomavirus (HPV) infection, cervical neoplasia, and invasive cervical cancer (WHO, 2010). In addition, most global HIV infections occur in resource-limited settings where healthcare funding and infrastructure are inadequate for primary care and prevention programs such as cervical cancer screening, which substantially increases the vulnerability of HIV-infected women (WHO, 2010).

Also, lack of cervical cancer control programme could also be a factor influencing utilization of services (WHO, 2010). Owing to a lack of surveillance programs, the exact incidence of cervical cancer in Kenya is unknown, but it has been estimated at approximately 29–200 cases per 100 000 women, with a 2 to 4 fold increase in incidence

among HIV-infected women (WHO., 2010). Historically, the large burden of disease has been attributed to a lack of national screening guidelines and funding for cervical cancer prevention programs.

Population-based cervical screening has been promoted widely and enthusiastically as a preventive measure for cervical cancer since the development of the Papanicolaou smear test in the 1940s (Shingleton et al., 1995). Reports from United States National Cancer Institute revealed that from 1975 to 2000, the surveillance, epidemiology, and end results (SEER) based age-adjusted incidence rate of invasive cervical cancer in the United States decreased from 14.8 to 7.6 per 100 000 women/year (Ries et al., 2003). However, the incidence of cervical cancer in most less developed countries including Kenya is still very high due to low uptake of women in the screening programs (Ferlay et al., 2002). Several studies have attributed low uptake of cervical cancer screening to non-participation of high risk women in established screening programs available for cervical cancer prevention and or lack of health care access, as the most common implicated universally attributable factor in the development of invasive cervical cancer (Kenter et al., 1996, Janerich et al., 1995, Hogenmiller et al., 1995). Among those who had access to health care, non-participation in established cervical cancer preventive programs available in the health care system was the most common attributable factor in the development of cervical cancer (Sung et al., 2000, and Stuart et al., 2000).

Review of a population-based Canadian study reported that 46% of women who were diagnosed with cervical cancer had not had a Pap smear test within 3 years prior to the diagnosis of cervical cancer (Stuart et al., 2000); while a study of a large U.S. prepaid, comprehensive health plan reported that 53% of women who were diagnosed with cervical cancer had not had a Pap test within 3 years prior to the diagnosis (Stuart et al., 2000). Therefore, regular cervical cancer screening is crucial if cervical cancer incidence and its associated mortality and morbidity are to be reduced to a reasonable level in developing countries as the case in developed countries. Factors associated with reducing participation or uptake of women in cervical cancer screening programs are poor awareness of the indications and benefits of the pap smear test, lack of knowledge of cervical cancer and its risk factors, fear of been embarrassment by health care workers,

fear of pain and fear of finding a positive result (Fylan, 1998). Lack of female screeners in health facilities, convenient clinic times, anxiety caused by receiving an abnormal cervical smear result, poor understanding of the cervical cancer screening procedures and a need for additional information are other barriers for uptake in cervical cancer screening programs (Fylan, 1998).

Public health researchers have been quite categorical in their views that regular Pap smears can detect invasive disease early and improve the odds for successful treatment. Countries such as Denmark and Sweden have reported a 60% decrease in cervical cancer morbidity and mortality with nationwide Pap test programmes (Landrine and Klonoff, 2001). Unfortunately, only 5% of women in developing countries have access to Pap tests, compared with 50% in developed countries such as the USA where it is mainly the poor and minority women who have insufficient access due to inadequate health insurance (Landrine and Klonoff, 2001). In a report by Population Reference Bureau, it is shown that only 5% women in low income countries have undergone a Pap smear test (PATH, 2004).

2.5 Cost of cervical cancer screening as an influence to their utilization.

Financial constraint is another problem as the available services are not free. The poverty level in our society is quite high. Some people think that it is a death warrant if they are tested positive and are not able to afford treatment so it is better not to go for screening.

A Swedish Study reported that non attendance to cervical screening was positively associated with time-consuming and economic barriers (Nygrd et al., 2006). Time is a problem because women have so many responsibilities thus cervical cancer screening could be given less priority in demanding real life settings (Nygrd et al., 2006). Most screening programmes rely on Pap smear which are complex and costly to run especially in developing countries where health systems and infrastructures are weak (Ashford, Collymore, 2005).

The past decade has yielded another powerful tool in the fight against cervical cancer worldwide. In 2006, the pharmaceutical company Merck released a vaccine called Gardasil, while competitor GlaxoSmithKline released the Cervarix vaccine. Both are

designed to protect women from the human Papillomavirus (HPV), which causes cervical cancer. By 2009, 33 developed countries had included the HPV vaccine as part of their national immunization programmes.

A study conducted by the National Cancer Institute, Cancer Screening Consortium for Underserved Women in 1995 also reported that women in poor and minority communities have been identified as being less likely to utilize screening by Pap smears and they are less likely to follow up after an abnormal Pap smear. The reasons for the poor uptake among these women were grouped into 3 broad categories namely demographic, psychosocial, and organizational. The demographic category includes such factors as age, income level, education level, and marital status. The psychosocial category includes beliefs about susceptibility to and the severity of cervical cancer, general knowledge about cervical cancer and cervical cancer screening, and barriers to screening including fear of pain and embarrassment. The organizational category includes barriers such as limited access to testing facilities and limitations in services. In Botswana, McFarland (2003) reported that lack of cervical cancer screening or infrequent use of cervical cancer screening is noted for different reasons like lack of knowledge, lack of access to health care, financial constraints, and attitudes of health care workers etc. Perceived susceptibility to cervical cancer, perceived severity to cervical cancer, perceived benefits to doing cervical cancer screening and perceived barriers to seeking cervical cancer screening are the major factors that determines a woman's likelihood to do cervical cancer screening although attitudes of health providers, availability and cost are other important determinants (Burak et al., 1997). Therefore, the assumption is that if these screening services are available and accessible at low cost like the case of VIA/VILI tests, the uptake of cervical cancer screening will depend largely on the perceived susceptibility of women to cervical cancer, perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening and perceived barriers to seeking cervical cancer screening. If the uptake is to be increased to achieve the desired goals, these issues must be recognized and taken into account when planning and implementing effective cervical cancer screening programs in order to reduce the mortality and morbidity resulting from cervical cancer.

According to the American National Cancer Institute, widespread vaccination has the potential to reduce deaths from cervical cancer worldwide by as much as two-thirds. In most developing countries, the cost of the vaccine has been seen as too high. But Kenya's neighbor, Rwanda, has pursued a public-private vaccine delivery strategy that demonstrates what can be done. With vaccines donated by Merck, Rwanda rolled out an ambitious nationwide programme that aims to provide vaccine protection to all girls within three years.

Although some projects in Kenya offer the HPV vaccine, Kenya's national reproductive health strategic plan has addressed cervical cancer largely through the roll-out of a low-cost screening tool known as VIA (visual inspection of the cervix using acetic acid). For the past few years, the government has aggressively trained healthcare workers to use the see and treat model. VIA requires no laboratory back-up. The physician manually applies acetic acid (or vinegar) on to the cervix to allow for a better view of the surface. If lesions or abnormalities are detected, they can be treated immediately. It is a powerful screening tool, which lawmakers adopted relatively quickly.

A study done by Agurto et al, (2004) revealed that financial constraints were associated to never doing a Pap smear as was with cost of transportation among poor women who had to travel some distance to do Pap smear test. Also, Leyva et al., (2006) and Bessler et al., (2007) reported significant association between perceived barriers to cervical cancer screening with employment due to lack of convenient clinic time.

2.6 Other factors influencing participation of women in cervical cancer screening.

Factors associated with reducing participation or uptake of women in cervical cancer screening programs are poor awareness of the indications and benefits of the pap smear test, lack of knowledge of cervical cancer and its risk factors, fear of being embarrassed by health care workers, fear of pain and fear of finding a positive result (Fylan, 1998). Lack of female screeners in health facilities, convenient clinic times, anxiety caused by receiving an abnormal cervical smear result, poor understanding of the cervical cancer screening procedures and a need for additional information are other barriers for uptake

in cervical cancer screening programs (Fylan, 1998). Studies in the developed countries (McKee, 1997 and Marcus et al., 1992) have reported a high percentage of participation in cervical cancer screening of about 86% and a follow up rate of 76% within 3 years after initial screening, while a study done in Kenya reported low participation rates of 41% and follow up rates of only 21% within 3 years after initial screening (Ombech, Muigai, Wanzala, 2012). This shows that the frequency of practice in Kenya is not adequate as recommended.

The reasons for non-participation among these women in less developed countries according to a study carried out in Southern Brazil (Cesar et al., 2002) in which 1,302 women were interviewed and 57% had never had a Pap smear, reported the factors most closely associated with non-participation in cervical cancer screening programs were young age, low family income, low schooling, living alone, and first childbirth after 25 years of age. A study of socio-demographic factors associated with non-participation amongst Taiwanese women by Wangi and Lin (2003) in which 40% of women sampled had never had a Pap smear and 86% did not have one in the past year, reported age as the strongest factor affecting cervical cancer screening, particularly for women below the age 30 and above 65 year olds. The study also found that, women with lower levels of education, who were unemployed, never-married and those who live outside the city tend to underuse Pap smear screening services (Wangi and Lin, 2003; Hayward and Swan, 2002). Regarding age, women aged 65 years and older were 13 times more likely not to have had a Pap smear in the past year, while women aged less than 30 years are more likely to have had a Pap smear test in the past 3years (Wangi and Lin, 2003). Hayward and Swan (2002) reported that age was the most important factor in determining Pap smear use with higher rates of participation among the middle aged group (40-60years). According to Hayward and Swan (2002), illiterate woman had the greatest risk of never having cervical cancer screening. Ndikom and Ofi,(2012) reported that typical estimates of the percentage of women who fail to utilize Pap smear screening services range from 30% to 44% and have been reported to be observed among younger women, those lacking health insurance, those with less than a high school education, and those that are unmarried women.

2.7 Theoretical framework

Health belief model

The health belief model is a psychosocial model (Stanhope and Lancaster, 1996) for studying and promoting the uptake of health services like screening. The model explains preventive behavior. The model assumes that belief and attitudes of people are critical determinants of their health-related actions. It holds that when cues to actions are present, the variations in uptake behavior can be accounted for by beliefs concerning four sets of variables. These include:

- i. The individual's view of own vulnerability to illness. If an individual does not see him or herself as being at risk of any problem, he or she will not seek care.
- ii. Belief about severity of the illness. The associated problem could be seen as minor therefore little attention will be required.
- iii. The person's perception of the benefits associated with action to reduce the level of threat or vulnerability.
- iv. The individual's evaluation of the potential barrier associated with the proposed action, this could be physical, psychological, financial and social.

The Three Major Components of Health Belief Model

The three major components of the health belief model are: individual perception; modifying factors; and variables affecting likelihood of action.

Individual perception: perception is the process of becoming aware of objects, qualities or relation by the way of sense organ. The individual's perception of being at risk of cervical cancer will motivate the person to seek preventive services.

Modifying factors: these are variables that change or improve likelihood of action. They include demographic variables, level of education, location of health facility, cost, mass media etc. They affect perception of threat; increased knowledge will result in correct perception of threat based on scientific knowledge of cervical cancer.

Likelihood of action: an individual will take action if he or she understands that there is a need and that the particular action will help in meeting the need. Also if barriers to the utilization of such services are minimized, the individual is likely to take action.

Since cervical cancer is not usually noticed until late stage the call to go for screening seems to be ignored. Some women may not consider it as important because they have other competing needs, while others may perceive screening as a needful preventive health behavior.

2.7 Conceptual Framework

A conceptual framework was developed to provide clear links between the dependent and independent variables as they relate to each other in this research. The relationship of knowledge on cervical cancer, accessibility of services, and the cost of services with the utilization of cervical cancer screening services by women of reproductive age have been diagrammatically presented in the conceptual framework, Figure 1.

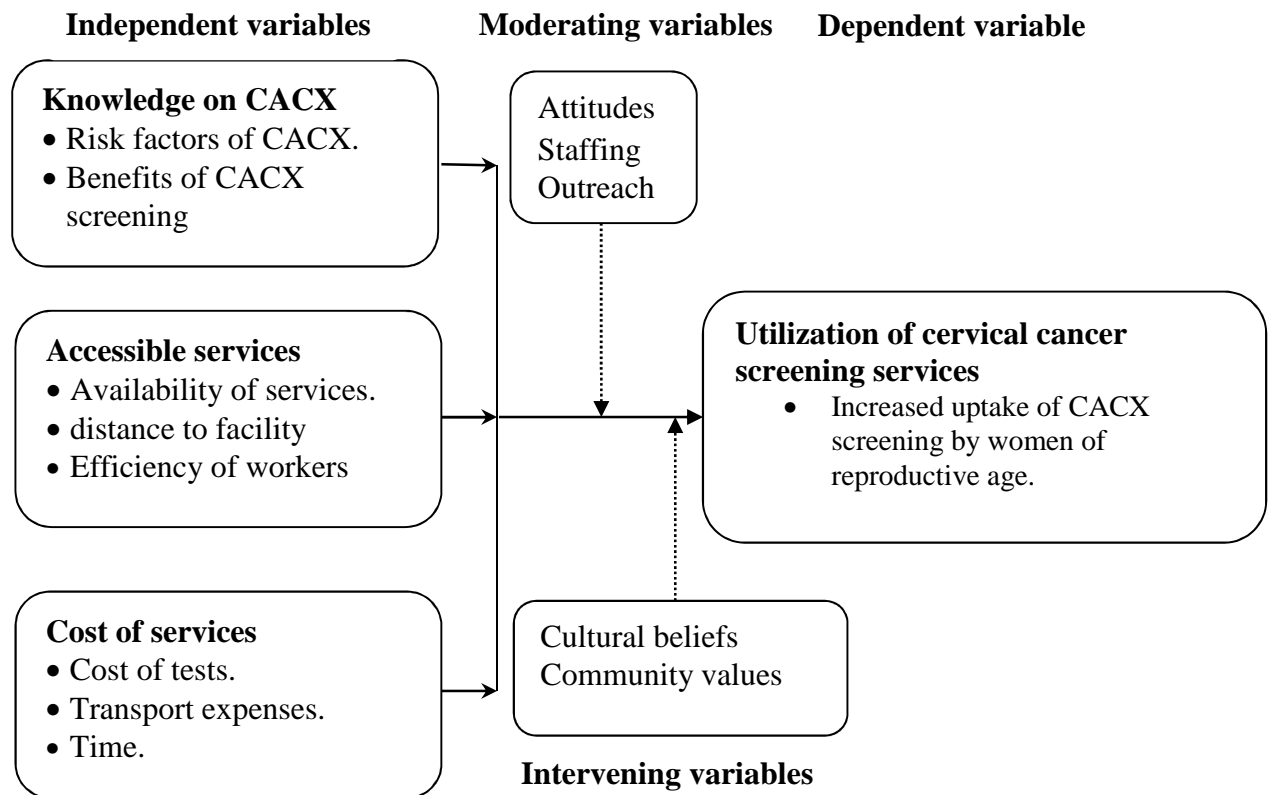


Figure 1: Conceptual Framework

The independent variables in this study indicate the factors influencing women to utilize cervical cancer screening services in Embu Hospital. As indicated in this conceptual framework knowledge about CACX can influence utilization of screening services if

most women know the risk factors associated with CACX and the benefits of screening for CACX. The cost the women incur for the whole screening process will influence the utilization of the screening services. Majority of women may come from places where they have to use public means, hence extra expenditure. Most of them live by the day and spending time outside the bread winning activity can only be triggered by presence of an illness that is visible on the spot. The services need to be available and accessible to be utilized. The moderating variables are the staff attitudes, availability of staff and provision of outreach services while the intervening variables are the cultural beliefs and community values.

2.8 Summary of Literature Review

The literature review includes factors that influence utilization of cervical cancer screening services globally narrowing to Embu County. The areas reviewed include an overview of cervical cancer screening, knowledge on cervical cancer, accessibility and the cost of services as an influence to utilization of cervical cancer screening services by women of reproductive age.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out the research methodology that was used to meet the research objectives of the study. The research design, population of interest, sampling procedures, and data collection methods and instruments and data analysis techniques are outlined.

3.2 Research Design

A descriptive survey was used in the description of the affairs of the current status of the variables in the study. A descriptive survey was appropriate for this study because it involved fact finding and enquiries. A cross-sectional descriptive study design was used as it generated quantitative data through self-administered questionnaires.

3.3 Target Population

The target population for this study comprised of all women of reproductive age in Embu County under the catchment area of Embu Hospital. The women population in this age bracket is 69080 according to Kenya census 2009 (Embu County census factsheet 2009).

3.4 Sample Size and Sampling Procedure

This section describes the strategies that were used to identify the main categories of respondents for the study. A sample is a smaller collection of units from a population used to determine truths about that population (Field, 2005). Sample size determination involves establishing the number of observations to include in a statistical sample while ensuring representativeness. Since the target population (69080) for this study is very large it is termed as infinite population. Therefore, sample size formula for infinite population was used to determine the sample size.

The following sample size formula for infinite population was used to arrive at a representative number of respondents (Godden, 2004)

$$SS = \frac{Z^2 \times p (1 - p)}{M^2}$$

Where:

SS= Sample Size for infinite population (more than 50,000)

Z = Z value (e.g. 1.96 for 95% confidence level)

P = population proportion (expressed as decimal) (0.1 (10%) since this would provide a representative sample size).

M = Margin of Error at 5% (0.05)

In this study the population proportion was given at 10% since it would provide a representative sample size for homogeneous population according to Mugenda & Mugenda (2003).

Z=1.96

P=0.1

M=0.05

SS=138

The sample size is for the study was 138 women of reproductive age.

Convenience sampling was used for the study. All women aged 18-49 years who were admitted in the gynecology ward during the period of data collection were approached to participate in the research.

The study also sought to establish the challenges faced by cervical cancer screening service providers and identify ways of dealing with these challenges to improve health care system performance. The hospital has 2 gynecologists, 2 nurses specifically working in the Pap clinic and 8 nurses in MCH/FP clinic which also does the screening and one laboratory technologist who reports on specimen findings. The entire 13 service providers were included for the study.

3.5 Data Collection Methods and Tools

Data was collected using a self administered structured questionnaire over a period of one month, April 2014. The questionnaire comprised of sections that looked at the socio-demographic characteristics, knowledge on cervical cancer screening services, knowledge on cervical cancer screening benefits, and barriers to seeking cervical cancer screening of respondents, accessibility and the cost of screening services. Qualitative data was also collected from service providers using open ended questions.

3.5.1 Reliability of the research instrument

Reliability refers to the consistence of scores obtained after repeated trials (Mugenda & Mugenda 2003). Reliability of the instrument was estimated by using the split half method. The questionnaire was pilot tested on a selected sample of 12 women patients in gynecology ward of Chuka hospital. Comments made by the respondents were used to improve the instrument in making it clear and understandable to the respondents.

The following Spearman Brown prophecy formula was used to calculate the reliability coefficient:

$$\text{Reliability of scores on total test} = \frac{2 \times \text{reliability for } \frac{1}{2} \text{ tests}}{1 + \text{reliability for } \frac{1}{2} \text{ tests}}$$

3. 5.2 Validity of the instruments

The questionnaire was well structured to ensure that the questions remained focused, accurate and consistent. This was done through wide consultation between the researcher and the university supervisors giving guidelines. Peer proof reading was used to ensure both face and content validity of the instruments. This helped in assessing the appropriateness, the meaningfulness and usefulness of the instrument in meeting the purpose of the study.

3.6 Data Analysis

The data in the questionnaires was checked for completeness. The data was done cleaning and sorting to eliminate obvious inaccuracies and omissions. The information was then coded into the respective categories illustrating the various themes. This data was then entered into computer for analysis using statistical package for social sciences (SPSS) and Excel. Descriptive statistics specifically tables have been used to present the findings.

3.7 Ethical considerations

Permission was sought from the ethical and research Committee University of Nairobi (UON) for approval to conduct the study. Clearance was sought from the National Commission for Science, Technology and Innovation to conduct the study.

Permission was sought from Embu Hospital Medical Superintendent before initiating the actual research data collection. The data collection forms did not bear the name of the facility, client or patient's name; they were identified by a study identity code number. Respondents were assured that data collected from them was to be used with strict confidentiality and for the sole purpose of meeting the objectives of this study.

Informed consent was sought from the study participants and those not willing to participate in the research process were not compelled to participate.

3.8 Operational definition of variables

Indicators are denoted by the main variables in order to render them measurable as shown in Table 3.1.

Table 3.1 Operationalization of variables

Objectives	Variables	Indicators	Measurement	Scale	Data collection method	Data analysis
To establish how knowledge on cervical cancer influence utilization of cervical cancer screening services among women of reproductive age in Embu hospital.	Knowledge on cervical cancer	Risk factors of CACX. Benefits of CACX screening	Knowledge of 6 Risk factors of CACX, 3 benefits of CACX screening	Nominal ordinal	questionnaire	Descriptive statistics
To establish how accessibility of cervical cancer screening services influence their utilization by women of reproductive age in Embu hospital.	Accessible services	Availability of services. Distance to facility Efficiency of workers. Skilled health providers Infrastructure such as outreach clinics	Accessibility to nearest health facility offering CACX screening services	ordinal	questionnaire	Descriptive statistics
To establish how the cost of cervical cancer screening services influence their utilization by women of reproductive age in Embu hospital.	Cost of services	Screening charges Transportation costs, Time it takes to receive results, waiting time to be served. Treatment cost	Cost of screening, waiting time to be served and to obtain results, cost of treatment	ordinal	questionnaire	Descriptive statistics

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents a detailed presentation of the data analysis, presentation and interpretation of the data collected from respondents. The chapter also provides the major findings as well as results of the research.

4.1.1 Response rate

The study targeted a sample size of 138 respondents from which 132 filled and returned the questionnaire making a response rate of 95.7% (table 4.1). The response rate was excellent and representative and conforms with Mugenda and Mugenda (1999) stipulation that a response rate of over 70% is excellent. The response rate for the service providers was excellent as 92% (12) service providers returned the questionnaire fully completed.

Table 4.1: Response rate

Response rate	Frequency	Percentage
Responded	132	95.7
Non-response	6	4.3
Targeted	138	100
Service providers		
Responded	12	92.3
Non-response	1	7.7
Targeted	13	100

4.2 Demographic Information

The study sought to establish the background information of the respondents including respondent's age, education level, marital status and occupation.

4.2.1 Respondents Age

Table 4.2 shows the age of respondents

Table 4.2: Respondents Age

Variables	N=132	
Age in Years	Frequency	Percentage
18 -25	15	11.4
26 -33	82	62.1
34 -41	20	15.1
42 -49	15	11.4
Total	132	100

Most of the respondents (62.1%) were aged between 26 -33 years. The mean age of the respondents was 31.6 years (range 18-49 years).

4.2.2: Respondents Marital Status

On the marital status of the respondents the findings are shown in Table 4.3.

Table 4.3: Marital Status

Marital Status	Frequency	Percentage
Married	90	68.2
Window	6	4.5
Single	27	20.5
Divorced/separated	9	6.8
Total	132	100

Most of the respondents (68.2%) were married; the remainder were single (20.5%), divorced (6.8%) and widowed (4.5%). The fact that majority of respondent (79.5%) were currently married or they were once married indicates that they were sexually active at one point in time which could have exposed them to cervical cancer.

4.2.3 Respondents Education Level

Their educational level varies from primary education to tertiary level as shown in Table 4.4.

Table 4.4: Respondents Education Level

Educational Level	Frequency	Percentage
Primary	36	27.3
Secondary	54	40.9
college	36	27.3
university & above	6	4.5
Total	132	100

The results indicate that those with secondary level of education were the majority 40.9%, with tertiary education 31.8% and with primary education were 27.3%. This shows that most respondents were learned and possibly aware of the subject under study.

4.2.4 Occupation of the respondents

Table 4.5 shows the respondents occupation.

Table 4.5: respondents occupation

Occupation	Frequency	Percentage
Farming	45	34.1
Teaching	24	18.2
Business	30	22.7
Civil servants	18	13.6
Housewife	15	11.4
Total	132	100

Most of the respondents were farmers (34.1%); (31.8%) were employed as teachers or in the civil service; others were self-employed (22.7%) and 11.4% were house wives. The results indicate that most of the respondents had some source of income.

4.3 Level of knowledge about cancer of the cervix

The study sought to find out the respondents knowledge about cancer of the cervix

4.3.1 Ever heard of cancer of cervix

Table 4.6 illustrates the number of respondents who had ever or never heard about cancer of the cervix.

Table 4.6: Ever heard of cancer of cervix

Ever heard of cancer of cervix	Frequency	percentage
Yes	102	77.3
No	30	22.7
Total	132	100

Majority 77.3% of the respondents had ever heard about cancer of the cervix while 22.7% had not heard about it.

4.3.2 History of cervical cancer in the family

Table 4.7 Illustrates History of cervical cancer in the family.

Table 4.7: History of cervical cancer in the family

History of cervical cancer in the family	Frequency	Percentage
Yes	12	9.1
No	120	90.9
Total	132	100

Table 4.7 shows that majority of the respondents 90.9% did not have any history of cancer of the cervix in their family and only 9.1% had a history of cancer of the cervix in their family.

4.3.3 Knowledge about cervical cancer screening procedures

The respondents were asked if they knew of any procedure(s) used for cervical cancer screening. The responses are shown in Table 4.8.

Table 4.8: Cervical Cancer Screening Procedures

Cervical Cancer Screening Procedures	Frequency	Percentage
Yes	54	41
No	78	59
Total	132	100

According to the findings, the majority of respondents 59% did not know of any cervical cancer screening procedures.

4.3.4 Screening procedure known

On which screening procedure (s) were known, the following Table 4.9 shows the findings. Some of the respondents knew more than one screening procedure.

Table 4.9: Known cervical cancer screening

Known cervical cancer screening procedures	Frequency	Percentage
Pap smear test	48	64
Visual inspection using Acetic acid (VIA)	12	16
Visual inspection using Lugol's Iodine (VILI)	12	16
Colposcopy	3	4
Total	75	100

Table 4.9 shows that majority of respondents 64% knew about Pap smear test; 32% knew about VIA and VILI tests and only 4% knew about colposcopy all of which are cervical cancer screening procedures. This shows that 64% of those who said they knew about CACX screening they actually knew of the most commonly used screening procedure which is Pap smear.

4.3.5 Age to begin cervical cancer screening

The study sought to find out at what age one should begin being screened for CACX. Table 4.10 illustrates the results.

Table 4.10: Age to begin cervical cancer screening

Age to begin cervical cancer screening	Frequency	Percentage
18 years	54	41
After menopause	3	2.3
When one gets symptoms of cancer of the cervix	6	4.5
When one gets a sexually transmitted infection	3	2.3
When one becomes sexually active	21	15.9
I do not know	45	34
Total	132	100

41% of the respondents said at 18 years, 15.9% said when one becomes sexually active while 34% said they did not know the right time to start the screening for CACX. The findings also indicate that 9% of the respondents thought that one should be screened after menopause, when one gets symptoms of cancer of the cervix, or when one gets a sexually transmitted infection which is not the right time to begin screening for CACX and thus this could be a reason why they delay being screened.

4.4 Ever done cervical cancer screening

The study sought to find out if the respondents had ever done cervical cancer screening as illustrated in Table 4.11.

Table 4.11: Ever done cervical cancer screening

Ever done cervical cancer screening	Frequency	Percentage
Yes	48	36.4
No	84	63.6
Total	132	100

Majority of respondents 63.6% had never done CACX screening while only 36.4% had been screened.

4.4.1 Age first did cervical cancer screening

The mean age at which the respondents went for the first screening was 29 years. Table 4.12 shows the results

Table 4.12: Age at which the respondents first did cervical cancer screening

Age first did cervical cancer screening	Frequency	Percentage
18-25	21	43.75
26-33	12	25
34-41	12	25
42-49	3	6.25
Total	48	100

Most respondents (68.75%) who had done CACX screening did it aged 18-33 years. This was good as most cervical changes are noted around this age range of 18-35 years.

4.4.2 Reasons for going for CACX screening and frequency of testing

Table 4.13 illustrates the reason for going for CACX screening and frequency of testing.

Table 4.13: Reason(s) and frequency of screening

Reason(s) for screening	Frequency	Percentage
preventive measure	27	56.25
diagnostic purposes	0	0
health worker's recommendation	9	18.75
was using IUCD, or oral contraceptives	12	25
Total	48	100

Frequency of doing the screening	Frequency	Percentage
Yearly	23	48
Every two years	4	8.3
Every three years	4	8.3
Have been screened only once in my life time	17	35.4
Total	48	100

Among those who had ever gone for CACX screening, majority had the CACX screening done as a preventive measure 56% while 18.7% did the CACX screening because a health worker recommended they do the test. To 25% it was done because the respondent was using IUCD or oral contraceptives, while none did it for diagnostic purposes.

Among those who had been screened, 48% said they do the test yearly, 35.4% had done the test only once in their life time, while 16.6% do it every two or three years. This illustrates that at least 64.6 % of respondents who had been screened, did the screening as per WHO recommendations on cervical cancer screening (WHO, 2010).

4.4.3 Association between cervical cancer screening status of respondents and socio-demographic characteristics.

Table 4.14 illustrates association between cervical cancer screening status of respondents and socio-demographic characteristics.

Table 4.14 Association between cervical cancer screening status and socio-demographic characteristics

Socio-demographic characteristics	Cervical cancer screening				Group Total	Statistic (χ^2)
	yes n	%	No n	%		
	48	36.4%	84	63.4%	N=132	
Age in years						
18-33	33	68.75	64	76.2	97	$\chi^2 = 0.85$
34-49	15	31.25	20	23.8	35	
Total	48	100	84	100	132	
Marital status						
Married	36	75	54	64.3	90	$\chi^2 = 5.54$
Single	9	18.75	18	21.4	27	
Window	0	0	6	7.1	6	
Divorced	3	6.25	6	7.1	9	
Total	48	100	84	100	132	
Education level						
Primary	3	6.25	33	39.3	36	$\chi^2 = 11.30$
Secondary	24	50	30	35.7	54	
College	18	37.5	18	21.4	36	
University	3	6.25	3	3.6	6	
Total	48	100	84	100	132	

As can be seen in table 4.14, when cervical cancer screening status (ever done and never done) was cross tabulated with socio-demographic characteristics of the respondents, there result shows that there was a significant (positive) association between ever screening for cervical cancer with level of education ($\chi^2 = 11.30$); and there was no significant association between ever screening for cervical cancer with age ($\chi^2 = 0.85$) and ever screening for cervical cancer and marital status of the women ($\chi^2 = 5.54$).

4.5 Knowledge on risk factors associated with cervical cancer

Table 4.14 shows respondents knowledge on risk factors associated with cervical cancer.

Table 4.15: Knowledge on risk factors associated with cervical cancer

Risk factors associated with cervical cancer	True	%	False	%	Don't know	%	Total
sexually transmitted infections	42	31.8	12	9.1	78	59.1	132
Poor Personal hygiene	27	20.5	30	22.7	75	56.8	132
First pregnancy at early age(below 18years)	18	13.6	33	25	81	61.4	132
Contact with relative with cervical cancer	24	18.1	42	31.8	66	50	132
Positive family history of cervical cancer	36	27.3	27	20.4	69	52.3	132
Early age of first sexual intercourse (below 16years)	36	27.3	15	11.3	81	61.4	132
High parity (more than 8 pregnancies)	9	6.8	30	22.7	93	70.5	132
Menopausal women over 55 years of age	18	13.6	33	25	81	61.4	132
Many sexual partners	51	38.6	12	9.1	69	52.3	132
Cigarette smoking	45	34.1	21	15.9	66	50	132
Contraceptives	30	22.7	30	22.7	72	54.6	132
HIV/AIDS	15	11.3	30	22.7	87	66	132
Mean percentage		22.1		19.9		58	

Of the 132 respondents (31.8%) of them agree that sexually transmitted infections are risk factors associated with cervical cancer while 59% of them did not know that sexually transmitted infections are risk factors associated with cervical cancer. Similarly (38.6%) agreed that the risk of cervical cancer is greater amongst women with multiple sexual partners while 56% did not know this was a risk factor. On whether cervical cancer occurs only on

menopausal women, 61.4% of them did not know whether this was a risk factor to CACX; however 25% said it was not a risk factor. On whether early age of first sexual intercourse (below 16years) was a risk of cervical cancer, 27.3% agreed whereas majority 61.4% responded they did not know it was a risk factor to CACX. On whether HIV/AIDS is a risk factor, majority of them 66% responded not sure and only 11.3% were sure that HIV/AIDS is a risk factor to CACX. Regarding high parity (more than 8 pregnancies), majority of the respondents 70.5% responded not sure and 22.7% thought it was not a risk factor associated with CACX. 34.1% and 27.3% of respondent agreed that cigarette smoking and Positive family history of cervical cancer are risk factors associated with CACX respectively as revealed in Table 4.15 above. These finding indicate that most (78%) of the respondent were not aware of the most common risk factors to CACX.

4.5.1 Correlation analysis on cervical cancer screening and knowledge of risk factors associated with cervical cancer.

Pearson's correlation analysis was computed to determine whether there was any correlation between knowledge of risk factors and doing the cervical cancer screening. The results revealed a strong negative correlation (-0.756) .This indicates that majority of respondents are not doing the cervical cancer screening because they are not aware of the risks factors associated with cancer of cervix.

4.6 Knowledge on benefits of cervical cancer screening

Table 4.16 provides information on the rating of the benefits to cervical cancer screening. Overall, the majority of the participants responded positively to statements about benefits of cervical cancer screening as shown in Table 4.16.

Table 4.16: Benefits of cervical cancer screening

Benefits of cervical cancer screening	N=132					
	Agree	%	Disagree	%	Not Sure	%
A woman will know if she is healthy	99	75	0	0	33	25
Screening will find changes in the cervix before they become cancer	75	56.8	6	4.5	51	38.6
Cervical changes found early are easily curable.	87	65.9	6	4.5	39	29.5
May improve the chances of an infertile woman becoming pregnant	18	13.6	18	13.6	96	72.7
May decrease the chances of a woman having an abortion.	6	4.5	33	25	93	70.4

75% of the respondents agreed that screening is important to be done as a woman will know if she is healthy, 57% believed screening could find changes in the cervix before full cancer sets on; 66% believed when found early cervical cancer can be easily cured. On the other hand, very few 14% and 4.5% believed cervical cancer screening improves chances of pregnancy and decreases abortion, respectively. However majority 72% and 70.4% were not sure if cervical cancer screening improves chances of pregnancy and decreases abortion, respectively.

4.6.1 Correlation Analysis

Pearson's correlation analysis was computed to determine whether there was any correlation between knowledge on benefits of doing the cervical cancer screening and actually doing the screening. The results revealed a strong negative correlation (-0.945)

.This indicates that though majority of respondents are aware of the benefits of doing cervical cancer screening this does not translate to doing the screening of cancer of cervix.

4.7 Barriers to seeking cervical cancer screening

Table 4.17 gives a summary of the responses to perceived barriers to cervical cancer screening.

Table 4.17: Barriers to cervical cancer screening

Barriers to cervical cancer screening	Agree	Percentage	Disagree	Percentage
Lack of information about cervical cancer screening procedures	78	76.4%	24	23.5%
It is too embarrassing to do cervical cancer screening.	57	55.9%	45	44.1%
Cervical cancer screening is painful.	66	64.7%	36	35.3%
The exam is for the sick persons	45	34.1%	57	55.9%
Doing cervical cancer screening will only make one worry.	66	64.7%	36	35.3%
Only women who have had babies need to do cervical cancer screening.	36	35.3%	66	64.7%
Not knowing where to go for cervical cancer screening is a reason why people don't do cervical cancer screening.	78	76.4%	24	23.5%
Lack of female screeners in health facilities is a reason for not doing cervical cancer screening.	51	50%	51	50%
Attitudes of health workers can discourage one from going for cervical cancer screening	60	58.8%	42	41.2%
Lack of convenient clinic time is a barrier to routine cervical cancer screening.	63	61.8%	39	38.2%
The tests are very expensive.	69	67.6%	33	32.3%
Services are offered at the big hospitals which are far and it is expensive to reach there	54	52.9%	48	47.1%
Belief that cervix is part of sexual organ and private	69	67.6%	33	32.3%
My partner will not want me to do cervical cancer screening.	48	47.1%	54	52.9%

The results show that most participants believe that: Lack of information about cervical cancer screening procedures is a barrier (76.4%), Not knowing where to go for cervical cancer screening is a reason why people don't do cervical cancer screening (76.4%), The tests are very expensive (67.6%), doing cervical cancer screening does make one to worry (66.7%), Cervical cancer screening is painful (64.7%), doing cervical cancer screening is embarrassing (56%). Others said that lack of convenient clinic time is a barrier to routine cervical cancer screening (62%); Attitudes of health workers can discourage one from going for cervical cancer screening (59%) while (67%) believe that cervix is part of sexual organ and private and thus do not go for screening. However 52% responded that their partner will not be a hindrance to them and 64% also disagreed that only those who had had babies need to be screened. In general, most participants agreed about the statements on perceived barriers to cervical cancer screening as shown in table 4.17 above.

When correlation analysis was done, a perfect negative correlation (-1) was found between doing the screening and the barriers statements given. This indicates that there is a strong relationship between not doing the cervical cancer screening and the mentioned barriers thus the barriers may be contributing to underutilization of cervical cancer screening services

4.8 Accessibility to cervical cancer screening services

Table 4.18 shows the distance from the respondent's home to the nearest health facility offering cervical cancer screening.

Table 4.18: Distance in Kilometers (Km) between home and facility

Distance in Kilometers (Km)	Frequency	Percentage
Less than 1 Kilometer	23	17.4
1Km to 2 Km	21	15.9
2-3Km	10	7.6
3-4Km	12	9.1
More than 4Km	30	22.7
Not sure	36	27.3
Total	132	100

A shown in table 4.18, 50% of the respondents live within a distance of less than 4Km to the nearest health facility that offers cervical cancer screening, 22.7% live more than 4 Km while 27.3% were not sure of the distance from their home to the nearest health facility that offers cervical cancer screening. The results indicate that at least half of the facilities could be accessed on foot as the distance was less than 4 Km.

4.9 The cost of screening

Table 4.19 shows the cost of doing CACX screening as responded by participants.

Table 4.19: Cost of doing CACX screening

Cost in KShs.	frequency	Percentage
100-500	30	22.7
501-1000	39	29.5
More than 1000	27	20.5
Do not know	36	27.3
Total	132	100

52% of respondents said it cost them between KShs 100 to 1000 to do the tests, 20% of them said it costs them more than 1000shs while 27% said they do not know how much it would cost to do the test. The disparity in cost of screening was evident due to different forms of screening available that cost differently and cost of transport were also included.

4.10 Time it takes to receive results

Table 4.20 present the respondents' responses when asked how long it took to receive results once the test was been done.

Table 4.20: Time it takes to receive results

Time	frequency	Percentage
Less than 1 hour	18	37.5
1 week	14	29.2
2 weeks	12	25
More than 2 weeks	4	8.3
Total	48	100

Only the 48 respondents who had undergone the test before responded. 37.5% reported that they received their results within an hour, 29.2% within one week, and 25% of them in two weeks while 8.3% got their result after two weeks. The findings indicate that different screening methods take different time for the results to be out.

The study also sought to establish the challenges faced by cervical cancer screening service providers and identify ways of dealing with these challenges to improve health care system performance.

The response rate of service providers was 92% (12 out of 13). The following challenges were identified by the service providers. All respondents (100%) cited lack of adequate knowledge about cervical cancer and cervical cancer screening as the biggest challenge. 92% (11) of respondents said poor/negative attitudes of some health care providers and patients towards the cervical cancer screening was a challenge. Patients presenting in late stages of the disease and financial constraints to cater for treatments was cited by 100% of the respondents.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings, the discussion of key findings, conclusions drawn from the findings and recommendations made there-to. The conclusions and recommendations drawn were focused on addressing the objectives of the study.

5.2 Summary of Findings

The study revealed that 77% of women had heard about cervical cancer; 59% did not know of any cervical cancer screening test while 41% knew of at least one screening test. The study also revealed that 57% of participants knew of when to start doing cervical cancer screening although the uptake was low with only 36% of them having undertaken the screening.

Concerning the risk factors to cancer of cervix majority of respondents (78%) did not know of most of the common risk factors associated with CACX. The study results show that majority of women (66%) knew of the benefits of CACX screening, however 76% of them reported that lack of CACX screening information and where to go for screening was a barrier to uptake of CACX screening.

Most of the facilities offering CACX screening were accessible as 50% of them were within walking distance of less than 4 Kilometers however another 53% of respondents reported that screening services are only offered in big hospital which are far to reach especially when one is not sick. The study also revealed that 76.4% of the respondents did not know where screening services were offered.

The cost of screening varied from 100 -1000 shillings in 52% of respondents, to more than 1000 shillings in 20.5% of the respondents. 67.6% of respondents reported it was expensive to do the tests. 61.8% of respondents reported they lacked time to go and do the test as the clinic time was not convenient to them.

5.2.1 Key challenges identified by the service providers

The following challenges were identified by the service providers. They included limited knowledge about cervical cancer and cervical cancer screening, poor attitudes of some health care providers and patients towards the cervical cancer screening, presenting in late stage of the disease and financial constraints to cater for screening and treatment.

Inadequate knowledge about the disease

The service providers reported receiving patients who had limited knowledge about cervical cancer screening. The patients were reported not to be aware of the disease signs and symptoms as well as interventions available.

Low screening levels

Even though screening is integrated in the Maternal Child health care and Family Planning clinics, and another clinic set up specifically for Pap smear screening, the screening coverage remains low. Thus many felt that more can be done to mobilize women to seek screening services. Use of the vernacular FM radio stations plus the other national stations was identified as a big opportunity in campaigning for screening.

Poor attitude towards cervical cancer screening procedure

Health care workers reported that many clients find the screening procedure too invasive and it is viewed as embarrassing and against the African culture. Some women find it culturally unacceptable to have young nurses and doctors see their private parts. Others felt that it was culturally unacceptable to allow a male to see their private parts. They reported that even among health care workers, screening is still seen as an uncomfortable procedure associated with risk of infections.

Patients presenting in late stage of cervical cancer

The service providers reported that patients came for screening when it was too late to help with any treatment interventions and the challenge was to disclose the bad news to the patient without offering any hope for cure.

Lack of finances to cater for treatment costs

This was reported as a challenge when patients were screened and found to have a positive result for cancer of the cervix. Inability of the patients to pay for cervical cancer treatment was attributed to the poverty of most patients as well as the high cost of chemotherapy and radiotherapy. These treatments are also not provided in the hospital and patients have to be referred to other hospitals like Kenyatta National Hospital (KNH).

5.3 Discussion of key findings

The discussions of the findings of the study are given following the objectives of the study.

5.3.1 Knowledge about cervical cancer

In many developing countries, women's knowledge of cervical cancer is very limited (Amarin *et al.*, 2008) It has been demonstrated that the vast majority of women in some countries had not heard of cervical cancer and even more knew nothing about cervical screening (Wong, 2009; Kindanto *et al.*, 2002). However this study had contrasting results whereby the majorities were aware of cervical cancer and Pap smear test. The awareness about cervical cancer was 77% among the participants. This high awareness level could be attributed to the study population being literate as majority of them (73%) had secondary level of education and above. This study further sought to find out if the respondents knew what screening procedures were available and only 41% of them knew of various screening procedures. However, this is in contrast to a study done in Kasarani, Kenya which found out that 80% of study participants knew of Pap smear as a screening test (Ombechi *et al.*, 2009).

The study revealed that only 36% of the respondents had actually done cervical cancer screening. This cervical cancer screening rate is far too small and does not reach the Ministry of Health goal of screening at least 75% or more of eligible women for cervical cancer. A similar study on utilization of cervical cancer screening conducted in Nyeri, Kenya by Githogo found that only 24%% of study participants had ever been screened (Githogo, 2012). Likewise another study by Ombechi on cervical cancer screening uptake in Kasarani found that only 21% of study participants had ever had Pap smear tests

(Ombechi *et al*, 2009). This finding of low uptake of cervical cancer screening is consistent with most other studies done in less developed countries which reported a participation rate of between 23% and 40% (Chidiebere., 2009; McFarland., 2003). There is therefore need to increase awareness for the need of being screened as a measure to preventing cervical cancer.

The study established that most of the study participants were not aware of the risk factors associated with cervical cancer. Only 22% of the participants could name two risk factors and the rest 78% did not know of the risk factors associated with cervical cancer. The fact that most respondents did not know of the risk factors to cervical cancer could be associated to low participation in CACX screening as most women may not consider themselves susceptible to CACX. Studies done by Chidiebere (2009) and Agurto *et al* (2004) found that respondents were aware that cervical cancer is common in HIV positive women and those with multiple sexual partners. These findings are in contrast with this study finding that revealed that respondents were not aware that cervical cancer is more common to women who are HIV positive and since there is an association between multiple sexual partners and HIV positive, the risk is also higher among women with multiple sexual partners. From this, recommendation can be made that increasing routine HIV testing as well as education on the association of multiple sexual partners with HIV positive status and cervical cancer can increase cervical cancer screening uptake.

The study also revealed that most respondents whether screened or never screened overwhelmingly agreed that it is important to do cervical cancer screening (67%). Therefore, knowledge about the benefits of doing cervical cancer screening was not a significant barrier. This is consistent with studies in which the majority of subjects agreed that regular Pap smear screening will give them peace of mind, find a problem before they become cancer and it is very necessary even if there is no family history of cancer (Leyva *et al.*, 2006). The findings established that respondents in this study believed that it was important to do cervical cancer screening as it could find changes in the cervix before they become cancer (75%) and it could easily be cured when found early (66%).

These reasons are consistent with findings of other studies (Chidiebere, 2009; Bessler et al., 2007; and Agurto et al., 2004).

Most respondents did agree with listed perceived barriers to cervical cancer screening. This study results revealed that most participants believe that: Lack of information about cervical cancer screening procedures is a barrier (76.4%), Not knowing where to go for cervical cancer screening is a reason why people don't do cervical cancer screening (76.4%), The tests are very expensive (67.6%), doing cervical cancer screening does make one to worry (66.7%), Cervical cancer screening is painful (64.7%), doing cervical cancer screening is embarrassing (56%), and lack of convenient clinic time is a barrier to routine cervical cancer screening (62%). These findings are completely in keeping with previous studies that reported many barriers among the ever screened for cervical cancer and the never screened for cervical cancer like pain, lack of convenient clinic times, lack of information, not knowing where to go for cervical cancer screening, too embarrassing to do cervical cancer screening, (Bessler *et al.*, 2007; Leyva *et al.*, 2006; Agurto *et al.*, 2004, and Flyan, 1998,).

5.3.2 Accessibility and cost of cervical cancer screening

The study established that 70% of participants knew of facilities offering cervical cancer screening and for 50% of them the facilities were within reach as the distance from their home was less than 4 Km. This reveals that screening services are accessible and is in contrast to study by Gatune and Nyamongo(2005) which reported the low uptake of CACX screening was attributed to inaccessibility of the services. Most participants (52%) reported that the screening cost was as low as 100 Kenya shillings which are affordable. However it is disappointing that though the services are accessible and affordable few women are utilizing them.

5.3.3 Poor attitude towards cervical cancer screening procedure

Cervical cancer screening is a procedure which involves opening the vagina using a speculum with the woman lying on lithotomic position and taking a sample of cells from the cervix. The procedure may be too invasive to privacy to some women. This study found that screening procedure has been viewed negatively by both clients and some

health care workers. Cultural, personal and procedural factors were associated with the negative attitudes. Generally the traditionally African culture dictated that women expose their private parts only to their spouses and female midwives. Age and sex differences between the cervical cancer screening providers and women who may require cervical cancer screening may be a hindrance to the screening practice. The results support a study done in United Kingdom which revealed that women found the whole practice of cervical cancer screening embarrassing, uncomfortable and too intimate especially in exposing such personal parts of their body (Bingham, et al., 2003; Goldsmith, et al., 2007). This embarrassment, discomfort and the exposure may be the reason behind low number of women undergoing screening. A number of women dislike the procedure hence acceptability of the procedure by the women is a big factor in success or failure of screening programs. The results of this study however contradicted Claeys (2003) who found that women had positive attitude towards screening. Huchko et al. (2011) revealed positive attitudes towards cervical cancer screening among HIV positive women in Kenya while Audet et al. (2012) found that 84% of rural women in Mozambique were willing to undergo cervical cancer screening.

5.4 Conclusion

This study concluded that awareness about cervical cancer was high among the women in Embu; however the knowledge of cervical cancer screening and cervical cancer risk factors were low despite high literacy rates among the women. Barriers such as lack of information about cervical cancer screening procedures, not knowing where to go for cervical cancer screening and thinking that cervical cancer screening is painful were sighted as the reasons why people don't do cervical cancer screening.

The study revealed that cervical cancer screening services were available, affordable and accessible. Therefore accessibility or cost of the screening service would not be considered as a factor as to why women are not utilizing the cervical screening service.

5.5 Recommendations

Based on the findings of this study, the following recommendations are suggested:

1. Cervical cancer screening rates have remained low and needs to be improved through creating awareness on the risk factors and educating eligible women about availability of cervical cancer screening and usefulness of doing cervical cancer screening. We recommend that the Government of Kenya, through the ministry of health should acknowledge and recognize that cervical cancer is a major public health concern and accord its prevention and treatment priority in resource allocation. Creating awareness and educating eligible women should be done through the media, women groups and chiefs barazas and should target both men and women in the communities.
2. Doctors and nurses should also intensify health education on cervical cancer screening during every clinical contact. The education curricula of nurses and doctors should incorporate promoting cervical cancer screening and treatment so graduates can increase awareness and encourage their clients to participate in the cervical cancer screening program.
3. There is a critical need to intensify mass education on risk factors for the disease, to inform them of the role of HPV in HIV-infected women and to promote both HIV screening and regular cervical screening. The Embu County Ministry of Health should also consider outreach awareness creation and screening camps in order to take the services closer to the community instead of waiting for the women to come for the services at the hospitals.
4. Cervical cancer screening and treatment should be incorporated into the Maternal Child Health program and accorded the same priorities as those of HIV/AIDS, childhood immunizations, malnutrition, malaria, and tuberculosis. The HPV vaccines, for example (Gardasil and Cervarix), recombinant vaccine that targets and protects against the HPV strains that cause cervical cancer, should be offered

to females between 9 and 26 years old through the Kenya Expanded Program on Immunization (KEPI).

5. Efforts should be made to inform legislators and leaders that polygamous practice increases the risk of HPV infections in women which predispose them to cervical cancer.
6. It is important to develop a national policy on cervical cancer screening and treatment and there is need for a multi-sectoral approach in addressing cervical cancer situation, which should involve the Ministry of Health (Policy makers), training institutions, hospitals, communities and their leaders, families and individuals.

5.6 Suggestion for further studies

Since accessibility and non-affordability of screening services were not found to be contributing to low uptake of cervical cancer screening, the reasons for low uptake needs to be explored and addressed further through a qualitative study. Perhaps this could address the root cause(s) of the low uptake seen in this population.

There is need to do a study on cervical cancer managers challenges to managing cervical cancer patients.

A more intensive and large scale study need to be done to covering the whole Embu County to allow for generalizability of results.

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APPENDICES

Appendix I Letter of Transmittal

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10TH MARCH 2014

THE MEDICAL SUPERINTENDENT
EMBU P.G. HOSPITAL

P.O.BOX 33,

EMBU

Dear Sir,

RE: RESEARCH ON FACTORS INFLUENCING UTILIZATION OF CERVICAL
CANCER SCREENING SERVICES IN EMBU HOSPITAL, EMBU COUNTY,
KENYA.

I am a post graduate student at the University of Nairobi pursuing a Master of Arts degree in Project Planning and Management. I am undertaking a research on the above mentioned topic in Embu Hospital. The gynecology ward has been selected for the study. Information got from the study will only be used for the purposes of this study and will be treated with utmost confidentiality. The researcher also affirms that the subjects used in the study will be identified using codes and no names will be used. Your co-operation in allowing the researcher collect data in the above mentioned work station will be highly appreciated. The final report will be given to you to see the findings, conclusions and any recommendations.

Yours faithfully,

Jedidah W. Kibicho

Appendix II: Questionnaire

Respondent Consent

The nature and kind of study has been explained to me by the researcher. I understand the information I give shall be accorded the necessary confidentiality to benefit the study purposes. I will answer the questions as honestly as possible.

Signed..... Date.....

Study code number _____

Instructions: tick or fill the appropriate response(s)

Demographic data

1. Age (years) _____
2. Occupation _____
3. Marital Status: Married Widowed
Single divorced/separated
4. Level Of Education
 - a) None
 - b) Primary
 - c) Secondary
 - d) college
 - e) university

Level of knowledge data

- 1) Ever heard of cancer of the cervix?
Yes
No

2) Is there any history of cervical cancer in your family?

Yes

No

3) What risk factors associated with cervical cancer do you know?

Risk factors associated with cervical cancer	True	False	Don't Know
a) Sexually transmitted infections(STD/STI)			
b) Poor Personal hygiene			
c) First pregnancy at early age(below 18years)			
d) Contact with relative with cervical cancer			
e) Positive family history of cervical cancer			
f) Early age of first sexual intercourse (below 16years)			
g)High parity (more than 8 pregnancies)			
h) menopausal women over 55 years of age			
i) Many sexual partners			
j) cigarette smoking			
k) Contraceptives			
l) HIV/AIDS			

4) Do you know about any cervical cancer screening procedure?

Yes

No

5) If yes, which one?

- a) Pap smear test.
- b) VIA(Visual inspection using Acetic acid)
- c) VILI(Visual inspection using Lugol's Iodine)
- d) Colposcopy
- e) Biopsy
- f) Others.

6) When should one start screening for cervical cancer?

- a) From 18 years and above
- b) After menopause.
- c) When one gets symptoms of cancer of the cervix
- d) When one get a sexually transmitted infection.
- e) when one becomes sexually active
- f) I do not know

7) Do you go for cervical cancer screening?

Yes No

If Yes,(answer questions 8 to 10,) (If No move to question 11)

8) What was the reason for going for cervical cancer screening?

- a) preventive measure
- b) diagnostic purposes
- c) health worker's recommendation
- d) I know I need regular checkups including pap test
- e) was using IUCD, or oral contraceptives
- f) Others (specify)

9) At what age did you first go for cervical cancer screening?

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10) How often do you go for cervical cancer screening?

- a) Yearly
- b) Every two years
- c) Every three years.
- d) Have been screened only once in my life time.
- e) Others specify

11) What benefits of cervical cancer screening do you know?

	Benefits of cervical cancer screening	Strongly Agree	Agree	Disagree	Strongly disagree	Don't Know
1	It is important for a woman to have cervical cancer screening to know if she is healthy					
2	Cervical cancer screening can find changes in the cervix before they become cancer.					
3	If cervical changes are found early from cervical cancer screening, they are easily curable.					
4	Doing cervical cancer screening can help improve the chances of an infertile woman becoming pregnant.					
5	Cervical cancer screening can decrease the chances of a woman having an abortion.					

12) What makes you not to be screened?

	Barriers To Cervical Cancer Screening	Strongly Agree	Agree	Disagree	Strongly disagree
6	Lack of information about cervical cancer screening procedures				
7	It is too embarrassing to do cervical cancer screening.				
8	Cervical cancer screening is painful.				
9	The exam is for the sick persons				
10	Doing cervical cancer screening will only make one worry.				
11	Only women who have had babies need to do cervical cancer screening.				
12	Not knowing where to go for cervical cancer screening is a reason why people don't do cervical cancer screening.				
13	Lack of female screeners in health facilities is a reason for not doing cervical cancer screening.				
14	Attitudes of health workers can discourage one from going for cervical cancer screening				
15	Lack of convenient clinic time is a barrier to routine cervical cancer screening.				
16	The tests are very expensive.				
17	Services are offered at the big hospitals which are far and it is expensive to reach there				
18	Belief that cervix is part of sexual organ and private				
19	My partner will not want me to do cervical cancer screening.				

- 13) How far is the nearest health facility that offers cervical cancer screening from your home?
- a) Less than 1 Kilometers (Km)
 - b) 1Km to 2 Km
 - c) 2-3Km
 - d) 3-4Km
 - e) More than 4Km (specify distance in Kilometers.....)
- 14) How much does it cost to do travel to the nearest health facility that offers cervical cancer screening?
- 15) How much does it cost to do cervical cancer screening (specify).....
.....
- 16) How long does it take before one receives the cervical cancer screening results?
- a) Hours (specify).....
 - b) Days (specify).....
 - c) Weeks (specify).....

THANK YOU!

APPENDIX III: Questionnaire for cervical cancer screening service providers

Respondent Consent

The nature and kind of study has been explained to me by the researcher. I understand the information I give shall be accorded the necessary confidentiality to benefit the study purposes.

Signed..... Date.....

Please answer the following questions as honestly as possible. You are allowed to indicate as many concerns/issues as you have when answering the questions.

1. What is your Age in completed years. _____?
2. How long have you been involved in care of cervical cancer management _____
3. In what capacity have you been involved in care patients with cervical cancer? -----
4. What challenges have you faced while providing cervical cancer screening services?
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.....
.....
5. How have you handled or dealt with the challenges?
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.....
6. What future challenges do you anticipate in provision of cervical cancer screening to clients?
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7. Is there is any other comment or issue you would like to add regarding screening of cervical cancer in Kenya today and in the future?
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Thank you for your taking your time to take part in this study.