

**KNOWLEDGE, ATTITUDES AND SOCIO-CULTURAL PRACTICES THAT
INFLUENCE THE CONTROL OF CERVICAL CANCER AMONG
WOMEN IN UASIN GISHU COUNTY, KENYA**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of
the Degree of Doctor of Philosophy in Disaster Management and Sustainable
Development of Masinde Muliro University of Science and Technology**

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DECLARATION

This thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

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DEDICATION

This research work is dedicated to my beloved husband Kemboi Olger and our children Meek Kemboi, Berur Olger and Lapkei Olger for their continued and tireless support throughout the study period.

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ABSTRACT

Cancer is now recognized globally as one of the leading non-communicable diseases. Each year about half a million women develop invasive cancer of the uterine cervix, with more than 80% occurring in low-income countries. Whereas research and technology have realized great positive innovation in the control of cervical cancer in terms of prevention, easy to administer and less invasive detection and treatment procedures, the disease continues to be a commonly occurring cancer among women with incidence and mortality rates going higher each year. The study's general objective was to determine the knowledge, attitudes and practices that influence the control of cervical cancer in Uasin Gishu County, Kenya. Questionnaires, interview schedules and focus group discussions were used for data collection. Descriptive, correlation and evaluation research designs were employed. Both probability and non probability sampling were used to sample the study participants. Data was analyzed using (SPSS) version 20. Multiple logistic regression was used to determine the significance between socio-demographic factors and uptake of cervical cancer control interventions while chi-square analyses was used to test the degree of association. Majority of the participants, 91.4% (n=363) had heard about cervical cancer with 38.2% (n=136) having heard it from the media, 27.2% (n=97) from a friend while 23.6% (n=84) from a health worker. 40.2% (n=144) reported bacteria, 24% (n=86) Human Papilloma Virus (HPV), while 34.6% (n=124) did not know the cause of cervical cancer. Majority of the participants reported sexual contact 73% (n=299) while 11.4% (n=36) reported hereditary as the main transmission modes. Majority of the participants had heard of ways to prevent cervical cancer 62.1% (n=223) with Pap smear 62% (n=225) and vaccination 16.1% (n=60) being the commonly known. Only 35.5% (n=142) had ever been screened in the past of which 46.4% (n=65) had been screened in the last 12 months. Only 22.2% (n=84) had heard about HPV vaccine of which 25% (n=21) had been vaccinated with the HPV vaccine. Barriers to reception identified included; gender of health care provider; influence of traditional herbal medicine; perception of not being at risk or being well and the perception that cervical cancer screening is a painful and an unbearable procedure. The study concludes that the adequate knowledge and awareness exhibited by the participants did not translate into positive practice. Therefore, there is need for the Ministry of Health to identify possible information gaps and communication challenges and develop culturally sensitive cervical screening programs.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACCP	Alliance of Cervical Cancer Prevention
ACS	American Cancer Society
ASCO	American Society of Clinical Oncology
ASR	Age Standardized Rate
CCSP	Cervical Cancer Screening Program
CHC	Community Health Campaigns
CI	Confidence Interval
FGD	Focus group Discussion
G P	General Practitioner
HHS	Health and Human Services
KDHS	Kenya Demographic and Health Survey
MDG	Millennium Development Goals
MMUST	Masinde Muliro University of Science and Technology
MOH	Ministry of Health
NACOSTI	National Council of Science Technology and Innovation
NHS	National Health Service
NCCS	National Cancer Control Strategy
NCI	National Cancer Institute
OR	Odds Ratio
PATH	Program for Appropriate Technology in Health

SDMHA	School of Disaster Management and Humanitarian Assistance
SPSS	Statistical Package for Social Sciences
VIA	Visual Inspection with Acetic Acid
VILI	Visual Inspection With Lugols Iodine
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Attitude- refers to the norm, position or belief that a person has towards an issue.

Cervical cancer - is cancer that starts in the cervix, the narrow opening into the uterus from the vagina.

Cervical cancer control- refers to all the conventional strategies of curbing cervical cancer i.e. prevention, early detection (through screening), treatment and palliative care.

Culture- is a way of life of a particular community including food, dress, lifestyle behavior, traditional belief, religion and myths.

Etiology of cervical cancer - the cause, set of causes, or manner of causation of cervical cancer.

Female genital mutilation- describes a series of practices that involve the partial or complete removal of the clitoris/ or external female genital organs for cultural or other non-therapeutic reasons.

Health Seeking Behavior- refers to any activity undertaken by women who perceive themselves to be at risk of cervical cancer or who already have symptoms of cervical cancer for the purpose of finding an appropriate remedy.

Knife use- refers to any surgical procedure to detect or treat cervical cancer.

Knowledge- refers to having an understanding of what cervical cancer is, the causal agent, how it's transmitted, how to control (Prevention, screening, treatment and palliative care) among others.

Perception of risk- are beliefs and attitudes that can jeopardize one's life such as the belief that you don't need to get screened for cervical cancer if you are not feeling any pain or that you are faithful to one partner and thus no need for screening.

Practices- are the observable action of an individual in response to a stimulus.

Screening- the systematic application of a test or inquiry, to identify individuals at risk of a specific disorder

Socio-cultural-combination of values and virtues cherished by society, lived and practiced as a tradition.

Traditional healing/witchcraft- refers to the use of supernatural powers such as witchcraft.

Traditional Herbal Medicine- refers to any other form of non conventional medicine but excludes the use of supernatural forces such as spiritual healing or witchcraft.

Vulnerable- refers to that which can be easily hurt, wounded or injured.

'Woman is well'- to mean the woman is well by virtue that she does not show any signs and symptoms of cervical cancer which is not the case.

Women- refers to females in reproductive age (18-49) years and can give consent.

Women's subordinate role-refers to the male dominance over women, making them unable to make decisions unless those supported by the male counterparts.

CHAPTER ONE

INTRODUCTION

This Chapter presents background of the study, statement of the problem, justification of the study, purpose of the study, the research objectives, research questions and the scope of the study.

1.1 Background to the Study

Cancer is predicted to be an increasingly important cause of morbidity and mortality in the next few decades in all regions of the world. The challenges of tackling cancer are enormous and when combined with an increase in the ageing population, increases in cancer prevalence are inevitable regardless of current or future actions or levels of investment. The forecasted changes in population demographics in the next two decades mean that even if current global cancer rates remain unchanged, the estimated incidence of 12.7 million new cancer cases in 2008 (Farley *et al.*, 2013) will rise to 21.4 million by 2030, with nearly two thirds of all cancer diagnoses occurring in low- and middle-income countries (IARC 2011).

Cancer of the cervix is a significant public health problem globally, especially in developing countries where it is the most common cancer in women (Manaf *et al.*, 2017). Every year, approximately 500,000 new cases of cervical cancer are diagnosed worldwide with 90% of these cases being in developing countries. It is estimated that deaths resulting from cervical cancer may increase to over 11 million by the year 2030 yet it is one of the easiest cancers to control if proper strategies on prevention and treatment are put in place for early identification (WHO, 2009, 2010). Cancer of the cervix ranks as the fourth most frequent cancer among women worldwide (Bruni, *et al.*, 2015a) and the estimated rates vary widely across the

different regions of the world (Ferlay *et al.*, 2013). While cervical cancer is gradually becoming a rare disease in many developed countries, this has not been the case in developing countries (Sankaranarayanan *et al.*, 2009). The incidence and mortality rates of cervical cancer vary considerably between the developed and the developing world (Bruni, *et al.*, 2015b). Globocan (2008), rated cervical cancer as a leading cause of death worldwide accounting for about 7.6 million (13%) of all deaths in the year 2008. It was rated as the second most common cancer among women in developing countries, with approximately 445,000 new cases reported in less developed regions in 2012 (WHO, 2016). But approximately 70% of all the cancer related deaths registered occurred in the low and middle income countries.

In USA, American Cancer Society (ACS) inaugurated a yearly report on its cancer screening guidelines in California in the year 2008. The report and subsequent annual reports, has provided a summary of ACS cancer screening guidelines, about testing for early cancer detection for tests that are increasingly used by the public. In order for guidelines to reflect the most current scientific evidence, the guidelines have been updated more frequently as new evidence or the emergence of new technologies have warranted more frequent updates in guidance to health professionals and the public (Smith *et al.*, 2008). The age-adjusted annual incidence rate of cervical cancer is 6.6 cases per 100,000 women, according to data from National Cancer Institute (NCI) (2011). An estimated 12,200 new cases of cervical cancer and 4210 deaths occurred in the United States in 2010. Cervical cancer deaths in the United States have decreased dramatically since the implementation of widespread cervical cancer screening. Most cases of cervical cancer occur in women who have not been appropriately screened. Strategies that aim to ensure that all women are screened at the appropriate interval and receive adequate follow-up are most likely to be

successful in further reducing cervical cancer incidence and mortality in the United States (Moyer, 2012).

In Britain, cervical cancer screening started in the mid-1960s. Although many women were having regular smear tests, there was concern that those women at greatest risk were not being tested, and that those who had positive results were not being followed up and treated effectively (Labeit *et al.*, 2013). Because of these reasons the National Health Service (NHS) Cervical Screening Programme was set up in 1988 when the Department of Health instructed all health authorities to introduce computerized call-recall systems and to meet certain quality standards. This programme invited about 4.5 million women for screening in 2010/11 and 3.4 million women screened in 2010/11 in England (Labeit *et al.*, 2013). Invitation by the woman was done by the NHS call and recall system which invited women who were registered with a general practitioners (GP). It also kept track of any follow-up investigation and recalled the women for screening in three or five years time if there was no abnormality. Within the NHS Cervical Screening Programme women received their first invitation for routine screening at age 25 as it was national policy. This reduced health care costs for NHS in UK (ACS, 2014).

In Africa, Southern Africa has one of the highest reported age-standardized incidence rates of cancer of the cervix (higher than 40 per 100,000 women) and it caused significant cancer-related morbidity and mortality among women (Denny *et al.*, 2010). The incidence of this emerging cancer was steadily increasing in sub-Saharan Africa, with more than 75,000 new cases and close to 50,000 deaths a year, a toll further increased by HIV infection. According to the World Health Organization, cervical cancer will kill more than 443,000 women per year worldwide by 2030,

nearly 90 % of them in sub-Saharan Africa (Mboumba *et al.*, 2017). Over 80% of cervical cancer in Sub-Saharan Africa is detected in late stages, predominantly due to low preventive health behavior and lack of access to effective screening services that facilitate early detection and treatment. Consequently, women with cervical cancer are not identified until they are at an advanced stage of disease which is associated with low survival rates (WHO, 2012).

In Nigeria, cervical cancer is associated with age-standardized incidence and mortality rates of 36 per 100,000 and 17.5 per 100,000 respectively (Akinfenwa, 2018). Oguntayo *et al.*, 2011 reported that cervical cancer was the leading cause of gynecological cancers in northern Nigeria, accounting for 65.7% of all gynecological cancers. This high incidence was also observed in Ibadan and Maiduguri (Nigeria) with 62.7% and 72.6% respectively (Pindiga *et al.*, 1999; Adelusi, 1978; Rafindadi *et al.*, 1999 as cited in Ichaminy, 2015). While awareness of cervical cancer remains low in Nigeria and mortality figures are among the highest in the world, there are many signs that positive changes are afoot. Several successful pilot schemes, funded by Non-Government Organizations (NGOs) and private enterprises are currently underway for cervical cancer prevention and treatment (Ichaminy, 2015).

East Africa suffers the highest burden of cervical cancer accounting for 39% of all reported cases and 41% of all mortalities in Africa (WHO, 2010). Eastern Africa has one of the highest incidence and mortality rates from cervical cancer in the world with estimated Age-Standardized Rate (ASR) of 42.7 per 100,000 (Farley *et al.*, 2013).

In Kenya, cervical cancer accounts for approximately 1 (one) in 5 (five) (20%) female cancer cases and 15 % of all female cancer deaths annually (Farley *et al.*,

2013). The annual cervical cancer crude death rate is about 13 per 100,000 women and age-standardized in rate of 23 per 100,000 women population annually (WHO/ICO, 2010b).

Data from hospital based registers in Nairobi, Kenya have indicated that cervical cancer accounted for 70-80% of all cancers of the reproductive tract and 20% of all cancer cases for the period 2000-2002 (Njagi *et al.*, 2013). The national incidence rate of cervical cancer in Kenya is unknown but it has been estimated to be at 45 per 100,000 women (ICO/IARC, 2017).

Studies indicate that 55% of cervical cancer cases reported in Kenya are in stage III or more advanced (Claeys *et al.*, 2003 as cited in Ogero and Amolo, 2017) and only 6% of the Kenyan women found with invasive cancer have a history of previous cervical cancer screening. The World Health Organization (WHO) estimated that cervical cancer was the second most common cancer among women in Kenya in 2008, with screening coverage being very low at 3.2% in 2002. If screening and treatment remain low in Kenya, the number of deaths resulting from cervical cancer will almost double by 2025 (Sudenga *et al.*, 2013).

Kenya has a population of 13.45 million women of 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. 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 9.1% of women in the general population are estimated to harbour cervical HPV-16/18 infection at a given time, and 63.1% of invasive cervical cancers are attributed to HPVs 16 or 18 (ICO/IARC, 2017).

A lot of women continue to suffer and die from cancer of the cervix, although options for cancer control and treatment have reached a point that there are interventions for control that could be adopted for virtually every resource and demographic situation (Cain *et al.*, 2009). In many developed countries, cytological screening programs have led to a significant reduction in the incidence of and mortality from cervical cancer; however, in developing countries where it has been implemented, it has been less successful and highly ineffective in reducing disease burden (Denny *et al.*, 2018).

Cervical cancer screening methods available in Kenya, which were part of the Ministry of Health's National Cervical Cancer Prevention Strategic Plan from 2002 to 2006, include the Papanicolaou (Pap) test, visual inspection with acetic acid, and visual inspection with Lugol iodine; however, uptake of these methods remains very low and haphazard. A previous study on Knowledge, Attitude and Practices (KAP) carried out in Kenyatta National Hospital revealed a past Pap smear screening rate of 22%, while in a different study performed in Voluntary Testing and Counseling (VCT) centers in Nairobi, Kenya, an uptake rate of 14% was described. These demonstrate a relatively low level of uptake of cervical screening. To reach these other women as well, the government of Kenya has integrated cervical cancer screening into the routine services that the majority of women are exposed to. These routine services are offered at MCH clinics. Although about 300 sites provide screening services, only about 30 (10%) have outpatient treatment services (National Cervical Cancer prevention, 2012)

As of 2008, GLOBOCAN figures indicated that Kenya's cervical cancer incidence rate was 23.9% (2,660 cases) while the mortality rate was 14.6% (1,491 deaths)

(GLOBOCAN, 2008). 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. But it has received low priority for health care services in Sub-Saharan Africa due to the overwhelming burden of communicable diseases (GLOBOCAN, 2008).

1.2 Statement of the Problem

Cervical cancer remains a major public health issue in low income countries (Sahasrabudde *et al.*, 2012). The major barriers to prevention of cervical cancer in Kenya include low screening coverage and lack of awareness among the population (WHO, 2006). Studies suggest, however, that there are a number of factors that may affect a woman's ability or desire to participate in cervical cancer prevention program (WHO, 2012).

Cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 528,000 new cases in 2012 worldwide and 84% were from developing countries (Farley *et al.*, 2013). The most recent data in 2015 indicates that an estimated 331.4 million women in Africa aged 15 years and older are at risk of developing cervical cancer, and that every year, 99,038 new cases of cervical cancer are diagnosed and 60,098 die from the disease in Africa (Bruni, *et al.*, 2015). It is the only cancer that is almost completely preventable by safe, simple and inexpensive methods yet every two minutes, one woman dies an unnecessary death from this cancer in the world (Manaf *et al.*, 2017).

In Kenya, cervical cancer is ranked as the number one cause of female cancers, resulting in an estimated 4,802 women being diagnosed with cervical cancer

(estimation for 2012) and 2,451 dying from the disease annually (Bruni *et al.*, 2015). Further, Kenya ranks 16 out of 20 high cervical cancer disease burden countries with an age standardized ratio of 40.1 per 100,000 worldwide (Farley *et al.*, 2013).

Studies have indicated that 55% of cervical cancer cases reported in Kenya are in stage III or more advanced and only 6% of the Kenyan women found with invasive cancer have a history of previous cervical cancer screening (Claeys *et al.*, 2003 as cited in Ogero and Amolo, 2017). Diagnosis of cervical cancer at advanced stages of the disease results in structural, physiological and psychological as well as socioeconomic challenges (Ngutu and Nyamongo, 2015).

Whereas research and technology have realized great positive innovation in the control of cervical cancer in terms of prevention, easy to administer and less invasive detection and treatment procedures, the disease continues to be a commonly occurring cancer among women with incidence and mortality rates going higher each year (ICO/WHO 2010). This can be attributed to the low awareness of cervical cancer in the general population resulting into a few women seeking cervical cancer screening services. Consequently, most patients with cervical cancer seek healthcare when the disease has advanced to invasive stages. This is demonstrated by the cases documented at the Moi Teaching and Referral Hospital where 90% present with late stage disease and thus can only benefit from radiotherapy or palliative care (Were *et al.*, 2011).

Uasin Gishu County has 170 health facilities one referral hospital, nine sub-county hospitals twenty six health centres and one hundred and thirty four dispensaries. Cervical cancer services are offered at the referral hospital and the sub-county hospitals or district hospitals. Whereas the number of existing facilities is quite

appreciable, reception of cervical cancer control services is low at only 3.2% (Morema *et al.*, 2014). In a study carried out in western Kenya, Uasin Gishu County being part of it, Orang'o *et al.*, 2016 found out that a high percentage of the respondents 81% (2029) believed that all women needed cervical cancer screening but only 11% (275) had participated in the study. This has become a threat as more women keep presenting with cervical cancer at a later stage and eventually die from it despite effective preventive screening programs that are widely available in the country's health establishments (NCCS, 2011).

Therefore it is important to investigate the underlying knowledge, attitudes and practices of women that are leading to such low rates of cervical cancer screening, despite the existence of a national screening program.

1.3 Research Objectives

The general objective of the study was to determine the knowledge, attitudes and practices that influence the control of cervical cancer among women in Uasin Gishu County. The specific objectives that the study sought to address were:

1. To examine the knowledge on hazards and risks of cervical cancer among women in Uasin Gishu County.
2. To examine the reception levels of cervical cancer control services among women in Uasin Gishu County.
3. To establish the attitudes and practices associated with cervical cancer among women in Uasin Gishu County.
4. To establish the barriers to existing cervical cancer control interventions in Uasin Gishu County.

1.4 Research Questions

1. What is the knowledge on risks of cervical cancer among women in Uasin Gishu County?
2. What are the reception levels of cervical cancer control services among women in Uasin Gishu County?
3. What are the attitudes and practices associated with cervical cancer control among women in Uasin Gishu County?
4. What are the barriers to the existing cervical cancer control interventions in Uasin Gishu County?

1.5 Justification of the Study

Cervical cancer is the second most common cancer in women worldwide and the leading cause of cancer deaths in developing countries. While incidence and mortality rates of cervical cancer have fallen significantly in developed countries, 83% of all new cases that occur annually and 85% of all deaths from the disease occur in developing countries. Cervical cancer is the most common cancer among women in sub-Saharan Africa and the incidence is on the increase in some countries. Knowledge and awareness of this disease on the continent are very poor and mortality is still very high (Anorlu, 2008). About 80% of reported cases of cancer in Kenya are diagnosed at advanced stages, when the treatment is costly and the prognosis is poor (ICO/IARC, 2017).

Assuring high levels of participation in screening, that is coverage and follow-up is essential for effective cervical cancer prevention. However, obtaining high levels of coverage is challenging in both developed and developing countries. The morbidity and mortality of cervical cancer can be highly reduced through regular screening and

timely intervention upon finding abnormal cells. The Kenyan Government has made tremendous efforts in trying to incorporate screening programs in the regular HIV care and also the national cervical cancer prevention plan focusing on primary prevention, screening and early detection and treatment (MOH, 2013). In spite of all the efforts put in place for cancer screening by the Ministry of Health, the uptake still remains low. This study is thus positioning itself to unravel the knowledge, attitudes and socio-cultural practices that could be contributing to this low uptake.

1.6 Significance of the study

The findings and recommendations of this study will provide valuable information to the Ministry of Health and other stakeholders in addressing issues of screening uptake and the common barriers to screening among women in the rural communities. Findings from this study will also add to the body of existing knowledge on strategic options for curbing cervical cancer in Kenya. In addition, it will help inform public policy and other stakeholders in the county which goes a long way in curbing cervical cancer. It will also provide information regarding the knowledge and practices of the women which can make them susceptible to cervical cancer or prevent detection of the disease at an early stage. This will help to develop targeted awareness campaign to provide appropriate information which in turn will lead to behavioral modifications and saving of lives from cervical cancer.

1.7 Assumptions of the Study

This study made the following assumptions:

- i) That the researcher got full cooperation from the respondents.

- ii) That the analysis selected and the size of the sample was sufficient to detect significant associations if any that existed in the population.
- iii) That the respondents responded to the questions honestly to the best of their abilities and participated without biases.

1.8 Limitations of the Study

- i) Since the study was a house hold survey that sought to understand the knowledge, attitudes and socio-cultural factors that influenced the control of cervical, other environmental factors such as urbanization would have had an influence on the findings. This was overcome by sampling from rural and urban populations.
- ii) The data was collected over a short period of time hence it did not account for seasonal variation in reception such as during cancer awareness months.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed literature in line with the context of the study problem and research objectives formulated. The literature was reviewed starting from global, regional and narrowed down to local perspectives. It covered the following areas Cancer; a looming disaster in the developing world, etiology of cervical cancer, epidemiology of cervical cancer, hazards and risk factors associated with cervical cancer, cervical cancer prevention, issues in cervical cancer screening and treatment in resource limited settings, factors related to cervical cancer screening uptake, exploring cultural perceptions about cervical cancer and prevention, the role of men in cervical cancer control, the role of key stakeholders and local organizations, cultural beliefs and attitudes to cervical cancer. A conceptual framework is presented showing the relationship between the independent variable and dependent variables which are important in clearly depicting the relationships and methodological approaches in this research.

2.2 Cancer; a looming disaster in the developing world

Cancer kills more people than tuberculosis, malaria and HIV put together. Based on the most recently estimated rates of current cancer incidence and the projected demographics for the next half century, the 11 million cancer cases diagnosed in 2002(double the number diagnosed two decades earlier) will reach roughly 17 million in 2020 and 27 million by 2050 (Jin, 2017).

These estimates assume no change in the risk pattern of cancer incidence. A yearly increase of 1% would add roughly another million cases per year. For many types of cancer, however, the expected increase in risk will be much higher than 1% annually, especially in low-income countries. Moreover, the global distribution of cancer and types of cancer that predominate continues to change, especially in economically developing countries. Low- and middle-income countries accounted for about half (51%) of all cancers worldwide in 1975; this proportion increased to 55% in 2007 and is projected to reach 61% by 2050 (Thun *et al.*, 2010)

This shift in cancer mortality risk has occurred because in developing countries tumors related to western life styles (e.g. breast cancer) are accumulating in addition to poverty-linked tumors (e.g. cervical cancer). The most relevant differences between the two parts of the world are in the fields of early detection and treatment. Early detection remains elusive for the vast majority of the population in resource-poor countries, even in tumors such as cervical cancer, for which the efficacy and economic viability of early detection has been clearly demonstrated (Cavalli, 2006).

In Kenya, cancer ranks third as a cause of death after infectious diseases and cardiovascular diseases (Mwangi, 2015). It causes 7% of total national mortality every year. Although population based data does not exist in the country, it is estimated that the annual incidence of cancer is about 28,000 cases and the annual mortality to be over 22,000. Over 60% of those affected are below the age of 70 years (NCCS, 2011). This statistics indicate that if measures are not put in place to curb the cancer menace, it will soon be a disaster. The literature reveals that cancer incidence and mortality are increasing in developing countries because early detection and treatment are elusive for the vast majority of the population in resource

poor countries. This study seeks to address this gap by delving into the Knowledge, Attitudes and Practices that influence the control of cervical cancer and examine the barriers to utilization of these control strategies.

While many know the human misery and crippling economic losses resulting from disasters, few realize that this devastation can be prevented through disaster risk reduction initiatives. Governments around the world have committed to take action to reduce disaster risk, and have adopted a guideline to reduce vulnerabilities to natural hazards, called the Hyogo Framework for Action (Hyogo Framework 2005-2015) and recently the Sendai Framework 2015-2030. The Hyogo Framework assists the efforts of nations and communities to become more resilient to, and cope better with the hazards that threaten their development gains (UNISDR, 2015).

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. The Sendai Framework is built on elements which ensure continuity with the work done by states and other stakeholders under the HFA and introduces a number of innovations as called for during the consultations and negotiations. Many commentators have identified the most significant shifts as a strong emphasis on disaster risk management as opposed to disaster management, the definition of seven global targets, the reduction of disaster risk as an expected outcome, a goal focused on preventing new risk, reducing existing risk and strengthening resilience, as well as a set of guiding principles, including primary responsibility of states to prevent and reduce disaster risk, all-of-society and all-of-State institutions engagement. In addition, the scope of disaster risk reduction has been broadened significantly to focus on both natural and man-made hazards and related environmental,

technological and biological hazards and risks. Health resilience is strongly promoted throughout (UNISDR, 2015).

2.3 Knowledge of cervical cancer

Cancer is a class of diseases in which a group of cells display uncontrolled growth, with intrusion on and destruction of adjacent tissues and sometimes spread to other locations in the body via lymph or blood. Cancers are distinguished from each other by the specific type of cells involved and their location in the body. Although the reason the disease develops remains unknown for many cancers, particularly those that occur during childhood, there are many known cancer causes, including lifestyle factors, such as tobacco use and excess body weight, and non-modifiable factors, such as inherited genetic mutations, hormones and immune conditions (American Cancer Society, 2018).

Cancer is now recognized globally as one of the leading non-communicable diseases. Second to cardiovascular diseases, cancers contribute to over 7.9 million deaths (13% of total global mortality) each year and this figure is projected to rise to nearly 10 million unless the problem is addressed urgently (Ministry of Public Health and Sanitation, 2011).

Cervical cancer is a cancer that affects the cells in the lower part or neck of the uterus as a result of persistent infection with human papillomavirus (HPV) (Australian Institute of Health and Welfare (AIHW, 2014). It is usually a slow-growing cancer that may not have symptoms but can be found with regular Pap tests (American Cancer Society, 2014).

The cervix is a female reproductive organ that forms the caudal portion of the uterus, it forms part of the birth canal that opens to the vagina; it lies in the pelvis, on top of the vagina, in between the rectum and bladder. The surface layer of the cervix is mostly composed of squamous cells and these cells merge with the glandular cells lining the cervical canal of the uterus. The area of merging is called the Squamo-Columnar Junction (SCJ) and the area on the cervix outside of this junction is called the Transformation Zone (TZ). The transformation zone is the area where replacement of one cell type with another cell type takes place and it is also the most frequent site for detection of cervical cancer and its precursors (American Cancer Society, 2014).

Cervical cancer occurs when the DNA of the cells, typically in the transformation zone, are damaged, and spread and grow throughout the cervix. These cells may invade and destroy neighbouring organs or break away and spread through the bloodstream and lymphatic system to other parts of the body (National Cervical Cancer Coalition, 2018). According to National Cancer Institute 2017, cervical cancer begins with the development of pre-cancerous lesions in the cervix and takes a longer period to develop into cancer if left untreated. The development from pre-cancerous lesions to cancer can be over a long time before a woman realizes that she is developing cancer.

Cervical cancer, behaves like a sexually transmitted disease with HPV types 16, 18 and 45 being found to be present in 95% of cervical cancer cases. However, majority of women infected with high risk HPV subtypes do not develop invasive cancer immediately but over time from commencement of sexual activity making cervical

cancer easy to detect at early stage and treated through routine screening (National Cancer Institute, 2017).

Approximately 90% of cervical cancers are squamous cell carcinomas. This type of cancer originates in the thin, flat, squamous cells on the surface of the ectocervix, the part of the cervix that is next to the vagina. Another 10% of cervical cancers are of the adenocarcinoma type. This cancer originates in the mucus-producing cells of the inner or endocervix, near the body of the uterus. Occasionally, the cancer may have characteristics of both types and is called adenosquamous carcinoma or mixed carcinoma (American Cancer Society, 2013).

Cervical cancer can be successfully treated if detected early and linked to an effective treatment mechanism. In most developing countries however, such treatment services are unavailable, inadequate or inaccessible to many (Gelibo *et al.*, 2017).

Knowledge on these aspects of cervical cancer that is, what it is, how it affects women, the part of the body affected and the fact that the development from pre-cancerous lesions to cancer can be over a long time before a woman realizes that she is developing cancer is essential for its control. Many studies that have been carried out have not focused on understanding women's knowledge on these aspects. This study is thus positioning itself to fill this gap.

2.4 Etiology of cervical cancer

Cervical cancer has been recognized as a rare outcome of a common sexually transmitted infection. The etiological association is restricted to a limited number of viral types of the family of the Human Papilloma Viruses (HPVs). The association is

causal in nature and, under optimal testing systems; HPV-DNA can be identified in all specimens of invasive cervical cancer. It has been claimed that HPV infection is a necessary cause of cervical cancer (Irabor and Aigbe, 2018).

Infections with one or more of the many types of HPV are extremely common. Most HPV infections are asymptomatic and often cleared by the immune system. However, the infection may persist in some women and may lead to changes in the cells in the cervix and ultimately to cervical cancer (Martin & O'Leary, 2011; Samir & Hellberg, 2012). Importantly, other factors are necessary for the progression from cervical HPV to cancer. These factors are: tobacco smoking, high parity, oral contraceptive use, high number of sexual partners, young age of first delivery, suppression and alteration of immune status, low serum level of vitamins 'A' and 'E', female genital mutilation, episiotomy and co-infection with HIV (Borruto, *et al.*, 2012; Ibrahim *et al.*, 2011; Knekt, 1988; World Health Organisation (WHO) & Institut Cata d'Ocologia (ICO), 2010; Zhang *et al.*, 2012). With regards to mode of transmission, HPV affects the penis of a man and it is then transmitted to a woman through sexual intercourse. Sexual transmission is the main pathway for genital HPV infection, however oral transmissions are also possible (Borruto, *et al.*, 2012).

The evidence is consistent worldwide and implies both the squamous cell carcinomas (SCCs), the adenocarcinomas and the vast majority (ie > 95%) of the immediate precursors, namely high-grade squamous intraepithelial lesions (HSIL)/cervical intraepithelial neoplasia 3 (CIN3)/carcinoma in situ (CIS) (Borruto, *et al.*, 2012).

The initial changes that may occur in some cervical cells are not cancerous. However, these precancerous cells form a lesion called dysplasia, a squamous intraepithelial lesion (SIL) or cervical intraepithelial neoplasia (CIN) since it occurs

within the epithelial or outer layer of cells. Before a cervical cancer becomes invasive there is usually a long pre-invasive phase, characterized microscopically as a spectrum of precursor lesions progressing from cellular atypical to various grades of cervical intraepithelial neoplasia (CIN) before progression to invasive carcinoma (Martin & O'Leary, 2011). Dysplasia is a premalignant abnormality of the squamous cells which can be mild, moderate, or severe, depending on the degree of compromise of the epithelial thickness and can eventually develop into a carcinoma in situ (Samir & Hellberg, 2012).

However, as some types of dysplasia can regress, persist or progress into carcinoma in situ, the classification of dysplasia was later replaced by cervical intraepithelial neoplasia (CIN) (Oguntayo, 2012). Depending on the degree of differentiation, CIN is classified as grades 1 to 3 (Martin & O'Leary, 2011): CIN 1 (Mild dysplasia) is a low-grade lesion with atypical cell in the basal, lower third of the epithelium. This corresponds to a squamous intraepithelial lesion (SIL) (Samir & Hellberg, 2012). CIN 2 (moderate dysplasia) is high-grade lesion or high squamous intraepithelial lesion (HSIL). It refers to atypical cellular changes confined to the basal two-thirds of the epithelium with preservation of epithelial maturation in the superficial parts of the epithelium. CIN 3 (severe dysplasia and cancer in situ) also refer to as HSIL, is a severely atypical cellular abnormalities encompassing more than two-thirds or complete epithelium (Samir & Hellberg, 2012).

Dysplasia is a common condition and the abnormal cells often disappear without treatment. However, these precancerous cells can become cancerous. This may take years, although it can happen in less than a year. Eventually, the abnormal cells start to grow uncontrollably into the deeper layers of the cervix, becoming an invasive

cervical cancer (American Cancer Society, 2014). Understanding women's knowledge on this fact is of essence because once women are aware that they could be harboring cervical cancer without exhibiting any signs and symptoms, their attitude towards the control services could change.

2.5 Epidemiology of cervical cancer

Cervical cancer is a significant public health issue especially in developing countries of sub-Saharan Africa (Bruni, *et al.*, 2015). In 2010, the disability adjusted life years (DALYs) lost to cervical cancer for all ages was estimated to be 6,439,570 globally and 1,384,250 for the sub-Saharan African region (Institute for Health Metrics and Evaluation (IHME), 2014). According to the systematic analysis for the Global Burden of Diseases (GBD) study in 2013, the total years of life lost (YLLs) to cervical cancer for all age groups increased by 20.1% (196,300 to 235,700 years) from 1990 to 2013 (Naghavi *et al.*, 2015). Human Papilloma Virus (HPV) infection is now a well-established cause of cervical cancer. HPV types 16 and 18 are responsible for about 70% of all cervical cancer cases worldwide (American cancer society, 2014).

With 528 000 new cases every year, cervical cancer is the fourth most common cancer affecting women worldwide, after breast, colorectal, and lung cancers; it is most notable in the lower-resource countries of Sub-Sahara Africa. It is also the fourth most common cause of cancer deaths (266 000 deaths in 2012) in women worldwide (Ferlay *et al.*, 2013).

Regions designated as high-risk for cervical cancer, with estimated age standardized rates above 30 per 100,000 women, include Eastern Africa (42.7), Melanesia (33.3),

Southern Africa (31.5) and Middle Africa (30.6). Rates are low in Australia/New Zealand (5.5) and Western Asia (4.4) (Ferlay, *et al.*, 2013).

Worldwide, there are more than 400,000 new cases of cervical cancer diagnosed each year. The American Cancer Society (ACS) estimated 13,000 new cases of invasive cervical cancer diagnosed in the United States in 2002. More than one million women were diagnosed with a precancerous lesion or non-invasive cancer of the cervix in 2001 (American Cancer Society, 2013).

In Sub-Saharan Africa, 34.8 new cases of cervical cancer are diagnosed per 100 000 women annually, and 22.5 per 100 000 women die from the disease. These figures compare with 6.6 and 2.5 per 100 000 women, respectively, in North America. The drastic differences can be explained by lack of access to effective screening and to services that facilitate early detection and treatment (Ferlay *et al.*, 2013).

Although cervical screening programs have been successful in curbing the incidence of cervical cancer in developed countries (Australian Institute of Health and Welfare (AIHW), 2014; National Health and Medical Research Council (NHMRC), 2005; Nene, *et al.*, 2007), very few women in sub-Saharan Africa have used screening services (Anorlu, 2008). Many developing countries have not developed a national cervical cancer prevention program accessible to all women due to reasons such as competing funding priorities, low prioritization of cervical cancer, and few trained and skilled healthcare service providers able to implement screening programs effectively (Adageba, *et al.*, 2011; Denny, *et al.*, 2006; World Health Organisation (WHO), 2012). The few available cervical screening services in Africa are usually found in secondary and tertiary healthcare facilities located in urban areas (Anorlu, 2008).

Kenya has a population of 12.92 million women aged 15 years and older who are at risk of developing cervical cancer (KNBS, 2009). Current estimates indicate that every year 4802 women are diagnosed with cervical cancer and 2451 die from the disease. Cervical cancer in Kenya ranks as the first most frequent cancer among women and the first most frequent cancer among women between 15 and 44 years of age. Based on Kenya studies performing HPV detection tests in cervical samples, about 9.1% of women in the general population are estimated to harbour cervical HPV-16/18 infection at a given time, and 61.4% of invasive cervical cancers are attributed to HPVs 16 or 18 (Bruni *et al.*, 2015).

The literature highlights cervical cancer as the fourth most cancer affecting women worldwide, after breast, colorectal and lung cancers (Ferlay *et al.*, 2013). In Kenya it ranks as the first most frequent cancer among women between 15 and 44 years of age. Kenya has a population of 12.92 million women aged 15 years and older who are at risk of developing cervical cancer (Bruni *et al.*, 2015). Many studies that have been done have focused on socio-economic and provider related barriers to cervical cancer control. This study is therefore positioning itself into understanding the socio-cultural factors that influence the control of cervical cancer which goes a long way in curbing the menace.

2.6 Hazards and risk factors associated with cervical cancer.

A cancer risk factor is anything that increases a person's chance of developing cancer. Although risk factors often influence the development of cancer, most do not directly cause cancer. Some people with several risk factors never develop cancer, while others with no known risk factors do (American Society of Clinical Oncology, 2015).

2.6.1 Age of the woman and cervical cancer.

Cervical abnormalities associated with HPV infection are very common in women under 25, but are rare in older women. Abnormalities in young women go away by themselves in the great majority of cases. Therefore, the consequence of screening younger women is that many would test positive for abnormalities and would subsequently be sent for unnecessary treatment to remove the affected cells. Cervical cancer is extremely rare in women under the age of 25 with just 2.6 cases per 100,000 women (Health and Human Services, 2013).

Older women are at the highest risk for cervical cancer. Although girls under the age of 15 rarely develop this cancer, the risk factor begins to increase in the late teens. The rates for carcinoma in situ peak between the ages of 20 and 30. In the United States, the incidence of invasive cervical cancer increases rapidly with age for African-American women over the age of 25. The incidence rises more slowly for Caucasian women. However, women over age 65 account for more than 25% of all cases of invasive cervical cancer. Cervical cancer tends to occur in midlife where most cases are found in women younger than 50. It rarely develops in women younger than 20 and many older women do not realize that the risk of developing cervical cancer is still present as they age. More than 15% of cases of cervical cancer are found in women over 65 (ACS, 2014).

2.6.2 Sexual Behavior and cervical cancer.

The most important risk factor for cervical cancer is infection with HPV. This virus is most commonly passed from person to person during sexual activity. Epidemiological studies conducted during the past 30 years have consistently

indicated that cervical cancer risk is strongly influenced by measures of sexual activity: number of sexual partners, age at first sexual intercourse and sexual behaviour of the woman's male partner (Louie *et al.*, 2009).

Genital HPV infections, as measured by the presence of HPV-DNA in the genital tract, are the most prevalent sexually transmitted viral pathogens. Genital HPV infections are considered to occur predominantly, although not exclusively, by sexual transmission. Many epidemiological studies have consistently shown that sexual behaviour related characteristics of the individual and his or her partners are the most important risk factors for acquisition of genital HPV types (Karim *et al.*, 2014).

Studies carried out have established that the risk of cervical cancer for a given woman is predictable by the sexual behaviour of her husband as much as by her own sexual behavior (American cancer society, 2017). Moreover, the probability that a woman is an HPV carrier and her risk of developing cervical cancer have been shown to be related to the presence of HPV-DNA in the penis or the urethra of her husband or sexual partner (Bosch and Iftner, 2006).

2.6.3 Host immune response to HPV

The most important risk factor for cervical cancer is infection by the human papilloma virus (HPV). The virus-cancer link works by triggering alterations in the cells of the cervix, which can lead to the development of cervical intraepithelial neoplasia, which can then result in cancer (Abiodun *et al.*, 2014).

HPV is a group of more than 150 related viruses, some of which cause a type of growth called *papillomas*, which are more commonly known as *warts*. Certain types of HPV may cause warts to appear on or around the genital organs and in the anal

area. These warts may barely be visible or they may be several inches across. These are known as *genital warts* or *condyloma acuminatum*. HPV 6 and HPV 11 are the 2 types of HPV that cause most cases of genital warts. These are called *low-risk* types of HPV because they are seldom linked to cervical cancer (ACS, 2014). Other types of HPV are called *high-risk types* because they are strongly linked to cancers, including cancers of the cervix, vulva, and vagina in women, penile cancer in men, and anal and oral cancer in men and women. The high-risk types include HPV 16, HPV 18, HPV 31, HPV 33, and HPV 45, as well as some others. There might be no visible signs of infection with a high-risk HPV until pre-cancerous changes or cancer develops (ACS, 2014).

2.6.4 Long-term use of oral contraceptives and cervical cancer.

There is evidence that taking oral contraceptives (OCs) for a long time increases the risk of cancer of the cervix. Research suggests that the risk of cervical cancer goes up the longer a woman takes OCs, but the risk goes back down again after the OCs are stopped (ACS, 2014). OCPs most likely act as a co-factor in the development of this disease. Oral contraceptives are classified by the International Agency for Research on Cancer as a cause of cervical cancer (IARC, 2013).

There are many possible reasons why OCPs increase the rates of cervical cancer. Although HPV appears to be the strongest factor in the causation of the disease, not all women with HPV develop cervical cancer. Oral contraceptives have been postulated to be one mechanism whereby HPV exerts its oncogenic effect on cervical tissue. The OCPs may bind to HPV DNA to either increase or suppress transcription of certain genes (Peck and Norris, 2012).

Other studies show that OCPs (and other factors such as smoking) may accelerate the cervical maturation process, representing increased cell proliferation and thus a possible greater vulnerability to HPV. Still other studies show that long-term use of OCPs may lead to a more frequent persistence of HPV (Peck and Norris, 2012).

2.6.5 Woman's parity and cervical cancer

Women who have had 3 or more full-term pregnancies have an increased risk of developing cervical cancer. Studies have pointed to hormonal changes during pregnancy as possibly making women more susceptible to HPV infection or cancer growth (ACS, 2014). Pooled data from eight case-control studies on invasive cervical cancer and two studies on carcinoma *in situ* (CIS) from four continents suggest that, compared to women who had never given birth, those with three or four full-term pregnancies had 2.6 times the risk of developing cervical cancer; women with seven or more births had 3.8 times the risk (Bezabih *et al.*, 2015).

Several mechanisms have been suggested to explain the increased risk for precursor lesions or cervical cancer in relation to pregnancy and childbirth, for example, increased hormone levels and impaired immune response. Furthermore, it has been shown that the transformation zone remains on the ectocervix for longer in multiparous women and thereby facilitates direct exposure to HPV and potential cofactors. Local tissue damage during vaginal delivery or cellular oxidative stress with increased likelihood of DNA damage and HPV integration may be possible mechanisms (Kjaer *et al.*, 2012).

2.6.6 Nutrient status of the woman and cervical cancer.

Diets that are low in fruits and vegetables increase the risk of cervical cancer. A 2003 study also linked obesity to increased risk for cervical adenocarcinoma. Even women who were overweight had a higher incidence of the disease. The link appears to be increased levels of estrogen (Key, 2011).

According to the World Cancer Research Fund there are several stages at which foods or nutrition status could influence progression. Dietary factors influence susceptibility to infection; infection can alter nutrition status; diet may affect the likelihood of infections becoming persistent; and dietary factors have been shown to alter DNA stability and repair (World Cancer research Fund International, 2015).

There is also evidence that folate can reduce persistence and independently reduce the risk of precancerous lesions in high-risk-HPV infected women. Some carotenoids, including beta-carotene and alphacarotene, which are found at high levels in carrots, are precursors of vitamin A. They also have properties independent of their pro-vitamin A activity. Carotenoids are recognized antioxidants, and low blood levels of dietary antioxidants are associated with HPV persistence (Abike *et al.*, 2011).

As much as age, sexual behavior, host's immune response to HPV, long term use of oral contraceptives, woman's parity and woman's nutritional status have been identified as the risk factors associated with cervical cancer, women's knowledge on this risk factors in Uasin Gishu county have not been studied. It is therefore important to delve into understanding the women's knowledge and attitudes towards these hazards and risk factors which this study will explore.

2.7 Cervical cancer prevention.

Cervical cancer is a major global health problem, with nearly 500,000 new cases occurring each year worldwide. Each year an estimated 270,000 women die from the disease with nearly 80% of the deaths occurring in developing countries. It is the leading cancer killer of women in the developing world and is the second most common malignancy in women worldwide after breast cancer (Ombech *et al.*, 2012).

“Cervical cancer can have devastating effects with a very high human, social, and economic cost, affecting women in their prime. But this disease should not be a death sentence, even in poor countries,” explains Dr Rengaswamy Sankaranarayanan, a lead investigator for an IARC research project with a focus on cervical cancer screening in rural India. “Low-tech and inexpensive screening tools exist and could significantly reduce the burden of cervical cancer deaths right now in less developed countries” (IARC, 2013).

It is a major cause of morbidity and mortality among women in resource-poor settings, especially in Africa. The majority of cancers (over 80%) in Sub-Saharan Africa are detected in late stages, predominantly due to lack of information about cervical cancer and prevention services.

Late-stage disease is associated with low survival rates after surgery or radiotherapy. In addition, these treatment modalities may be lacking altogether, or too expensive and inaccessible, for many women in low-resource countries. Cervical cancer is potentially preventable, and effective screening programmes can lead to a significant reduction in the morbidity and mortality associated with this cancer (WHO, 2012).

Primary prevention of cervical cancer can be achieved through prevention and control of genital HPV infection. The primary prevention of cervical cancer aims to limit the incidence of the disease by controlling the causative agent HPV through vaccination (McGraw and Ferrante, 2014), and the associated risk factors through minimising the avoidable risks. Health promotion strategies geared at a change in sexual behaviour targeting all STDs of public health significance can be effective in preventing genital HPV infection (Dale *et al.*, 2013).

Two prophylactic HPV vaccines (Gardasil® and Cervarix®) have been shown to be highly effective and are now recommended in many countries (Bharadwaj, *et al.*, 2009; Denny, 2010; Duval *et al.*, 2009; Garland, *et al.*, 2007; Paavonen *et al.*, 2007 as cited in Anaman *et al.*, 2016) for primary prevention of HPV infection. These vaccines are more efficacious when administered to girls prior to the onset of sexual activities (Duval, *et al.*, 2009). Although the prophylactic HPV vaccines have been reported to be effective, they do not protect against all types of HPV related diseases (Duval, *et al.*, 2009).

With the development and availability of vaccines that can protect against these oncogenic HPVs, primary prevention of cervical cancer is the ideal; however secondary prevention of cervical cancer is also possible. Secondary prevention aims to stop the progression of the disease after HPV infection has occurred by identifying the disease at an early and curable stage through screening (Denny & Sankaranarayanan, 2006). One of the most effective secondary prevention strategies is to identify the oncogenic HPV types at early stages for prompt intervention (Australian Institute of Health and Welfare (AIHW), 2015). As most adult women have not had the benefit from these recently developed vaccines, and are therefore at

greater risk of exposure to HPV, it is important for them to have regular cervical screening for early identification of the HPV or pre-cancerous changes in the cells of the cervix.

Cervical cancer is potentially preventable and effective screening programs can lead to reduced morbidity and mortality. However, the success of screening depends on access and uptake, quality of screening tests, adequacy of follow up and diagnosis and treatment of lesions detected (Ndejjo *et al.*, 2016).

In Kenya, Cervical cancer screening occurs, but only in a few selected sites and in disjointed projects rather than a full-fledged national-level program (NCCP, 2012). This explains why screening coverage is still low. Furthermore there is lack of additional diagnostic and treatment options at the secondary levels of care. Additionally, the link between screening and treatment has been dysfunctional (National Cervical Cancer Prevention Program, 2011). The main challenges to increasing access to cervical cancer screening services include inadequate equipment and supplies; lack of treatment facilities when there is pre-cancer or cancer diagnosis; inadequate monitoring and evaluation – especially data collection and management. The HPV vaccine that could be used in primary prevention is also not provided as part of the national vaccine and immunization program (Morema *et al.*, 2014).

National Reproductive Health policy (2006) recommends that, the government to avail cervical cancer screening services at the primary health care level where the majority (80%) live. This primary health care to include: district hospitals, health centers, dispensaries and faith based facilities also to provide the services. Inadequate equipment and supplies (despite the fact that these are inexpensive for visual

screening methods), the government should provide in all the institutions to increase the screening of cervical cancer. Were (2011) argues that strengthening referral systems for cervical cancer program (linkages); Improving facility and community Health information systems (general records and referral forms); Improving/strengthening communication system between the different levels and establishing a referral directory will enable access to uptake of screening cervical cancer (Were *et al.*, 2011).

According to Were *et al.*, 2011, availability of trained health personnel at all levels to provide cervical cancer screening and treatment services; Provision of facilitative supervision, refresher training and on job certification by the Reproductive Health Training and Supervisory Teams (RHTSTs) to enable them to maintain or enhance their skills will enhance the uptake of screening cervical cancer. There is need to strengthen patient advocacy in international settings to build a global grassroots movement [that portrays] accurate perceptions of cancer; prevent stigma from inhibiting people in their cancer control efforts; help people affected by cancer receive the support, services, and information they need, all of which will help in decreasing the global cancer burden, (Ichaminy, 2015).

Cervical cancer is a major cause of morbidity and mortality among women in resource-poor settings as shown in the preceding literature. Cervical cancer is potentially preventable and effective screening programs can lead to a significant reduction in morbidity and mortality associated with this cancer. However, majority of the cases are detected in late stage leading to low survival rates after surgery and radiotherapy. This study will fill this gap by evaluating the existing cervical cancer

control programs and understanding the KAP of women towards cervical cancer control strategies.

2.7.1 Cervical cancer screening methods.

Screening was defined by the United States Commission on Chronic Illness (1957) as "the presumptive identification of unrecognized disease or defect by the application of tests, examinations or other procedures that can be applied rapidly". Thus screening is the use of methods to detect unrecognized health risks or diseases in order to permit timely intervention (Christaki, 2015). Screening tests for identifying pre-invasive cervical cancer lesions include cervical cytology, HPV DNA testing, visual inspection, colposcopy, and cervicography. Other emerging techniques are computer-assisted cytological interpretation of cervical smears, and physical real-time detection of molecular surrogate makers of cancer progression (Bengtsson and Malm, 2014).

Organised cervical screening or regular examination of the cervix has lessened the incidence of cervical cancer and its related mortality in developed countries (Australian Institute of Health and Welfare (AIHW), 2014). For instance, organised cervical screening has led to a 40% reduction in cervical cancer incidence and related mortality in Australia and a 60% reduction in cervical cancer related mortality in the UK between 1975 and 2004 (Australian Institute of Health and Welfare (AIHW), 2014; Cancer Research UK, 2006). Thus a high level of participation in cervical screening is critical for effective cervical cancer prevention (World Health Organisation (WHO), 2012).

In addition, organised screening has the potential to achieve greater participation and can ensure equal access to screening services. It also has the possibility of reaching women at higher risk of cervical cancer. Organised cervical screening programs enhance the chances that all categories of women, including older and younger women, will access cancer-screening services. This ultimately, may lead to improved quality of life and wellbeing for women. However, organised cervical screening programs have not been as successful in developing countries as in developed countries (Adageba, *et al.*, 2011; Denny *et al.*, 2006; World Health Organisation (WHO), 2012).

In most developing countries cervical screening starts as opportunistic screening initiated by health professionals or by the patients themselves (Adanu *et al.*, 2012) and the coverage is very low with wide variations (Were *et al.*, 2011 and World Health Organisation (WHO), 2005;). For instance cervical screening coverage is high in Chile (68%) and Costa Rica (77%) but very low or non-existent in most African and Asian countries (Anaman *et al.*, 2016). These differences in screening services in developing countries have been attributed to personal barriers such as lack of information, poor education, attitudes specific to cultural settings and system (external/environmental) issues including cultural factors, unavailability of screening programs, limited human, material and financial resources, poor healthcare infrastructure and competing health priorities (Adamu, *et al.*, 2012; Aswathy *et al.*, 2012; Denny, *et al.*, 2006 and Were *et al.*, 2011). These barriers have not been studied in Uasin Gishu County and this study is positioning itself to examine these barriers.

Visual Inspection with Acetic Acid (VIA)

Although the Pap smear remains the most common screening test for cervical cancer, many less developed countries do not have adequate resources to implement cytology-based prevention programs. An alternative, low-cost test, visual inspection using acetic acid (VIA), has emerged for use in low-resource settings where it can be performed by auxiliary health professionals. VIA is similar to colposcopy in that acetic acid is applied and any acetowhite lesion is visualized, although with VIA there is no magnification (Saleh, 2014).

Visual inspection of the cervix after acetic acid application (VIA) has long been regarded as the most promising method for screening in resource-limited settings. VIA is performed by a trained health care provider who applies a 3% to 5% acetic acid solution to the cervix and then observes the transformation zone of the cervix for 1 to 2 minutes for acetowhite epithelium, which is thought to be indicative of abnormal cellular changes (WHO, 2012).

Cytology screening

Secondary prevention, achieved through Pap smear testing, is the single most effective tool in reducing deaths due to cervical cancer and that between 20-60% of all cervical cancer deaths could be avoided by improving screening (Khani *et al.*, 2015). Most often, cervical cancer is first detected with a Pap test that is performed as part of a regular pelvic examination. The vagina is spread with a metal or plastic instrument called a speculum. A swab is used to remove mucus and cells from the cervix. This sample is sent to a laboratory for microscopic examination (WHO, 2012).

The Pap test is a screening tool rather than a diagnostic tool. It is very efficient at detecting cervical abnormalities. The Bethesda System is commonly used to report Pap test results. A negative test means that no abnormalities are present in the cervical tissue. A positive Pap test describes abnormal cervical cells as low-grade or high-grade Squamous Intraepithelial Lesion, depending on the extent of dysplasia (WHO, 2012).

HPV/DNA screening

Cervical cancer has been recognized as a rare outcome of a common, sexually transmitted infection. Persistent infection with high-risk oncogenic HPV types is a necessary cause of cervical cancer. With optimal testing systems, HPV DNA can be identified in nearly all specimens of invasive cervical cancer and in the vast majority (>95%) of the immediate cervical cancer precursors, namely high-grade squamous intraepithelial lesions (HSILs) - also known as cervical intraepithelial neoplasia 3 (CIN 3) or carcinoma in situ (Neerja and Nidhi, 2009).

The recognition that the vast majority of cervical cancer cases worldwide are caused by a restricted number of viruses, of the Human Papillomavirus (HPV) family, has led to novel opportunities for screening based on the use of tests for HPV exposure (WHO, 2002). Presently, the two assays most widely used for the detection of genital types are Polymerase chain reaction (PCR) with generic primers and the Hybrid Capture 2 assay (Neerja and Nidhi, 2009).

The very high sensitivity (88 to 100%) of HPV testing for high grade cancer precursors and the declining level of HPV detection in normal women over the age

of 30 establishes testing for HPV as a more effective primary screen for women over this age than currently practiced cervical cytology (Ashok and Veena, 2009).

HPV DNA has been obtained from cervical specimens collected by a health-care professional during a pelvic speculum examination at a health-care clinic. However, a recent meta-analysis concluded that there was good to very good concordance between self-collected cervico-vaginal specimens and physician-directed cervical specimens for HPV DNA detection. Unlike physician-collected specimens, self-collection does not require a speculum examination, health-care professionals or a visit to a clinic because women can self-collect a specimen at home. This may be more practical as an initial screen in low-resource settings (Zhao *et al.*, 2011).

The reviewed literature looked into the various cervical cancer screening methods highlighting the merits and demerits of each. Visual inspection of the cervix after acetic acid application (VIA) has long been regarded as the most promising method for screening in resource-limited setting. Even with the various methods of screening and suggestions on the most suitable in resource-poor setting, cervical cancer screening reception levels are still low in Kenya and subsequently in the area of study. This study is thus positioning itself to understand the factors that influence reception levels of cervical cancer control which will advice policy on the same.

2.7.2 Vaccines for cervical cancer prevention

Seventy percent of cervical cancers are caused by two strains of HPV; HPV 16 and 18. HPV is mainly spread through skin to skin sexual contact; both men and women can be infected. Currently, there are 2 vaccines that protect against these strains of HPV; Cervarix and Gardasil. The vaccines are delivered in a series of three shots over six months and work best when received before the vaccine recipient is sexually active. HPV vaccination has the potential to greatly affect public health around the world, as cervical cancer is the leading cause of cancer-related mortality among women in developing countries. HPV vaccination is part of the recommended vaccine portfolio for adolescent females and is an optional vaccine for males (AWHONN, 2009).

Initial indications are that the HPV vaccine is exceptionally effective. A study by the U.S centers for disease control and prevention in June 2013 found that the prevalence of these cancer causing HPV strains had dropped by 56% among the girls since the vaccine's introduction in 2006. Moreover, although the HPV vaccine was initially licensed to address the global burden of cervical cancer, studies have found that HPV is also related to Vulvar, Vaginal, Penile, Anal and Oropharyngeal cancers. The vaccine can thus play a meaningful role in preventing these cancers and mitigating these health threats as well (CDC, USA; 2013).

There are approximately 40 types of genital HPV. Some types can cause cervical cancer in women and can also cause other kinds of cancer in both men and women. Other types can cause genital warts in both males and females. The HPV vaccine works by preventing the most common types of HPV that cause cervical cancer and genital warts. It is given as a 3-dose vaccine (NCIRD, 2014).

WHO recommended in 2007 that HPV vaccination of 9-13 year old girls should be considered as part of comprehensive cervical cancer control through effective, affordable and equitable delivery strategies. A comprehensive cervical cancer control program involving HPV vaccination of the adolescent girls and screening of the adult women has been proved to be the most cost-effective approach to reduce the burden of cervical cancer (Biswas *et al.*, 2013).

Even with WHO's recommendation on HPV vaccination of 9-13 year old girls as indicated in the literature above, HPV vaccination has been shrouded with several attitudes and beliefs that have contributed to its low uptake among women and girls in Kenya. This study therefore comes in handy in trying to understand the KAP that influence the reception of HPV vaccine.

2.8 Influence of traditional medicine on cervical cancer control

Traditional medicines or alternative therapies for cancer treatments are treatments other than conventional surgery, radiation and chemotherapy which are used concurrently with, before or after starting such conventional therapies (Charterjee *et al.*, 2013).

There is widespread frustration among cancer patients concerning conventional medicine's inability to treat many cancers effectively. In the absence of real treatment gains for the majority of cancer and chemotherapy's side effects have become increasingly intolerable to many. Focus on 'natural products' for gentler as well as more effective substitute for standard cancer treatment is a top priority now. In less developed countries majority of cancer patients have less access to

mainstream cancer treatment, many patients with cancer who live in these countries are never seen in a hospital (Silbermann *et al.*, 2013).

Conventional care is rarely free and almost always beyond the reach of many. Lack of proper infrastructure complex social dynamics, ignorance and above all absence of social security schemes plays an important role for selecting alternative cancer therapies that are replacement for the conventional treatment (Chartterjee *et al.*, 2013).

Traditional healers are the major health labor resource in Africa as a whole. In Uganda, indigenous traditional healers are the only source of health services for the majority of the population. An estimated 80% of the population receives its health education and health care from practitioners of traditional medicine. They are knowledgeable of the culture, the local languages and local traditions (Haque *et al.*, 2018).

Traditional medicines were used mainly due to barriers to biomedical care for cervical cancer. The barriers included health system factors, for example long distances to health facilities and unavailability of medicines; health workers' factors, for example negative attitudes towards patients and demands for bribes; individual patient's factors, for example inability to pay for medical care; and socio-cultural beliefs about superiority of traditional medicines and perceived greater privacy in accessing traditional healers (Mwaka *et al.*, 2014).

Marginalised and underserved populations tend to connect more powerfully with social institutions that provide them with a sense of belonging. Up to 80% of South Africa's population consults traditional healers prior to primary health care

consultations, as cervical cancer is often framed in terms of socio-cultural beliefs rather than biomedically (Learmonth *et al.*, 2015).

Barriers to biomedical care and community beliefs in the effectiveness of traditional medicines encourage use of traditional medicines for treatment of cervical cancer but might hinder help-seeking at biomedical facilities. There is need for targeted culturally sensitive awareness campaign to promote effectiveness of modern medicine and to encourage cautious use of traditional medicines in the treatment of cervical cancer (Learmonth *et al.*, 2015).

In many African societies the ascribed causes of diseases are diverse, ranging from the natural to the metaphysical (supernatural) (Manala, 2004; Ojua *et al.*, 2013; Sabuni, 2007). The “natural” is when the explanation of the cause of a disease is similar to the scientific paradigm, whereas the metaphysical is when the source of a disease is attributed to spirits or ancestral mediations (Genuis, 2012).

In the African context, it is commonly believed that the primary origin of illness is supernatural and that bacteria, viruses, and parasites are secondary causes of illness (Ojua, *et al.*, 2013). Therefore, both traditional and western medicine are consulted in traditional African settings to understand and explain the cause of diseases (Fokunang *et al.*, 2012; Langley and Nonhlanhla, 2012a), and the process of seeking treatment could largely be determined by the knowledge and understanding of the causation factor. Where the source of a disease or the causation factor is unknown, the disease is attributed to supernatural causes, and cures or explanations are sought from fetish shrines, diviners or spiritualists, because it is believed western medicine can neither provide cure nor explanation (Fokunang *et al.*, 2012; Ojua & Omono, 2012). This is because it is believed that a disease with an unknown cause or source

is a result of offences against one's own spirit, against an ancestral spirit, against the gods of the land, or due to the neglect or omission of a duty on the part of the victim (Fokunang *et al.*, 2012).

A qualitative study conducted by Birhanu *et al.*, 2012 in Ethiopia aimed to describe the perception of men, women and community leaders regarding cancer awareness and treatment seeking behaviour. In this study, cancer was categorised by the study participants as masculine or feminine (Birhanu, *et al.*, 2012). Masculine cancer was called "Wondie", and according to the participants is fast growing and relatively easy to cure, while feminine cancer was called "Setie", and was considered to have poorer outcomes than "Wondie" (Birhanu, *et al.*, 2012). The participants had very low awareness about cervical cancer and traditional remedies were the most preferred treatment option for the early stages of the disease (Birhanu, *et al.*, 2012). The few participants who knew about cervical cancer said it was caused by one of the following: "Likift" (devil intervention); the wrath of "Attete" or "Wodaja"; failure to carry out proper rituals; evil spirits; urinating in dirty areas when it is sunny; "Mich" (sun allergy) and mismatch of the sizes of the genital organs of the opposite sexes. None of the participants made reference to HPV infection as a causative factor of cervical cancer. Furthermore, the majority believed modern medicine cannot cure cervical cancer because cervical cancer is caused by supernatural powers, the devil and punishment for violating normal sexual behaviour (Birhanu, *et al.*, 2012).

From the reviewed literature it is clear that traditional medicine/traditional plays a key role in influencing the health seeking behavior of individuals and communities especially in the African context. In Uasin Gishu County the influence of

traditional/herbal medicine on uptake of cervical cancer control services has not been studied which the current study is delving into.

2.9 Accessibility to health facilities and uptake of cervical cancer control services

In Kenya, Cervical cancer screening occurs, but only in a few selected sites and in disjointed projects rather than a full-fledged national-level program. This explains why screening coverage is still negligible. Furthermore there is lack of additional diagnostic and treatment options at the secondary levels of care. Additionally, the link between screening and treatment has been dysfunctional (NCCPP, 2012).

The main challenges to increasing access to cervical cancer screening services include inadequate equipment and supplies; lack of treatment facilities when there is pre-cancer or cancer diagnosis; inadequate monitoring and evaluation – especially data collection and management. The HPV vaccine that could be used in primary prevention is also not provided as part of the national vaccine and immunization program (Morema *et al.*, 2014).

National Reproductive Health policy (2006) recommends that, the government to avail cervical cancer screening services at the primary health care level where the majority (80%) live. This primary health care to include: district hospitals, health centers, dispensaries and faith based facilities also to provide the services. Inadequate equipment and supplies (despite the fact that these are inexpensive for visual screening methods), the government should provide in all the institutions to increase the screening of cervical cancer. Were (2011) argues that Strengthen referral system for cervical cancer program (linkages); Improve facility and community Health information system (general records and referral forms); Improve/strengthen

communication system between the different levels; Establish a referral directory will enable access to uptake of screening cervical cancer. Availability of trained health personnel at all levels to provide cervical cancer screening and treatment services; Provision of facilitative supervision, refresher training and on job certification by the Reproductive Health Training and Supervisory Teams to enable them to maintain or enhance their skills will enhance the uptake of screening cervical cancer (NACCPP, 2012).

Ngau (2014) argues that there is need to strengthen patient advocacy in international settings to build a global grassroots movement [that portrays] accurate perceptions of cancer; prevent stigma from inhibiting people in their cancer control efforts; help people affected by cancer receive the support, services, and information they need in order to help decrease the global cancer burden.

PATH Report (2004) carried out in western Kenya, proposes integration of cervical cancer prevention into existing MCH/FP services, Comprehensive care clinics, and routine gynecology services. This is because cervical cancer prevention services use personnel and other resources, such as materials, space, equipment, supplies, and reporting systems, similar to those in these service areas. The result will be a more cost-effective, more efficient to manage, more convenient and acceptable service for clients. However to increase the chances of reaching the 70% coverage, organized mass screening activities should also be undertaken (Ichaminy, 2015).

To further this augment, a single visit see and treat (SVA) approach is recommended. Where SVA is not possible due to unavailability of supplies, equipment or trained personnel, or in cases where other screening methods e.g. cytology are used, the recommended service model will be a screen- reevaluate/diagnose -and-treat

approach for pre-cancerous lesions (sometimes referred to as —see, see, and treat). This involves screening routinely at the primary level followed by referral of screen-positive clients to the secondary level where specially trained providers can reevaluate or perform diagnosis and offer pre-cancer treatment or further referral as needed (NCCP, 2012).

Reproductive Tract Cancer Programme (2010) is a designed model to give women complete care in one visit, and to minimize the number of visits for screen-positive women within a safe and efficient treatment strategy. Cervical cancer screening will also be integrated into other RH outreach activities e.g. during integrated RH/FP camps, and campaigns during the cancer awareness month in order to reach more women especially in hard to reach areas (Buziba *et al.*, 2011).

2.10 Issues in cervical cancer screening and treatment in resource limited settings

While developed countries have succeeded in reducing cervical cancer incidence due to developed infrastructure and cytology, most countries in developing world and especially Sub-Sahara Africa cannot be said of the same. These countries still face great challenges and failures of cytology screening programs or sustainability of such programs if in existence (Chary and Rohloff, 2014).

Unique characteristics of geography, environment, education and low resource require innovative strategies to appropriately reach and serve women. Initiatives based on the standard cytology colposcopy treatment model may lead to harm in the face of inadequate transportation, lack of staffing and prolonged turnaround time (Arrossi *et al.*, 2010).

Studies have shown that the most efficient and effective strategy for secondary prevention of cervical cancer in low resource settings is to screen using either HPV/DNA testing or VIA then treat pre-cancerous lesions using cryotherapy (freezing). This is optimally achieved in a single visit (currently possible with VIA plus cryotherapy) and can be carried out by competent physicians and non-physicians, including nurses and midwives (Shiferaw *et al.*, 2016).

Most countries in resource limited settings face various challenges which include health needs, limited human & financial resources, poorly developed healthcare services, women are uninformed & disempowered, War & civil strife as well as wide spread poverty. All these factors among others hinder successful implementation of organized cervical cancer screening and treatment programs in the resource limited settings (Narasimhan *et al.*, 2015).

In order to overcome such challenges towards the provision of quality service in low resource settings, Denny *et al.*, 2012 suggests the following requirements as essential;

- i) Screening, diagnosis and treatment provided on-site, or in clinics accessible to the majority of at-risk women;
- ii) Low-cost, low-technology screening test that can lead to immediate treatment of abnormalities;
- iii) Wide coverage of women at risk
- iv) Appropriate educational programmes directed towards health workers and women to ensure correct implementation and high participation
- v) Built-in mechanism for evaluation of the screening programme.

With these essentials, they suggest Visual inspection as a cost effective screening method in low resource settings as well as see-and-treat approach towards the treatment of the abnormalities realized.

In low-resource settings, the optimal age-group for cervical cancer screening to achieve the greatest public health impact is 30–39-year-olds. Screening is considered optimal when the smallest amount of resources is used to achieve the greatest benefit (McGraw and Ferrante, 2014).

Most countries in resource limited settings face various challenges necessitating development of cost effective screening methods such as the VIA. However, even with these developments reception levels are still low and this study will fill this gap in understanding the reasons behind this low uptake.

2.10 Influence of women’s health seeking behavior on cervical cancer control

Assuring high levels of participation in screening (i.e., coverage) and follow-up is essential for effective cervical cancer prevention. However, for the most part, screening coverage in developing countries is extremely low, resulting in high morbidity and mortality due to cervical cancer (Ali *et al.*, 2012).

There is evidence to suggest that client factors influence the uptake of cervical screening by women as consistently reported among different populations including Asians, Caucasian and Latin-American women. Such factors include women’s knowledge, beliefs, and attitudes towards cervical cancer and screening (Abiodun *et al.*, 2014).

The uptake of cervical cancer screening in many developing countries such as Kenya is still poor due to various factors. Demographic characteristics include education, age, and marital status. In regards to education level, several studies have found that women with high screening rates have a high level of education. However, women with high education may not necessarily seek screening thus, additional factors must be considered. (Ramathuba *et al.*, 2016).

Rates of screening are substantially lower in younger women aged 20-29 years and elderly women aged 60 years and above. Also, unmarried and widowed women are more likely than married women or women living with a partner to obtain screening. Perhaps negative attitudes among the male partners, who may serve as key decision-makers, prevent women from seeking screening services. The man's role may, thus be important to take into consideration to determine whether women will access screening (Zagrosek, 2012). In addition to knowledge, women's attitudes toward screening may be relevant. In Thailand, researchers found that female sex workers with negative attitudes about Pap smear services were less likely to have ever had a cervical smear taken than those with a positive attitude (Lyimo *et al.*, 2012).

Also, in Somalia women developed a negative outlook on screening due to embarrassment associated with female genital mutilation. Other cultural barriers may lead to negative opinions about screening including concern about exposure of private body parts (Abdullahi *et al.*, 2009). While a lot is thus being done to develop new screening technologies, there is need to assess the health seeking behavior of women meant to benefit from such new approaches. Identification of characteristics of women, their perceptions of own risk and barriers to accessing existing screening services can provide important information for shaping screening services as

developing countries prepare to adopt emerging and more affordable technologies such as visual inspection approaches (Were *et al.*, 2011).

From the reviewed literature it is evident that even with the advent of new screening technologies, there is need to assess the health seeking behavior of women meant to benefit from such new approaches. Results from this study will thus come in handy in understanding the factors that influence the health seeking behavior.

2.11 Cultural beliefs and attitudes to cancer

Culture influences the community's views toward health, poverty, welfare, crime, and other social and human services areas, in addition to outcomes of public agency services and interventions. Understanding these concepts enables public service delivery providers to avoid stereotypes and biases, as well as promote positive characteristics of particular groups (Hall *et al.*, 2015).

Behaviours associated with health are largely influenced by cultural beliefs. For instance, there are cultural differences in defining sick roles. In some cultures, the sick role is assumed when there is manifestation of symptoms of a disease, and as soon as the symptoms disappear the sick role is no longer valid (Chang & Kelly, 2007). For others, the lack of resources for medical care and the fatalistic acceptance of diseases may influence the decision to seek treatment (Wight *et al.*, 2012).

Cultural attitudes and beliefs have been shown to influence the effectiveness of cervical screening programs in most developing countries (Adamu, *et al.*, 2012; Were, *et al.*, 2011). Misconceptions, beliefs, lack of comprehension of the screening process, risk perception, lack of awareness, non-availability of screening centres, female circumcision (female genital mutilation/cutting or FGM/C), lack of finance,

and lack of support from male sexual partners are some of the reasons for non-participation in cervical screening identified in the literature (Abdullah *et al.*, 2012; Birhanu, *et al.*, 2012; Were, *et al.*, 2011; World Health Organisation (WHO), 2006). Such barriers to cervical screening are major factors that may influence a woman's health seeking behaviour and her decision to participate in a cervical screening program.

To provide some insight into the health treatment-seeking behaviours of girls and women who have experienced FGM/C, Bjälkander *et al.*, 2012 conducted research among girls and women attending women's health clinics in Sierra Leone and found that over 80% of study participants sought treatment from traditional healers and less than 10% from a health professional (Bjälkander, *et al.*, 2012). Even though the psychological effects associated with FGM/C are not well elucidated, the scarring and mental trauma experienced may evoke anxiety and phobic behaviour in women which prevents them from participating in medical procedures such as cervical screening that may involve examination of the female genital area. Strategies to minimise these barriers should be socially and culturally appropriate.

Cancer in the modern western world is often viewed as a disease brought upon oneself through irresponsibility, either by indulging in bad diets, smoking or by suppressing negative thoughts (Andersen, 2013). All of the Black and Minority Ethnic (BME) groups associated cancer with certain death and felt it was not talked about within their communities. There was a superstition that talking about it would enhance its malevolent power: '...most African people don't like to talk about...that they have got cancer. They just see it as a taboo; in fact, I know a lot of people who do not even mention the word cancer. Before I had cancer I wouldn't mention the

word, I would just say that “c” thing...’. Some cancers were seen to be more taboo than others as implied in the following quote: ‘If it’s cancer of the cervix or the uterus it makes it even worse, that is really taboo, nobody wants to talk about it’(Thomas *et al.*, 2005). A similar cultural finding was revealed in the Scanlink projects carried out in Newham and Watford where South Asian women considered cervical cancer to be caused by promiscuity and was, therefore, considered ‘a just punishment from God’ (Thomas *et al.*, 2005).

It is evident from the literatures that cervical cancer is shrouded with several misconceptions, attitudes and beliefs that eventually influence its control. Information about barriers women face in seeking cervical screening services can guide the implementation of culture specific screening programs. In addition, when making a decision to participate in regular cervical screening, it is important for women to be well informed about screening practices and also for them to have basic knowledge about cervical cancer as well as the benefits of screening. From an etic perspective, the understanding of the local perception of health needs, health decision making, concerns and considerations of a specific group of people are key components to the understanding of health seeking behaviours for any health condition (Birhanu, *et al.*, 2012). Given that the African continent is culturally diverse, the screening needs of African women may differ across and within countries.

2.12 Health education, health promotion and behavior change

The concepts of health education and health promotion are geared towards improving people’s lives. Health education according to Green and Kreuter (1999a), means achieving desirable health outcomes based on experience while health promotion is

the combination of educational and supportive environments conducive to health. The aim of health education is to equip an individual with knowledge, understanding and personal skills so that they can make informed decisions that can lead to improvements in health (Keleher & Murphy, 2004). Health promotion activities create opportunities for individuals, communities and populations to understand the factors that impact health and wellbeing and take necessary actions (Center for Health Promotion, 2011). In other words, health promotion is an active process for people to improve their health and wellbeing (World Health Organisation (WHO), 2009). The provision of relevant health-related information is a health education activity and a process of health promotion (Keleher & Murphy, 2004; Kok, *et al.*, 2004). Although health education and health promotion activities are both concerned with improving people's health, the steps involved are different.

Both health education and health promotion target health behaviours (Glanz, *et al.*, 2008). Health behaviours are “personal characteristics such as beliefs, expectations, motives, values, perceptions and other cognitive elements; personality characteristics, including affective and emotional state and traits and overt behaviour patterns, actions and habits that relate to health maintenance, health restoration and health improvement”. The positive changes in health behaviour are the ultimate aims of health education and health promotion programs (Glanz, *et al.*, 2008) thus strong efforts have been devoted to developing techniques that will change behaviour. The belief that increased knowledge will lead to an attitudinal change which will eventually influence a person's behaviour has informed many behaviour change interventions over the years (Keleher & Murphy, 2004).

Health promotion outcomes are the desirable changes in the health of an individual or group of people as a result of intervention or series of interventions (Nutbeam, 1996). These health outcomes can be arranged in hierarchies explaining the linkages between health promotion actions and factors influencing health and subsequent health outcomes (Kumar and Preeth, 2012).

The acceptance of health information by an individual is largely dependent upon their health literacy level (Keleher & Murphy, 2004). Fundamentally, health literacy is a person's ability to access and process health information to the benefit of a person's health status (Keleher & Murphy, 2004). There are three levels of literacy: basic/functional literacy includes basic skills in reading and writing and to be able to communicate effectively in daily everyday situations. Communicative/interactive literacy involves more advanced cognitive, literacy, and social skills that help a person to be actively involved in everyday activities, deduce information and derive meaning from different forms and levels of communication, and to apply new information. The third level is critical literacy which involves more advanced cognitive skills which, together with social skills, can be applied to critically analyse information and to use this information to exert greater control over life events and situations (Sykes *et al.*, 2013). In the model of health promotion outcomes, health literacy is individual's knowledge of health related information and the ability to use this information to promote or maintain good health (Sykes *et al.*, 2013).

2.13 Socio-cultural constraints that impact on African women's health seeking behaviour

Cultural diversity is a known characteristic of the African continent (Foley, 2011). Although cultural characteristics vary both across and within African countries, there

are similarities in cultural practices across Africa that may impact on the health status and health-seeking behaviours of African women. For instance, patriarchal culture: a system of social stratification that defines the role of men and women in relationships is a major feature in most traditional societies in Africa (Coetze, 2001; Makama, 2013).

Patriarchal culture provides material advantage to men and places severe constraints on women (Makama, 2013 and Parpart, 1995), thus creating social barriers for women, such as inequalities in marriage, education and employment. In social life, the interpersonal relations in families, schools, churches and workplaces are largely regulated by the dominance of males (Johnson *et al.*, 2012). In a traditional African society, the gender norms make men the primary authority in sex and reproductive health decision making while women are in a subordinate position with no control over sexual matters, such as the ability to negotiate safe sex (Madiba and Ngwenya., 2017). The double standards on sexuality deny women the ability to refuse sex or negotiate condom use, while at the same time African men are allowed to have multiple sexual partners. As a result, women may not be able to protect themselves against sexual infections and unwanted pregnancies (Madiba and Ngwenya., 2017).

The socio-cultural differences between men and women in the African context can have detrimental effect on a woman's health. Traditionally, an African man could have more than one wife if his wealth permitted. Urbanisation and modernisation has influenced this cultural norm and has increased the chance of a man having other sexual partners as opposed to wives (Techasrivichien *et al.*, 2016). Although women may be aware that their partners have other multiple sexual partners, they often feel powerless to protest, and find it much harder to change their circumstances than to

just accept their fate. The social and family role of many African women is to be a housewife, a mother and a caregiver, fulfilling family and gender obligations through pregnancy and childbearing (Sumra and Schillaci, 2015).

In addition to suffering from inequalities in marriage and sexual relations, most women have less access to education, employment and health information and are economically dependent on their male. Depending on sexual partners for financial or economic support is a significant obstacle to sexual decision-making, as the fear of losing this support may pressure the women into pleasing men, including having unprotected sex, thus putting them in a vulnerable position by increasing their risk of sexually transmitted infections such as HPV partners (Biello *et al.*, 2010).

These socio-cultural factors can prevent open discussions about sexual health or sex education which reduces the opportunities for women to learn about sexual health issues (Roudsari *et al.*, 2013). Knowledge about the cause of diseases is central to both modern and traditional medicine systems, because health seeking behaviour is, to a very large extent, dependent upon the understanding and interpretation of the cause of illness (Abubakar *et al.*, 2013).

Studies have documented that a host of psychological and socio-cultural factors contribute to nonparticipation in cervical cancer prevention, including limited knowledge about cervical cancer and screening; stigma, cultural beliefs, and perceptions related to the reproductive organs and symptoms; limited finances; lack of time; and not wanting to know more about cervical cancer status (Ports, 2015).

In South Africa, formative research uncovered the Xhosa belief that the health of a woman's womb reflects the health of the woman as a whole and that healthy wombs

are associated with virginity, pride, and motherhood. Care of the womb was associated with cleansing rather than seeking health, especially for older, less sexually active women past their childbearing years (Engender Health, 2002). Research results also indicated that gender norms among the Xhosa people inhibited women who had undergone treatment for precancerous lesions from negotiating the recommended four week period of sexual abstinence after treatment (Engender Health, 2002).

Focusing on the community in cervical cancer prevention activities matters because a woman's ability to make an informed decision—and act on that decision—to receive cervical cancer screening and treatment services is influenced not only by her own beliefs and behavioral patterns, but also by existing social networks and institutions, or community.

Social networks include a woman's partner, family, friends, neighbors, members of women's groups, religious groups, or associations with which she may be affiliated. Institutions include local administrative structures, health delivery structures, schools, or other civic associations that could support a woman's decision and ability to seek service (ACCP, 2013).

Several psychological and socio-cultural factors contribute to nonparticipation in cervical cancer prevention in various settings as evidenced from the above literature. This study will thus explore these socio-cultural factors alongside knowledge, attitudes and practices and from the results recommend acceptable sustainable strategies.

2.14 The role of men in cervical cancer control

Despite being preventable with early screening and treatment, cervical cancer is a leading cause of cancer related mortality among women in developing countries such as Kenya. This high burden of disease is largely a result of lack of access to screening services and inadequate screening uptake due to female patients' limited knowledge or fears about screening. Research has also suggested that a lack of male involvement may be an overlooked obstacle to cervical cancer screening (Rosser *et al.*, 2014).

The World Health Organization has recommended integrating men in the prevention of cervical cancer in middle and low-income countries, yet male knowledge and attitudes about cervical cancer screening have not been well-studied in these settings (Rosser *et al.*, 2014).

Some women reportedly do not seek cervical cancer screening or attend follow-up visits because their male partners provide little support or actively oppose their participation in screening services. Involving men in cervical cancer prevention activities is essential because it allows them to understand cervical cancer screening so that they can be supportive in their communities and to the women in their lives who decide to participate in screening. In addition, men must be supportive if their partners are treated for precancerous lesions and respect the four-week abstinence period that follows cryotherapy (Ngan *et al.*, 2011).

In Kenya, data from follow-up interviews with women who received cryotherapy treatment indicated that emotional or financial support by a male partner was

essential to women seeking treatment and complying with post treatment recommendations (Mwangi, 2015).

Several Alliance for Cervical Cancer Prevention (ACCP) projects developed strategies for increasing men's involvement in cervical cancer prevention activities by reaching out to men in their communities. For example, in El Salvador, workshops were designed to train community health workers on masculinity issues, gender roles, and risks related to cervical cancer so that they could work with men on cervical cancer issues more effectively (ACCP, 2014).

In India, men were integrated into counseling at health facilities where social workers and medical staff conducted group meetings to which eligible women and their husbands and families were invited. Information about the importance of cervical cancer prevention was presented and the times screening was offered, transportation arrangements, and what to expect during screening were discussed (Bassett and Walensky, 2010).

In Ghana, men are directly involved in women's decisions to obtain screening and treatment because they often are required to give their wives permission to seek care. Some men were reluctant to allow their wives to be screened, and others acted as barriers to obtaining treatment for detected precancerous lesions (Aborigo *et al.*, 2018). Qualitative research results revealed that men wanted to become educated about their wives' health. Although activities did not specifically target men, they sometimes joined their female partners in attending educational sessions about cervical cancer held at local child welfare clinics. During a five-month period in which project staff evaluated the outreach effort, 422 men (eight percent of all

attendees) were reported to have attended educational sessions (Aborigo *et al.*, 2018).

It is evident from the preceding literature that men have a great influence on their women's participation in cervical cancer control. It is however sad that male knowledge and attitudes about cervical cancer screening have not been well-studied in these settings. This study is therefore positioning itself to fill this gap through understanding the role of men in cervical cancer control.

2.15 Identifying the characteristics of underserved Women

Identifying the characteristics of women who participate in screening assists programs in tailoring their services to reach all women and increase coverage rates. Evidence published in the last ten years (primarily from developed countries) has shown that, in general, women who were older and single; had lower educational and income levels, no previous contact with the health system, a negative perception of the quality of care offered by the health system, and little knowledge of screening; and were most anxious or fearful about screening and were least likely to participate in screening opportunities (IARC, 2014).

Five studies conducted by ACCP partners in South Africa, Peru, Kenya, and India investigated the determinants of screening participation. These studies highlighted the characteristics of underserved women in developing countries and enabled a comparison of these characteristics with those of women from developed countries. This information was used to develop and refine strategies oriented toward increasing screening participation. Results indicated that women in India and South Africa who were less educated, had lower socioeconomic status, and had less contact

with the health care system were least likely to participate in screening. This is consistent with results from similar studies conducted in developed country settings. Results from the study in South Africa indicated that women who did not access screening services tended to be older (45 years or older), poorer, less educated (less than ten years of education), unemployed or working in the informal sector, living in nonpermanent dwellings without a partner, not familiar with other women who had undergone screening, and were not regular clients of health care or family-planning services (ACCP, 2004)

In India, quite unexpectedly, higher income was inversely associated with screening participation. This atypical pattern differed from results from most studies evaluating determinants of participation. The reason for this pattern may be that in India use of rural public services is quite low, mainly as a result of the low quality of services, and higher-income women may tend to seek out private-sector services (ACCP, 2004). Organizing screening clinics in public institutions, such as health centers or schools, may have deterred higher-income women from attending screening services because of their perception that low-quality services were being provided (Modibbo *et al.*, 2016).

2.16 The role of key stakeholders and local organizations

Key stakeholders include representatives from local women's organizations or community-based organizations; local and regional government officials; representatives from local religious and educational institutions; community leaders, such as village elders and leaders; and health workers and local health institutions. Because cervical cancer prevention programs must address the cultural, emotional, and practical factors that influence whether women use screening services, key

stakeholders can provide critical input in the design and implementation of program activities to make the activities culturally relevant (Ncube *et al.*, 2015). Interacting with these individuals and including them in program efforts helps ensure that important factors influencing service utilization and acceptability are not overlooked. For example, involving community leaders so that they recognize and sanction the need for a pelvic examination during screening can help deflect potential problems with community acceptance of screening procedures. Effective linkages with key stakeholders can also dispel rumors that may arise (Ncube *et al.*, 2015).

In Kenya, several rumors related to cervical cancer screening emerged once screening activities were initiated in previously underserved areas. One rumor suggested that the screening service was a form of devil worship because of the red color used in the project logo (which was hung above the screening room at each participating screening facility and included the colors red and blue). Another rumor claimed that the screening test involved removing the uterus, cleaning it, and then putting it back in the woman's body. Others claimed that the screening test was actually an HIV test. As these rumors emerged, community health workers notified their supervisors who worked to identify the source of the rumors by speaking to key stakeholders, including clerics and civic leaders, and dispel the rumors with correct information. Community health workers, in turn, were briefed on how to respond to these rumors with factual information (ACCP, 2004).

Another way to involve key stakeholders is to use knowledge and community structures and/or existing community networks. In Peru, two local nongovernmental organizations worked with the MOH and project staff to design the project's approach to community involvement. Existing knowledge was tapped by hiring

women who were well acquainted with the community through their work as local community health activists. They advised project staff about the best ways to structure and implement community involvement activities to promote cervical cancer prevention (Ndejjo *et al.*, 2017).

In India, the involvement of community leaders in project activities was essential to ensuring high levels of participation. In Ambilikai, meetings were held with district administrative and health authorities, the president and members of local civic bodies (panchayaths), village community leaders, teachers, and representatives from other local organizations to discuss project objectives and ways of reaching women before the start of project activities. As a result, most community leaders participated actively in outreach activities. For example, during the community health education event that took place before each screening clinic, leaders openly expressed their strong support for screening activities and personally encouraged men to convince women in their families to participate (ACCP, 2004).

2.17 Guidelines on cervical cancer screening in Kenya

Government policy and Guidelines reflect best practice in the management of cancer in Kenya and beyond. The interpretation and use of the information contained in this publication is highly recommended to guide practice, however, the clinical judgment of a certified healthcare professional, in consultation with relevant specialists, may be exercised in certain circumstances. The regular and consistent use of the guidelines by clinicians countrywide, will improve the management of cancer in Kenya, and thus help reduce the morbidity and mortality attributed to cancers (MOH, 2013).

The cervical cancer screening guidelines (2013) recommends Public health education as a primary prevention; which involves raising public awareness on the risk factors for cancer and providing education on ways of reducing these risks. This should result in behaviour change, which often occurs over a long period of time and may be difficult to quantify. Education on the benefits of early diagnosis, ways of detection and screening should also be provided. These preventive measures should be highly promoted. Increased awareness of warning symptoms and signs of cancer and taking prompt action, by the general public as well as physicians, nurses and other health care providers, can have a great impact on the disease through early diagnosis and hence more effective management (Mueke *et al.*, 2012).

National Cervical Cancer Prevention Plan (2012), advocates for increasing accessibility by; informing the public of available services and where to get them, involvement of community leaders to provide valuable support for outreach efforts and adequate allocation of local resources for essential screening and treatment services. Male partners and other community members must support women's decisions to seek screening and to go for treatment when it is needed. Multi-sectorial involvement by governmental and nongovernmental agencies should be imperative for the success of this strategy (Ichaminya, 2015).

National Cancer Treatment Guidelines (2013) recommends options for financing screening and treatment should include insurance through the N.H.I.F, private insurance or Out of Pocket expenditure. The latter is usually not sustainable. Health providers should educate clients on these options and guide them on how best to access financing (Ichaminya, 2015). Odongo (2012) suggests that in view of the fact that the Government has limited resources to effectively implement the Cancer Control Strategy, a multi-sectorial approach, embracing Public Private Partnerships

(PPP), will be effected. Several areas of cancer management are amenable to implement PPP e.g. prevention strategies, capacity building, optimizing diagnostic facilities, pharmaceutical firms for subsidized costs of health products etc. Other modalities, such as placement of equipment's in the public sector by the private sector, will be employed (Ichaminy, 2015).

2.18 Conceptual framework

Many theoretical approaches to health-related behaviours are largely based on the social and behavioural sciences (Davis *et al.*, 2015). Some of the theories that have been commonly used in health promotion include the theory of Planned Behaviour (Ajzen, 2002), the Social Cognitive Theory (Bandura, 2001) the Health Belief Model (HBM) (Becker, 1974) PRECEDE-PROCEED model (PPM) (Green & Kreuter, 1999b) and the Expectancy Theory of Motivation (Vroom, 1964). These theories attempt to identify and explain key factors and pathways influencing health related behaviours such as cancer screening (Sedigheh, 2012; Thomas *et al.*, 2005), quitting smoking (Macy *et al.*, 2011; Rise *et al.*, 2008), physical activity (Gristwood, 2011; Hu *et al.*, 2010; Kasser and Kosma, 2012), and health promotion behaviours in general (Ersin & Bahar, 2011) as cited in Anaman *et al.*, 2016).

Three categories of health behaviour theories or models have been commonly used to predict and explain behaviours at different levels: intrapersonal theories, interpersonal theories, and community/group level models (Esperat *et al.*, 2008). At the intrapersonal level, the focus is on the individual as the core unit: the individual's cognitive appraisal of health problems and outcomes. It is assumed that at the interpersonal level, people's behaviour and health outcomes are likely to be influenced by their interaction with the social and/or physical environment. The

community and group level models focus on the process of social change to explain health behaviours of a population and system (Esperat, *et al.*, 2008). A number of health behaviour models including the HBM fall within the intrapersonal level of influence because they emphasize cognitive and behavioural factors (Esperat, *et al.*, 2008).

2.18.1 Expectancy theory of motivation

Vroom's expectancy theory assumes that behavior results from conscious choices among alternatives whose purpose it is to maximize pleasure and to minimize pain. It refers to any situation or context where people have expectations from whatever they do. It states that —motivated behaviour is increased if a person perceives a positive relationship between effort and performance – i.e. the outcome (Vroom, 1964). This theory is quite relevant in the current study where, when women in reproductive age know the importance of going for cervical cancer screening; they will be motivated to take up the screening service. The importance will include; detection of cancerous cells in early stages and treatment will be initiated to cure and eliminate complications that could have a raised if left untreated. The effort made by these women will be of importance to their own health. The outcome will be good reproductive health which will reduce development of reproductive cancers, increase in productivity in terms of reduced time wasting in search of medical care is minimized and economic improvement as the funds that could be used in treatment is saved and diverted to more productive projects. Therefore, an individual is likely to take up screening if: he/she is motivated highly about his/her health; believes he/she is susceptible to develop cancer; understands the seriousness of getting cancer; and believes the benefits of the screening procedure and taking time off work to take up

screening far outweigh the pain and discomfort associated with the procedure and the cost of lost pay.

2.18.2 The theory of planned behavior

The Theory of Planned Behavior (TPB), an extension of the Theory of Reasoned Action, is one of the most widely employed social-cognitive theories used to understand the relationship between intentions and behavior (Ajzen, 1991). According to the TPB, the intention to perform a behavior directly predicts engaging in that behavior. The best predictor of behavior is intention. Intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. This intention is determined by three things: their attitude toward the specific behavior, their subjective norms and their perceived behavioral control. The theory of planned behavior holds that only specific attitudes toward the behavior in question can be expected to predict that behavior. In addition to measuring attitudes toward the behavior, we also need to measure people's subjective norms – their beliefs about how people they care about will view the behavior in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes. Finally, perceived behavioral control influences intentions. Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior. These predictors lead to intention (Conner *et al.*, 2013).

A general rule, the more favorable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behavior in question. Further, when an individual's perceived behavioral control reflects the degree of actual control over engaging in a behavior, perceived

behavioral control can directly influence engaging in the behavior. The intention to perform the behavior is an indication of the degree to which an individual is ready to perform a given behavior and actually performing the behavior is the observable response to the behavior. Attitude toward the behavior is defined as the degree to which the individual views engaging in the behavior as positive or negative. The subjective norms construct is defined as the perceived social pressure to engage or not engage in the behavior. Finally, perceived behavioral control is defined as the perceived ability to successfully perform the behavior (Conner *et al.*, 2013). In the current study, the intention to go for cervical cancer screening depends on women's attitude, their subjective norms and their perceived behavioral control. Where when their attitude towards cervical cancer control services is positive, their intention to go for screening would be heightened. Again the social pressure from people who have an influence in the lives of these women such as loved ones and other social networks have an influence on the behavior towards cervical cancer control interventions. Finally when women perceive to have control over their choices as far as cervical cancer control is concerned, their attitude and intention towards utilizing it is improved.

2.18.3 The PRECEDE-PROCEED Model (PPM)

The PPM is more of an ecological approach to health promotion (Crosby & Noar, 2011). It is an interpersonal level model because health is viewed as a function of individuals and their environment: family, social network, organizations, community and public policies (Kok *et al.*, 2004). It broadly combines social, epidemiologic, behavioural, environmental, educational and organisational perspectives of health problems within a community context (Gielen and McDonald, 2002; Green & Krueter, 1991). The model allows for the consideration and influence of

environmental factors that may affect screening behaviours as well as individual and while theories such as the HBM are sets of testable propositions that help to explain and predict behaviours (Glanz, *et al.*, 2008), a planning model such as the PPM exists at a macro level framework for an entire health promotion effort (Crosby & Noar, 2011).

The PPM emphasizes a comprehensive diagnosis of educational, behavioral and attitudinal problems, the desired outcome, the context of the client, and the identification of potential barriers that could influence the desired outcome (Green & Kreuter, 2005). It is multi-dimensional in nature, drawing on social and behavioural science, epidemiology, administration and education (Green & Kreuter, 2005). The theory was found relevant to the current study in that it gives cognizance to the fact that knowledge or awareness, behavioral and attitudinal factors could influence the desired outcome.

2.18.4 The Health Belief Model (HBM).

The HBM is said to be one of the oldest, most commonly used and most resilient models used to predict or explain health behaviours (Esperat, *et al.*, 2008; Finfgeld *et al.*, 2003; Redding, Rossi, Rossi, Velicer, & Prochaska, 2003 Correa-velez and King, 2016 as cited in Anaman *et al.*, 2016). The HBM is a psychological model that attempts to explain and predict health behaviors. This is done by focusing on the attitudes and beliefs of individuals. The HBM was first developed in the 1950's by social psychologists Hochbaum, Rosenstock and Kegels working in the U.S Public Health Services (Rosenstock, 1974). The HBM has been widely used in the area of cervical cancer screening and found to be useful in predicting women's health

behaviours (Abotchie & Shokar, 2009; Guvenc *et al.*, 2011; Ma *et al.*, 2013; Sedigheh, 2012; Thomas, *et al.*, 2005 as cited in Anaman *et al.*, 2016.

The HBM was spelled out in terms of four constructs representing the perceived threat and net benefits: perceived *susceptibility*, perceived *severity*, perceived *benefits*, and perceived *barriers*.

Table 2. 1 Definition of health belief model concepts

Concept	Definition	Application
Perceived Susceptibility	Beliefs about the chances of experiencing a risk or getting a condition or disease.	Define population at risk, personalized risk based on a person's characteristics or behavior and make perceived susceptibility more consistent with individual's actual risk.
Perceived Severity	Beliefs about how serious a condition and its development are.	Specify consequences of risk and conditions
Perceived benefits	Beliefs in efficacy of the advised action to reduce risk or seriousness of impact	Define action to take; how, where and when. clarify the positive effect to be expected
Perceived barriers	Beliefs about the tangible and psychological cost of the advised action.	Identify and reduce perceived barriers through reassurance, correction of misinformation, incentives and assistance
Cues to action	Strategies to active "readiness"	Provide how-to information, promote awareness, use appropriate reminder system
Self-efficacy	Confidence in one's ability to take action.	Training and guidance in recommended action, progressive goal getting, verbal reinforcement, demonstrate desired behaviours and reduce anxiety

Sourced from: (Glanz, *et al.*, 2008)

These concepts were proposed as accounting for people's "readiness to act." An added concept, *cues to action*, would activate that readiness and stimulate overt behavior. A recent addition to the HBM is the concept of *self-efficacy*, or one's confidence in the ability to successfully perform an action (ibid). The perceived need for cervical cancer control is influenced by a number of psychological factors. These factors combine to influence a person's view of the threat associated with cancer. In addition, people need cues to put into action, such as knowledge of cervical cancer and its preventive measures, health promotion advice, mass-media campaigns, and recommendation for screening among other cues. However, the actual likelihood of a person taking up screening depends on the perceived benefits minus the perceived costs (Rosenstock, 1974).

The conceptual framework examined and explained the influence of knowledge, attitudes and social-cultural factors in influencing the uptake of cervical cancer control services as illustrated in Figure 2.2.

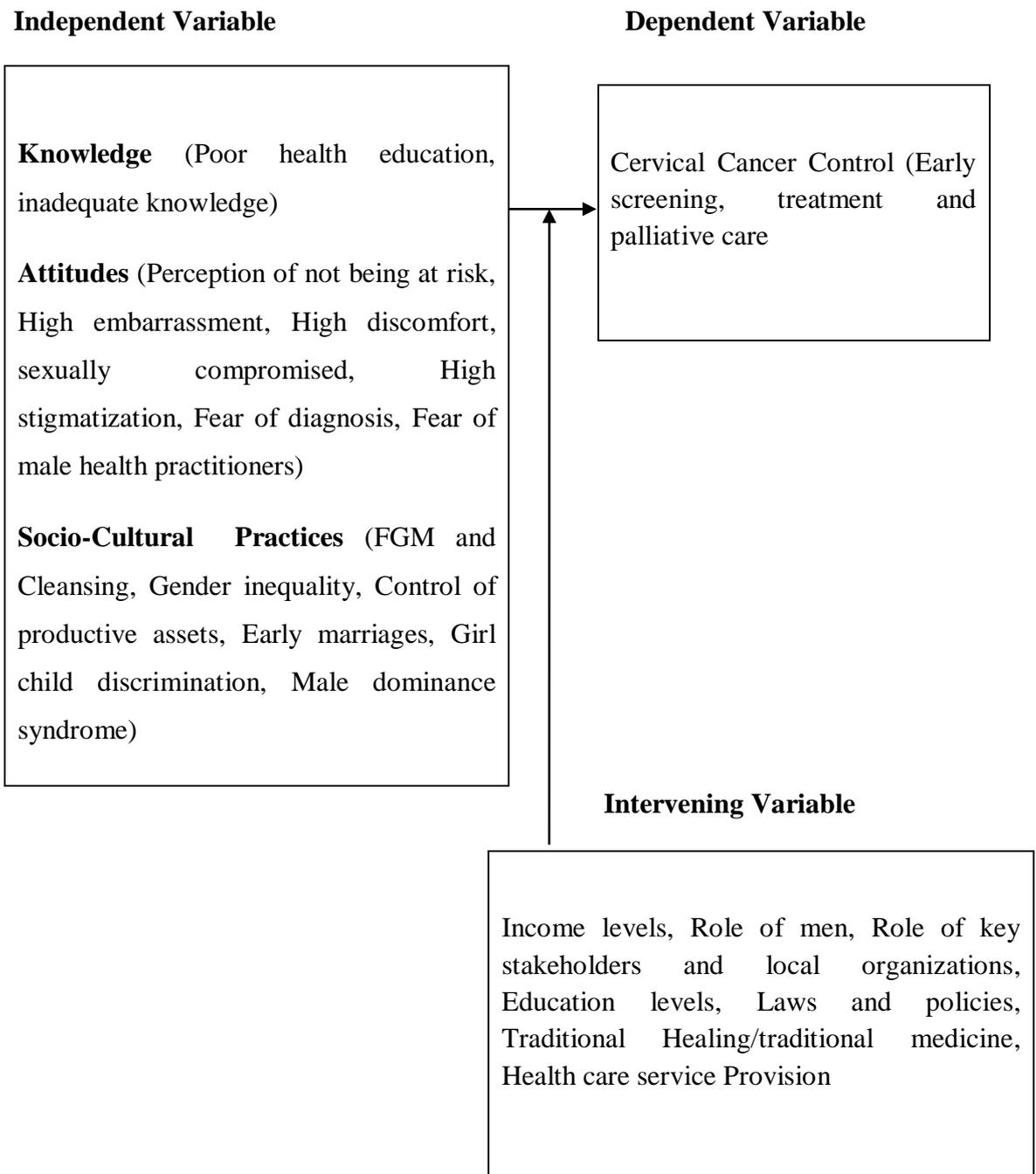


Figure 2. 1 Conceptual Framework

Source: Researcher (2017).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design that was used by the researcher in establishing the knowledge, attitudes and socio-cultural practices that influence the control of cervical cancer. It discusses the study site, study population, target population, sample size determination, sampling strategy, data schedule, data analysis, presentation and dissemination, validity and reliability of the research instruments and assumptions of the study.

3.2 Study Site

Uasin Gishu County lies between longitudes 34⁰ 50' East and 35⁰ 37' West and latitudes 0⁰03' South and 0⁰55' North. The county shares common borders with Trans Nzoia County to the North, Elgeyo Marakwet County to the East, Baringo County to the South East, Kericho County to the South, Nandi County to the South West and Kakamega County to the North West. It covers a total area of 3,345.2 Sq. Km (KNBS, 2013).

The headquarters of Uasin Gishu County is Eldoret town located on the main highway serving Uganda and other great lakes region that include Rwanda, Burundi, Congo, Zaire and Tanzania. The town is placed at an altitude of 2085 m above sea level with a relatively cool climate experiencing daily mean maximum temperatures of 23.7°C and a mean minimum of 9.5°C. Eldoret is traversed approximately latitude

00° 30' North and Longitude 35° 15' East of the Equator. It is approximately 320 kilometres North West of the Kenyan capital city of Nairobi (KNBS, 2013).

Despite Uasin Gishu County having appreciable number of health facilities that offer cervical cancer screening services including the Moi Teaching and Referral Hospital (MTRH) whose catchment extends beyond Rwanda, Uganda, South Sudan and the East Africa region, uptake of cervical cancer control services is still low (Were *et al.*, 2011; Orang'o *et al.*, 2016).

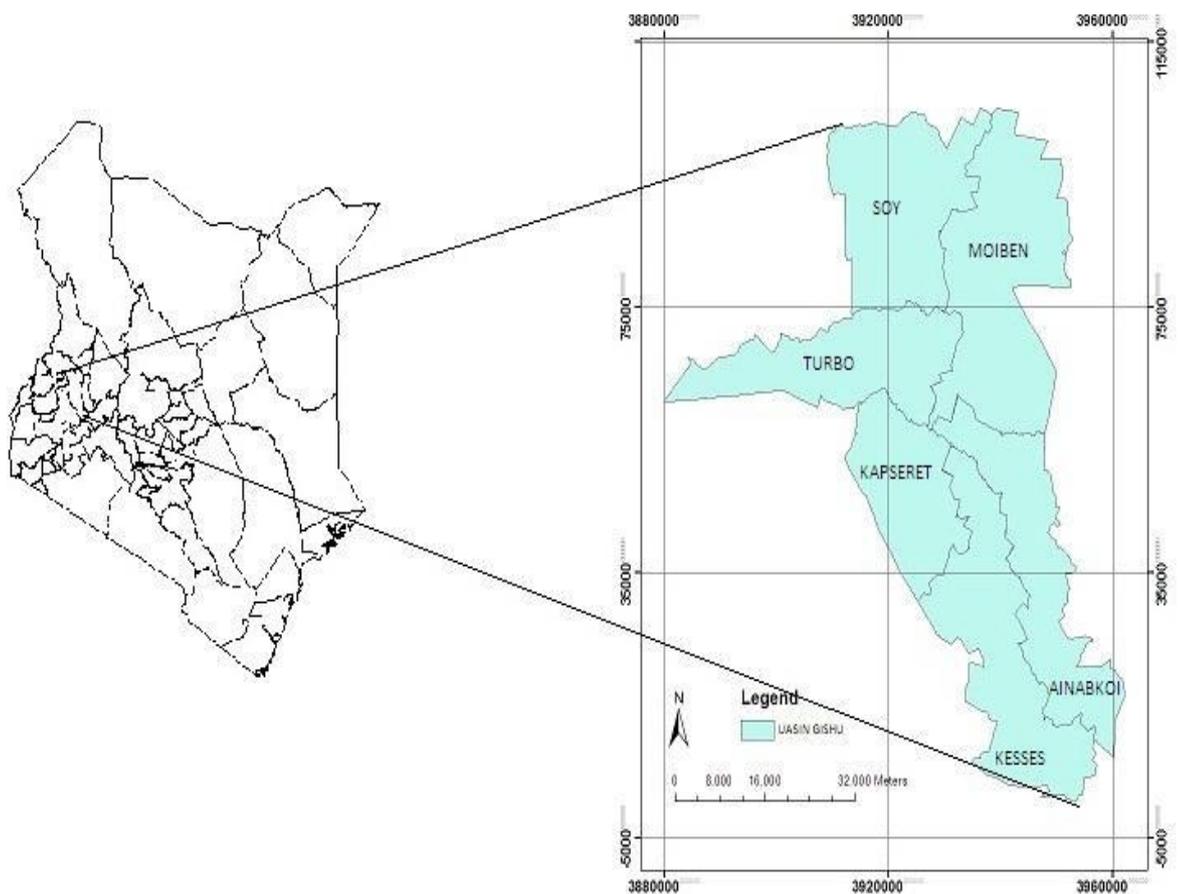


Figure 3. 1 Location of Uasin Gishu County (Study area)

Source: Adopted from Kirumba, 2009.

3.1.1 Population Size and Composition

According to the 2009 Population and Housing Census, the total population of Uasin Gishu County stood at 894,179 (Male – 50 %, Female – 50 %). At an inter-censal population growth rate of 3.8%, the total population was projected to grow to 1,211,853 by 2017. The population growth rate is higher than the national growth rate at 2.9%. The population density is 267 persons per sq. Km. which was expected to increase to 362 persons per sq. km. by 2017 (KNBS, 2013).

3.1.2 Physical and Topographic Features

Uasin Gishu County is a highland plateau with altitudes falling gently from 2,700 meters above sea level to about 1,500 meters above sea level. The topography is higher to the east and declines gently towards the western border. The County is physiographically divided into three zones: the upper highlands, upper midlands and lower highlands. These zones greatly influence land use patterns as they determine the climatic conditions. The geology is dominated by tertiary volcanic rock with no known commercially exploitable minerals (Kenya county fact sheet, 2011).

The soils which comprise of red loam soils, red clay soils, brown clay soils and brown loam soils mainly support maize, sunflower, wheat, pyrethrum, potatoes and barley farming. They also support livestock rearing and forestry. Uasin Gishu County lies within the Lake Victoria catchment zone and all its rivers drain into the lake. The major rivers include Sosiani, Kipkaren, Kerita, Nderugut, Daragwa, and Sambu (Uasin Gishu County, CIDP, 2013).

3.1.3 Climatic Conditions

Uasin Gishu experiences high and reliable rainfall which is evenly distributed throughout the year. The average rainfall ranges between 624.9 mm to 1,560.4mm with two distinct peaks occurring between March and September; and May and August. Dry spells occur between November and February. The temperatures range between 7⁰ C and 29⁰ C. Generally these conditions are favorable for livestock keeping, crop and fish farming (Kenya county fact sheet, 2011).

3.1.4 Health Access

The County has 170 health facilities ranging from level 2 to 6. Most of the facilities are concentrated within Eldoret Municipality but whose catchment extends upto Uganda, Rwanda and South Sudan. At the apex of the health system is the Moi Teaching and Referral Hospital. Whereas the number of existing facilities is quite appreciable they are not sufficiently utilized especially the cervical cancer screening services (Uasin Gishu County, CIDP, 2013).

The availability of health personnel including doctors, clinicians, nurses, etc. is a critical determinant of quality and access to health services. There is a total of 924 health workers, serving in the 111 County public health facilities. The County's doctor: population ratio is 1:10,034 while that of clinician/nurse: patient ratio is 1:2,331. These two indicators reflect the fact that there is a shortage of health staff in the County. Staff inadequacies are more acutely felt in technical and clinical services (Uasin Gishu County, CIDP, 2013).

3.2 Study Population

Study population refers to the entire group of individuals/subjects or a collection of units of observation and units of analysis which the study will use to generalize the observation (Burns and Grove 2009; Polit and Beck 2004). Unit of observation will be drawn from the six sub counties of Uasin Gishu County. Target population is defined as universal set of the study of all members of real or hypothetical set of people, events or subjects to which an investigator wishes to generate this result (Mugenda and Mugenda, 2003). Uasin Gishu County has a population of 894,179 (Male – 50 %, Female – 50 %) with a population density of 167 people per Km². The total number of females is 447,090 with 107,302 being in the reproductive age (18-49) years and this will form the target population.

3.3 Research Design

According to Trochim (2005), research design "provides the glue that holds the research project together. A design is used to structure the research, to show how all of the major parts of the research project work together to try to address the central research questions". Research studies are designed in a particular way to increase the chances of collecting the information needed to answer a particular question. The information collected during research is only useful if the research design is sound and follows the research protocol. A household survey design was employed. The study design enabled the researcher to collect both quantitative and qualitative data.

Descriptive Survey design was utilized for the first and third objectives. According to Burns & Grove (2009) descriptive research "is designed to provide a picture of a situation as it naturally happens" The descriptive design is focused on generating

detailed information regarding the key aspects. It is used in preliminary and exploratory studies to allow researchers to gather information, summarize, present and interpret it for the purpose of clarification (Bengtsson, 2016). The purpose of descriptive research is to determine and report the way things are in their natural setting, describe their relationship but do not predict relationship between variables (Mugenda and Mugenda, 2003; Orodho, 2008; Kombo and Tromp, 2006). Descriptive research design for the purpose of this study was employed to determine the knowledge on hazards and risks of cervical cancer and to establish the attitudes and practices associated with cervical cancer among women.

The study also employed correlation research for the second objective to determine the relationship between the various socio-demographic characteristics and reception of cervical cancer control interventions. Correlation study is a quantitative method of research in which two or more quantitative variables from the same group of participants are compared to determine if there is a relationship (or co variation) between the two variables (Waters, 2017).

The fourth objective utilized evaluation research design. Evaluation is the systematic assessment of the operation and/or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy (Powell, 2006). Babbie and Mountain, (2001) define devaluation research design as a systematic application of social research procedures for assessing conceptualization, design and implementation and utility of social intervention programs. Gomm, (2004) referred to evaluation research design as a design that helps people make wise choices about future programming. It's aimed at informing experiences and judgments, perceptions and experiences of program

planners, practitioners and community participants. The design helped in the determination of relative merits and approach interventions required and the sustainability of the appropriate interventions.

A mixed approach survey was chosen to facilitate a broad understanding of the knowledge, attitudes and practices that influence the control of cervical cancer among women. According to Kombo and Tromp (2006) mixed method research helps develop rich insights into various phenomena of interest that cannot be fully understood using only a quantitative or qualitative method. By using both quantitative and qualitative research methods, the researcher gains in-breadth and in-depth understanding and corroboration while offsetting the weaknesses inherent to using each approach by itself. One of the most advantageous characteristics of conducting mixed methods research is the possibility of triangulation which is the use of several means (methods, data sources and researchers) to examine the same phenomenon Kombo and Tromp (2006). The integration of quantitative and qualitative data provides a better understanding of the research problem than either of each alone (Kothari, 2004).

3.4 Sampling Strategy

Sampling may be defined as the selection of some part of an aggregate or totality on the basis of which a judgement or inference about the aggregate or totality is made. In other words it is the process of obtaining information about an entire population by examining only a part of it. In most of the research work and surveys the usual approach happens to be make generalization or to draw inferences based on samples about the parameters of population from which the population are taken (Kothari, 2004).

This is because there is no defined statistical population whose elements would vary from each other without limit. Thus although diversity is a universal quality in nature of mass data, every population has characteristic properties with limited variation. This makes it possible to select a relatively small unbiased random sample that can portray fairly well the features of the entire target population (Kothari, 2004).

Since the study wanted to understand the reception levels of women from varied social backgrounds, two sub counties; one with the highest rural to urban population and another with the highest urban to rural population were purposively sampled. The two sub counties were Moiben and Kapsaret with a total of 22,305 females in reproductive age (CIPD, 2013).

Moiben sub county has five locations; Tembelio, Sergoit, Meibeki/Karuna, Moiben and Kimumu. Kapsaret sub county has five locations too; Simat/Kapsaret, Kipkenyo, Ngeria, Megun and Langas. Further intensive research was carried out in Meibeki/Karuna and Langas locations of Moiben and Kapsaret sub counties respectively being the least cosmopolitan and the highest cosmopolitan locations respectively (KNBS, 2009). Simple random sampling was used to select 4 sub locations in Langas location and 3 sub locations in Meibeki/ Karuna location since Langas has a higher population (33,085) as compared to Meibeki/Karuna's population (26,048).

Simple random sampling has no complexities; therefore the 7 sub locations from each of the locations were coded and used as the sampling frame. The codes were written on pieces of paper of the same colour and size so that numbers could be concealed. They were then mixed in a box where lottery method was used to select

one at a time without replacement until the 7 sub location, 3 from Meibeki/ Karuna and 4 from Langas had been selected for the study.

The sampling units were households and only one participant was selected per sampled household. Eldoret East region in which Moiben forms part of has 25.44% of the total households in the county while Wareng region in which Kapseret forms part of has 30.58% of the total county households. This constitutes 51,462 households in Eldoret East and 61,860 households in Wareng. Since three sub locations were considered in Meibeki/Karuna locations and four sub locations in Langas location, the households were also be picked in these same proportions giving 168 households in Meibei/Karuna and 225 in Langas Location.

In order to determine the households to be picked in the selected locations, the use of data from households mapping done by the Kenya National Bureau of Statistics (KNBS) through the Kenya National Census and Household Surveys (KNCHS, 2009) was utilised. Using the numbers derived for households and structures for example structure number fifteen and household number thirty denoted S0015/030 were all populated in SPSS computer software and a command issued to randomly pick the required number of households in each location. The randomly generated numbers were used to pick the households to interview the women.

The household numbers selected randomly by the computer were identified on the ground through support of the Village elders who are familiar with the mapping exercise of households during the 2009 census.

In each house hold, verbal consent to participate in the study was sought before generating a list of all eligible participants in the house hold. From the list, a simple

random sample approach was used to select one participant from the house hold for the interview.

Table 3. 1 Randomly selected administrative areas

Sub county	Location	Sub location	Households
Kapseret	Langas	Pioneer estate	56
		Kipkaren estate	56
		Homecraft	56
		Langas	56
Moiben	Meibeki/Karuna	Toloita	56
		Moiben	56
		Merewet	56

Source: Researcher (2017).

3.5 Sample size

Sample size refers to the number of subjects, events, behavior or situations that are examined in a study (Burns and Grove, 2009). Yamane (1967:886) provides a simplified formula to calculate sample sizes. The study population is 22, 305 and the level of precision was assumed at 95% confidence interval level.

Equation 3. 1

$$n = \frac{N}{1 + N(e)^2}$$

Where n is the sample size, N is the population size, and e is the level of precision.

The sample size thus became

$$n_1 = \frac{22,305}{1 + 22,305(0.05)^2}$$

$n_1 = 392.95$ households, In addition 7 households, 4 in Langas and 3 in Meibeki/Karuna were proportionately sampled to cover for non-response bringing the sample size to 400 households.

Table 3. 2 Summary of Sampling strategy and Sample Size

Unit of observation	Sampling method	Sample size
Women from the two selected sub-counties	Simple random sampling	400
Cervical cancer screening health care providers (Key informants)	Purposive sampling	4 (2 from each of the two sub county hospitals in the two sub-counties)
Women of various social backgrounds	Quota sampling	84 (3FGDs in Meibeki/Karuna and 4 in Langas locations each consisting of 12 women)

Source: Researcher (2017).

3.6 Data Collection

3.6.1 Secondary Data

This was collected through review of County and Sub County annual work plans, strategic plans, project reports, development plans, monthly and annual reports, peer

reviewed journals, conference papers among others. The study also relied on documented data and evidence in the library and information held by organizations that are interested in women issues especially on knowledge, attitudes and socio cultural issues.

3.6.2 Primary Data

Primary data comprising of both quantitative and qualitative data was collected through open ended and closed ended questionnaire targeting women in reproductive age in Kapseret and Moiben sub counties. Research assistants conducted the interviews and the administration of the questionnaires in quiet and convenient locations within the homestead where interruptions were minimal and no non participant were present. When no adults were found in a selected household, the immediate next house hold was selected. The completed questionnaires were collected on a daily basis to check for its consistency and completeness.

The research assistants who had been adequately trained made attempts to develop trust with the participants. They reassured and reminded the study participants throughout the interview sessions that there were no right or wrong answers to the questions. They also reminded them that the interview was not going to assess their knowledge, but instead was an opportunity for them to share their opinions, beliefs and experiences with the researcher. These initiatives were successfully used by the research assistants, as a cultural insider, to calm the participants, build rapport and gain their trust and confidence. The research assistants very often addressed the older participants as “madam” or “mum” instead of calling them by their first names, as in most African cultures it is a custom that older women are not called by their names.

Four FGDs each constituting of 12 women was conducted in Langas location and three in Meibeki/Karuna locations bringing together 84 women. The women that constituted the focus group discussion participants were selected through snow ball method to ensure that women from all the ethnic and social backgrounds were included in the study. Focus group discussions elicit new information, free from researcher's pre-conceived expectations in order to learn about group and cultural norms and behaviors associated with cervical cancer prevention/ control among women of various social backgrounds.

This approach facilitates the flexible expression of ideas and experiences that might be left underdeveloped in a structured interview format. Its iterative data collection and research question format enables thorough exploration of participants' perspectives which quantitative methods do not allow.

The research also conducted key informant interviews (KIIs) with 4 health care providers who worked at the cervical cancer screening program in each of the health centres in the two sub counties. Key informant interviews guide was developed to facilitate the research in undertaking in-depth interviews with the health care workers working in the cervical cancer programs in the two sub counties. The guide constituted a series of open ended questions that sought to determine the knowledge, attitudes and socio-cultural practices that influence the control of cervical cancer among women. Table 3.3 illustrates the data collection tools.

Table 3. 3 Table illustrating the data collection instruments

Specific objective	Measurable variable	Data collection instrument/ tools
Determine the knowledge on hazards and risks of cervical cancer	Awareness, previous screening, age, gender, incomes, advocacy, knowledge of hazard risk and screening campaigns	Observation, Focus group discussions, interviews, Questionnaires
Determine the reception levels of cervical cancer control services	Actual screening, accepting follow up, opting for herbal medicine,	Interviews, structured questionnaires, Focus group discussions
Establish the attitudes and practices associated with cervical cancer control	socio-cultural perceptions, stigma associated with cervical cancer, culture, FGM, male dominance, lack of women empowerment	Interviews, structured questionnaires, Focus group discussions
Evaluate the barriers to cervical cancer control interventions	Availability and functionality of screening machinery Health promotion strategies Barriers to the utilisation of the screening machinery	Interviews, Questionnaires, Focus group discussions,

Source: Researcher (2018).

3.6 Research instruments

The following research tools were used to collect data in the study: Questionnaire, Focus Group Discussion guide and Interview schedule/Key informant interview guide.

3.6.1 Questionnaire

According to Mugenda and Mugenda (1999) questionnaires give a detailed answer to complex problems. Additionally, questionnaires are also a popular method for data collection in deduction because of the relative ease and cost effectiveness with which they are constructed and administered. Questionnaires allow collection of both subjective and objective data in a large sample of the study population in order to obtain results that are statistically significant. It is also a good tool for the protection of the privacy of the participants. The questions assessing the participants' general knowledge about cervical cancer were developed based on current scientific literature on the causes of cervical cancer, methods of prevention, risk factors, signs and symptoms (Borruto, *et al.*, 2012; Langley & Nonhlanhla, 2012b; van *et al.*, 2008 and World Health Organization (WHO), 2006). Other elements in the questionnaire assessing screening barriers, attitudes and perceptions, were chosen and adopted from previous studies on cervical cancer and screening practices (Byrd *et al.*, 2004; Gamarra *et al.*, 2005; Ibekwe, *et al.*, 2011; Mupepi, *et al.*, 2011; Nwankwo, *et al.*, 2011; Owoeye & Ibrahim, 2013; Watts *et al.*, 2009 as cited in Anaman *et al.*, 2016). Questionnaires comprising of both open ended and closed ended questions were utilized to collect data from the women in reproductive age in the area of study.

3.6.2 Focus Group Discussion guide

The Focus Group Discussion (FGD) is a rapid assessment, semi-structured data gathering method in which a purposively selected set of participants gather to discuss issues and concerns based on a list of key themes drawn up by the researcher (Kumar, 2005). Focus group discussion is a structured discussion with the purpose of stimulating conversation around a specific topic. It is led by a facilitator who poses questions and the participants give their thoughts and opinions (Mugenda and Mugenda, 2003).

The focus group discussion guide utilized participatory approaches that included open ended questions, discussions and clarifications it was administered to groups of twelve women of various ethnic groups who gave pertinent information on the knowledge, attitudes and socio-cultural practices that influence the control of cervical cancer. This method explored the perspectives and beliefs of the women in more depth and provided detailed information for a better understanding of the research questions.

3.6.3 Interview schedule/Key informant interview guide

The semi-structured interviews were conducted to gather qualitative data to contextualize the quantitative results. The semi-structured interviews were useful for explaining and better understanding the quantitative results because they drew on the participants' own categories of meaning rather than imposing preconceived categories on the results. Interview guide was used in the study since it generally yields highest cooperation and lowest refusal rates, offers high response quality and takes advantage of interviewer presence and it is multi-method data collection that combines questioning, cross examination and probing techniques (Owen, 2002).

Best and Khan (2001) views interview guides as superior to other data collection instruments because they create rapport between respondents and the researcher.

3.7 Validity and Reliability of Instruments

In order to ensure validity and reliability of the instruments, the researcher carried out a pretest of the instruments.

3.7.1 Validity

Validity is the degree to which instruments measures what it is supposed to measure (Kothari, 2004). Mugenda and Mugenda (2003) describe validity as the accuracy and meaningfulness of inferences, which are based on the research results. Content validity was determined by pilot testing of the research instruments. This involved actual data collection on a few individuals from the study population but those that did not form the study participants. A pilot test is a mini version of a full-scale study or a trial run done in preparation of the complete study. The latter is also called a ‘feasibility’ study. It can also be a specific pre-testing of research instruments, including questionnaires and interview schedules (Fraser *et al.*, 2018). A pilot test is a preliminary test which is conducted on a small scale in order to establish the effectiveness of data collection instruments (Mugenda and Mugenda, 2003). They indicate that a pilot test sample should be between 1% to 10% of the target population. The pilot test in the current research can be defined as not only a try-out of research techniques and methods, but also of questionnaires, Focus group discussion and Interviews. The pilot test was carried out in Ainabkoi and Turbo Sub-counties in Uasin Gishu and it was valuable in identifying unclear or ambiguous items in the research instruments. The non-verbal behavior of participants in the pilot

test gave important information about any embarrassment or discomfort experienced concerning the content or wording of items in the questionnaire.

The latter was quite valuable in the current research because the study involved cervical cancer which is a type of cancer that affects the most secret and sacred part of a woman's body. The questionnaires, interview guide and focus group discussion guide were pre-tested using procedures identical to those that were to be used during the actual study. The pilot test gave feedback on clarity and validity of the instruments to be used and time taken by respondents to answer to questionnaire items. The pilot test also helped to ascertain the feasibility of the study (Creswell, 2002; Kumar, 2005).

From the piloting of the research instruments the researcher was able to get feedback on whether or not the instrument was likely to work as expected. Piloting sought to correct; ambiguity in the questions, questions that made respondents uncomfortable, questions that respondents did likely not understand, questions that combine two or more issues in a single question and leading questions that could lead to bias in the study.

The researcher also used the supervisors of the research to examine the content of the research instruments and advise the researcher on the content validity. This then helped in modifying the instruments appropriately to remove any ambiguity that was realized as well as restructure the questions appropriately.

3.7.2 Reliability

Reliability refers to the level to which the measuring instrument provides consistent results (Kothari, 2004). According to Mugenda and Mugenda (2003), reliability is a

measure of the degree to which a research instrument yields consistent results. Reliability reflects consistency and replicability over time. Furthermore, reliability is seen as the degree to which a test is free from measurement error, since the more measurement errors occur the less reliable the test (Fraenkel and Wallen, 2003). To establish reliability of research instruments, a pilot test was carried out. The pilot test was done in Ainabkoi and Turbo sub counties as these did not form the sub counties sampled in the study. The instruments were then verified for accuracy and consistency and any ambiguity realized removed. At the same time, any weakness and deficiencies noted were corrected in the final data collection instrument. The researcher also translated the English version instruments into Kiswahili for ease of understanding by the respondents who preferred either of the languages. An independent person was identified to check for inconsistencies as well as back translate the translated instrument to English and weaknesses realized were corrected.

3.8 Data analysis and presentation

Qualitative data was checked for consistency, coded appropriately, and entered into SPSS software package version 20 for analysis. Preliminary frequency analyses were conducted and any inconsistency in the data was identified and corrected. There was no missing data for all the 400 participants eligible for the analysis. The data were explored and general features displayed to identify problem areas before commencing data analyses. Descriptive statistics like; numerical summary measures, frequencies and graphs (diagrams), chi square test (P-value < 0.0001 was considered significant) were used for describing the study population in relation to relevant variables. Median was used to classify the scores of knowledge and Attitude. The

questions assessing participants' knowledge about what causes cervical cancer, the signs and symptoms, methods of preventing cervical cancer, when to start cervical screening and preferred means of receiving health information were multiple response questions and the participants could choose more than one response. Each response in the multiple response questions was coded as a separate variable and then grouped under a multiple response set variable in SPSS prior to the analysis. The results were presented in tables, bar charts, graphs and pie charts as appropriate.

Qualitative data was organized through open coding to try to make sense of it, axial coding was then done by interconnecting and linking the categories of codes. Themes, patterns and relationships were then identified word and phrase repetitions, primary and secondary data comparisons and search for missing information. Content analysis was then used to classifying, summarize and tabulate the data. Narrative analysis was done which involved the reformulation of stories presented by respondents taking into account the context of each case and different experiences of each respondent. The research findings were then compared to phenomena from different areas and similarities and differences were compared. The data was presented in form of respondent direct speech narratives and discussions from the KIIs.

Multiple logistic regression analysis with odds ratio along with their 95% confidence interval was used to assess the degree of association between dependent and independent variables and test significance of the association. Level of significance below 0.05 was considered to determine the association. Table 3.4 illustrates the research design and data analysis.

Table 3. 4 : Table illustrating the research design and data analysis

Specific objective	Measurable variable	Research design	Data analysis
Examine the knowledge on hazards and risks of cervical cancer among women	Awareness, previous screening, age, gender, incomes, knowledge of hazard risk and screening campaigns	Descriptive, Survey design	Descriptive statistics
Examine the reception levels of cervical cancer control services	Actual screening, accepting follow up, opting for herbal medicine,	Correlation design	Descriptive statistics, Correlation statistics
Establish the attitudes and practices associated with cervical cancer control	socio-cultural perceptions, stigma, culture, FGM, male dominance, lack of women empowerment	Survey design, Correlation	Descriptive statistics, Inferential statistics
Evaluate the barriers to cervical cancer control interventions	Availability and functionality of screening machinery Health promotion strategies Barriers to uptake of cervical cancer control services	Evaluation, Survey design	Descriptive statistics, Inferential statistics

Source: Researcher (2018).

3.9 Data dissemination

The findings of the study were disseminated through publications in refereed journals and through workshops with stakeholders at the county and sub-county levels.

3.10 Ethical consideration

Ethical considerations in a research study refers to all the measures undertaken by the researcher in order to maintain human dignity while in the process of gaining knowledge from the study with them as study participants (Serem *et al.*, 2013).

Silverman (2009) notes to researchers that the core value in research is not to expose a person or institution but to collect data. Researching on cervical cancer is a sensitive undertaking because of the private nature of the subject as a disease. One of the ethical considerations is informed and expressed consent (Boy, 2015).

Participants for the study were voluntarily recruited without coercion; this was reinforced by signing the consent form. Where a patient was to be interviewed and is not in a position to make clear judgment of issues, a next of kin or caregiver was sought for consent. The researcher ensured that the research assistants comprehensively explained to the participants, the purpose, objectives and benefits of the study. Participants were informed of the non participation option and the ability to pull out of the study at any point even before the end of the study.

Issues of anonymity were guaranteed to the participants by ensuring that their names were not attached either to the questionnaire or any feedback meant for the study. Anonymity was observed and avoidance of harm was also observed through careful handling of people and information. No major risks were envisaged through participation in the study since it is a descriptive study and not an intervention study.

Official permission and permits were obtained for purposes of gaining entry into communities. The choice of place of the interviews and FGDs were as neutral and as comfortable as possible for both the participants and the researcher. Information collected was treated as confidential and protected.

The researcher availed to the participants a copy of the consent form and the contacts of the researcher, the approving IERC and the researchers' institution.

3.11 Inclusion criteria

Women of all races were open for recruitment and participation in the study. The age limits for recruitment and participation into the study was women between the ages of 18 and 49 years. The Kenya national guidelines recommend VIA screening to women between 25-49 years of age with those below or above being screened based on high risk factors or healthcare provider recommendation.

3.12 Exclusion criteria

Women not able to give consent due to medical or physical inability were excluded from participating in the study.

CHAPTER FOUR

KNOWLEDGE ON THE HAZARDS AND RISKS OF CERVICAL CANCER

4.1 Introduction

This chapter presents results on the knowledge on hazards and risks of cervical cancer, the awareness on causes, transmission, prevention and control of cervical cancer and the qualifications for screening.

4.2 Socio-demographic characteristics

A total of 400 respondents completed the questionnaire. Their mean age in years was 33.2 (SD 8.7) and the median Inter-Quartile Range (IQR) monthly income was 10,000 (5,000, 18,000). As indicated in Table 4.1, majority of the participants 86% (n=344) were from the Kalenjin community of whom 57.3% (n=229) were married and 97.4 % (n=184) were in monogamous marriages.

The mean age of first sexual activity was 22.4 years (SD 3.3) with the youngest being 18 years and oldest being 35 years respectively. The average number of times pregnant was 3 (1, 9) and the number of living children was 3 (0, 9). Many other studies have shown an association between age at first sexual activity, number of sexual partners and the number of pregnancies with cervical cancer (Ali *et al.*, 2010; McCarey *et al.*, 2011 and Nganwai *et al.*, 2008 as reported in Sha *et al.*, 2012). Concerning the level of education, 46.2% (n=181) had attained tertiary level of education and 32.9% (n=128) were employed.

Monthly income levels are associated with empowerment and subsequently socioeconomic status (SES). SES underlies three major determinants of health:

health care, environmental exposure, and health behavior. Reducing SES disparities in health will require policy initiatives addressing the components of socioeconomic status (income, education, and occupation) as well as the pathways by which these affect health (Adler and Newman, 2002).

Table 4. 1: Socio-demographic characteristics of the respondents (N=400).

Characteristic	Frequency (%)	n
Education level		
None	5.1	(n=20)
Primary	5.6	(n=22)
Secondary	41.1	(n=164)
Tertiary	46.2	(n=185)
Others	2.0	(n=8)
Ethnicity		
Kalenjin	86	(n=344)
Luhya	8.3	(n=34)
Kisii	2.0	(n=8)
Kikuyu	0.5	(n=2)
Luo	2.8	(n=12)
Marital status		
Single	27	(n=108)
Married	57.3	(n=229)
Divorced	7.8	(n=31)
Widowed	5.5	(n=22)
Separated	2.5	(n=10)
Employment status		
Student	12.6	(n=49)
Employed	32.9	(n=128)
Self employed	25.7	(n=100)
Home maker	24.7	(n=96)
Retired	0.5	(n=2)
Applicant	3.6	(n=14)

Source: Researcher (2017)

4.3 Knowledge on hazards and risks of cervical cancer

Among the 400 women, 91% (n=363) had heard about cervical cancer, 8% (32) had never heard of cervical cancer while 1% (3) did not know what cervical cancer was all about as indicated in Figure 4.1.

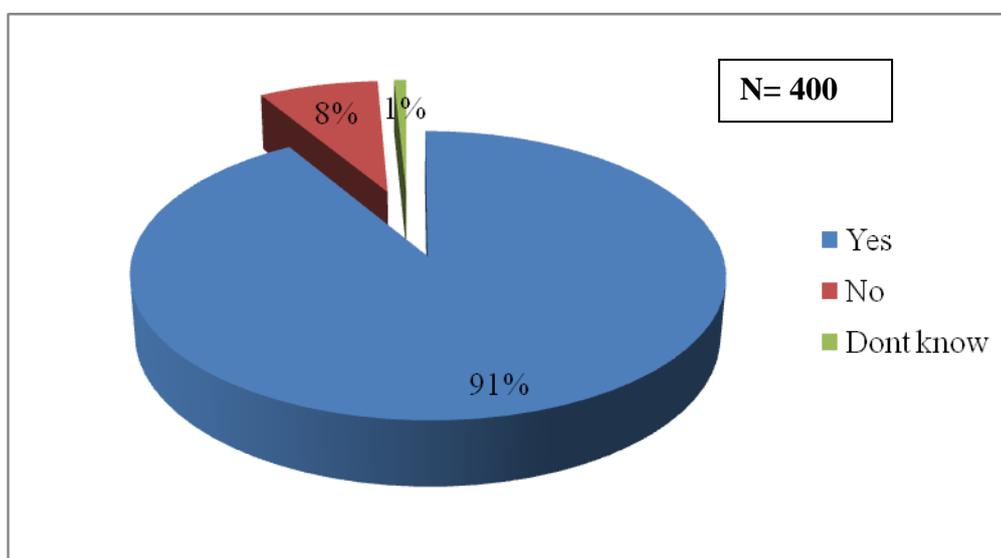


Figure 4. 1: Knowledge on hazards and risks of cervical cancer

Source: Researcher (2017)

Hoque and Hoque (2009) reported contrary findings where, less than half (42.9%) of the participants had heard about cervical cancer. Of those who had heard about cervical cancer, almost a quarter (22%) had heard from community health workers. Likewise in a study by Ramathuba *et al.*, 2016 majority of the respondents, 62.0% (958), indicated that they had never heard about cervical cancer while 38.0% (588) indicated that they had heard about it.

Corroborating findings were reported by Almobarak *et al.*, 2016, where 87.8% (439/500) heard about cervical cancer, 46.6% (233/500) heard about HPV as a causative agent and 39.2% (196/500) heard about HPV vaccine, while only 11.4% (57/500) had been vaccinated. Similarly regarding the source of information about

pap smear; the media (newspaper, television and internet) ranked first at 40% (103/258).

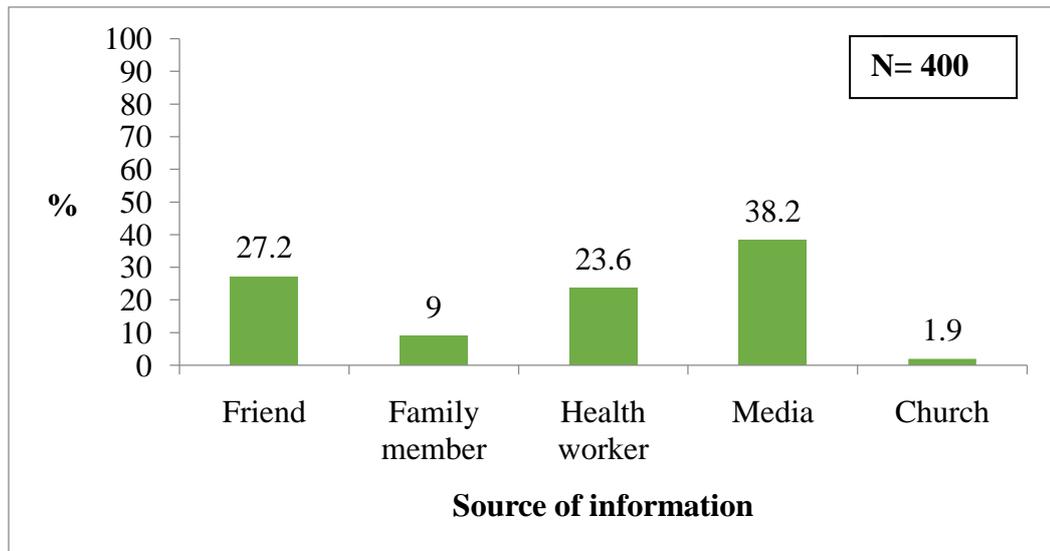


Figure 4. 2: Source of information on cervical cancer

Source: Researcher (2017)

Among the 363 that had heard about cervical cancer, 38.2% (n=136) heard it from the media, 27.2% (n=97) from a friend while 23.6% (n=84) heard it from a health worker as shown in Figure 4.2. This scenario could be explained by the fact that cervical cancer is such an intimate issue that most people especially women would be discussing freely and someone would rather get information concerning the same from the media. Ironically though, as much as majority of the respondents were aware of cervical cancer, only 35.5% (n=142) of them had been able to seek cervical cancer screening services.

The other main source of information on cervical cancer was through friends 27.2% (n= 97) and family member 9% (n= 32) with the church contributing the least 1.9% (n= 7). These are contrary to a study by Allen *et al.*, 2014 where delivery of cancer

education programs through churches had been recommended as a way to reach underserved populations, such as Latinos. Churches were found to be natural partners for the delivery of evidenced-based interventions, in that they played a prominent role in Latino community life, providing a trusted source for spiritual guidance, culturally responsive communication, social support, and networking.



Plate 4. 1 Researcher with FGD participants

Source: Researcher (2017)

The focus group respondents in the discussion shown in Plate 4.1 reported similar findings were most participants had heard about cervical cancer and the most common means of hearing about it was through the mass media and at health talks from health care workers in hospitals. However, among the respondents who had heard about cervical cancer, most did not understand the part of the body affected or where the cervix is located as illustrated by one FGD from Meibeki/Karuna.

“I have heard about the disease from a nurse at the dispensary. I think it mainly affects young women who are still giving birth and it targets the uterus” FGD participant No. 1 from Meibeki/Karuna

A few respondents identified cancer of the cervix by describing the cervix as the mouth of the womb or the birth canal. Some other discussants thought that it was cancer of the uterus and even some cancer of the hips. The Key informant interviewee from Moiben Sub-County reported that cancer was shrouded with a lot of myths and misconceptions from the community and people would rather receive the information from the media because no one in the community would be willing to speak about cancer, let alone cervical cancer.

The findings of the present study are discordant with those of a study carried out among women visiting primary health care centers in Bahrain which found out that the main source of information was from a gynaecologist (51.5%) followed by relatives and friends(18%), the media (13.4%), family physicians (12.4%), and nurses (3.6%) (Jassim *et al.*, 2018).

The predominant source of information in the current study was reversed in comparison with one by Shiferaw *et al.*, 2016 where among women that had ever heard of cervical cancer, over half (57%) of the participants stated that the source of information for cervical cancer was from the health facility while close to a quarter (23%) mentioned the media.

Concordant results were reported by Mukama *et al.*, 2017 where almost all women (898; 99.8%) had heard about cancer and the majority (794; 88.2%) had heard about cervical cancer. The main sources of information about cervical cancer were radio (557; 70.2%), health centers (120; 15.1%) and networks of friends and family members (104; 13.1%).

Modibbo *et al.*, 2016, reported that most participants had heard about cervical cancer and the most common means of hearing about it was through the mass media and at health talks from health care workers in hospitals. Moddibo *et al.*, 2016 further illustrated that there was limited knowledge of the use of screening as a means of preventing cervical cancer though this differed by religion and not by geographic location. Among the Christian women, the majority of the respondents had heard about cervical cancer screening and believed that it could be used to prevent cervical cancer. Among the participants who knew about cervical cancer screening, the majority believed that it was only required for pre-menopausal women who were sexually active and that the screening interval should be yearly (Moddibo *et al.*, 2016). Similarly Shibeshi and Degefu, 2017, found out that 94.7% of the respondents had heard about cervical cancer and screening. Mass media was the predominant source at 67.6% followed by health professionals at 35.2% and friends and relatives constituted 13% (Shibeshi and Degfu, 2017).

Findings from this study corroborated with those of a study carried out in Ibadan which showed that despite knowledge on cervical cancer and its prevention by screening via Pap smear, attitude and practices towards screening were negative (Decherny *et al.*, 2005). Similarly, a study carried out in Nnewi, south-eastern Nigeria revealed that though the knowledge of the cervical cancer screening is high, the uptake is abysmally poor (Udigwe, 2006). Practice of the prevention of cancer of the cervix should be a reflection of the knowledge and attitude of the members of the community towards the disease. Even among those aware of the disease, practice is low and this could be as a result of the wrong attitude of screening exercises and processes.

Employment status was shown to have a high significance ($P < 0.0001$) in relation to having heard of cervical cancer as indicated in Table 4.2. This could be explained by the fact that employment leads to empowerment which is associated with ability to make major decisions such as those of one's health, affordability of the items such as Radios and Televisions which could be the main sources of information and affordability of transport to health facilities where information on cervical cancer is disseminated.

At bivariate analysis, there was a significant relationship at 0.01 level (2-tailed) between education levels and having heard of cervical cancer. Participants with higher levels of education, secondary and tertiary were likely to have heard about cervical cancer as compared to their counterparts with no education or primary levels of education as shown in Table 4.3. This may be because women who are employed or students have a greater opportunity for social interaction hence they get to know about the disease, benefits of screening and hence better practice.

Table 4. 2: Correlation between the knowledge on hazards and risks of cervical cancer and socio-demographic factors

N=400 Selected socio-demographic factors	Knowledge on hazards and risks of cervical cancer (Having heard of cervical cancer)		
	Yes, n (%)	No, n (%)	Don't know, n (%)
Education level			
None	16(4.5)	3(9.7)	1(33.3)
Primary	16(4.5)	5(16.1)	1(33.3)
Secondary	149(42.0)	11(32.3)	0(0.0)
Tertiary	168(47.3)	10(32.3)	1(33.3)
Others	6(1.7)	2(6.5)	0(0.0)
P-value	0.03*		
Employment status			
Student	37(10.5)	11(36.7)	1(33.3)
Employed	126(35.7)	0(0.0)	0(0.0)
Self employed	92(26.1)	6(20.0)	1(33.3)
Home maker	1(0.3)	1(3.3)	0(0.0)
Retired	14(4.0)	0(0.0)	0(0.0)
P-value	<0.0001*		

Source: Researcher (2017)

These are comparable to a study by Liu, Ratcliff and Chen (2017) where age, educational level and family income were significantly associated with a higher knowledge level. Knowledge levels in older women (aged 55–65 years) (OR = 0.48;

95% CI: 0.26–0.90) were lower in general than women aged 30–44 years. Women reporting themselves with higher educational levels, having completed middle school or a higher level of education (OR = 3.47; 95% CI: 2.00–6.02) were more likely to have sufficient knowledge. Women with incomes of over US\$1606 yearly were found to have adequate knowledge. Likewise educational level was the only factor found to be significantly associated with positive attitudes. The attitudes of women who had completed middle school or a higher level of education (OR = 11.25; 95% CI: 1.33–95.20) were more positive compared with women who indicated that they had never attended school. Women who had attended primary school (OR = 3.31; 95% CI: 1.85–5.93), or attended middle school (OR = 4.82; 2.72–8.56) were more likely to attend screening than those who never went to school.

Similarly, in Getachew’s study, occupation (p=0.00) and educational status (p=0.00) of the respondents showed relation with knowledge of cervical cancer screening (Getachew, 2015).

Table 4. 3: Correlation between education level and having heard of cervical cancer

		Education level	Heard of cervical cancer
Education level	Pearson Correlation	1	-.133**
	Sig. (2-tailed)		.009
	N	392	389
Heard of cervical cancer	Pearson Correlation	-.133**	1
	Sig. (2-tailed)	.009	
	N	389	397

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Ethnicity and marital status on the other hand did not show any significant relationship with having heard of cervical cancer as shown in Table 4.4 and 4.5 respectively. Kivistic *et al.*, 2011 reported contrary findings where in the adjusted model screening awareness depended on ethnicity - Estonian-speaking women were better aware of the programme than the others (RR 1.64; 95% CI: 1.46 1.86).

Table 4. 4: Correlation between ethnicity and having heard of cervical cancer

		Ethnicity	Heard of cervical cancer
Ethnicity	Pearson Correlation	1	-.088
	Sig. (2-tailed)		.082
	N	398	395
Heard of cervical cancer	Pearson Correlation	-.088	1
	Sig. (2-tailed)	.082	
	N	395	397

Source: Researcher (2017)

Table 4. 5: Correlation between marital status and having heard of cervical cancer

		Marital status	Heard of cervical cancer
Marital status	Pearson Correlation	1	.067
	Sig. (2-tailed)		.182
	N	400	397
Heard of cervical cancer	Pearson Correlation	.067	1
	Sig. (2-tailed)	.182	
	N	397	397

Source: Researcher (2017)

The number of pregnancies and having heard of cervical cancer showed a significant correlation at the 0.05 level (2-tailed) as shown in Table 4.6. These findings

corroborated with those of Kivistik *et al.*, 2011 where women with more than two deliveries had a slightly better knowledge about screening (RR 1.09; 95% CI: 1.00-1.18)

Table 4. 6: Correlation between number of pregnancies and having heard of cervical cancer

		Times been pregnant	Heard of cervical cancer
Times been pregnant	Pearson Correlation	1	.120*
	Sig. (2-tailed)		.029
	N	337	334
Heard of cervical cancer	Pearson Correlation	.120*	1
	Sig. (2-tailed)	.029	
	N	334	397

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher (2017)

In summary, employment status, level of education and the number of pregnancies were significantly correlated with hearing of cervical cancer. Since the media and health talks have been shown to play a key role in the dissemination of cervical cancer information, education campaigns aiming at providing a comprehensive knowledge about the disease should utilize them and should focus on addressing knowledge gaps.

4.4 Cervical cancer causes and transmission

Regarding the cause of cervical cancer, 40.2% (n=144) reported bacteria, 24% (n=86) Human Papilloma Virus (HPV), while 30.6% (n=124) did not know the cause. Only 24% of the participants were able to identify the main agent associated with cervical cancer as indicated in Figure 4.3.

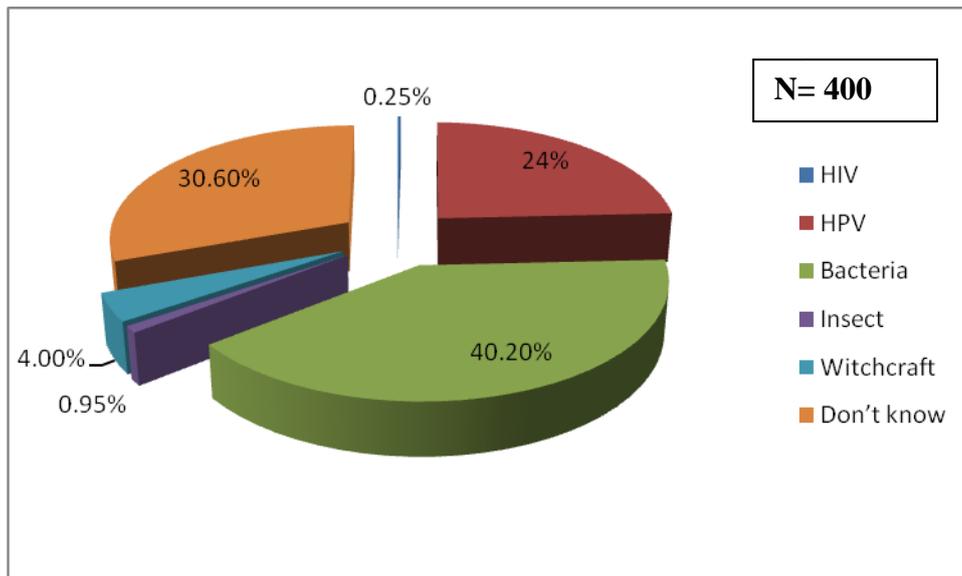


Figure 4. 3: Causative agent of cervical cancer

Source: Researcher (2017)

These findings are discordant with those reported by Williams and Amoateng (2012) where, only one of the participants was able to correctly identify the Human Papillomavirus (HPV) as the major risk factor for cervical cancer. The majority of the participants, regardless of education level, had similar misconceptions about the risk factors for cervical cancer. The most common belief among the participants was that cervical cancer was caused by too much sex. Although, multiple sexual partners is a risk factor for developing cervical cancer due to the increased risk of contracting HPV, the participants believed that physical damage due to frequent sex was the risk associated with too much sex.

Concordant findings were reported by Nayak *et al.*, 2015 where 21.5% thought cervical cancer ran in families, 23.5% attributed it to stress, 19% thought the disease was water borne, and only 20.5% identified viral etiology for the disease. The current study however, displayed higher knowledge on the association of HPV and cervical

cancer in comparison with a study carried out among Cambodian women which revealed that many women (46%) were aware that having multiple sex partners is a risk factor for cervical cancer, but only 2% of women were aware that HPV infection too was a risk factor for cervical cancer (Touch & Kyoung Oh, 2018).

In a study by Shebeshi and Degefu (2017) , 87.7% of the study participants identified Human Papilloma Virus (HPV) as the primary cause of cervical cancer which is contrary to the findings in this study were only 24% of the participants were able to identify HPV as the causative agent of cervical cancer.

Comparable results were reported by Getachew (2015) where from the series of questions regarding cause, risk factors, main symptoms, treatment options and prevention and early detection measures of cervical cancer, among those respondents who had heard of cervical cancer, 79 (22.7%) responded that they knew the cause of cervical cancer and 26 (33.3%) mentioned HPV as a cause.

Modibbo *et al.*, 2015 reported similar findings where discussants had some misconceptions about the cause of cervical cancer which varied by religion and geographical location. Among the Christian women in the Abuja FGDs, one of the most common misconceptions was that cervical cancer could result from wizardry. Among the Muslim women in the Abuja FGD, various vaginal health practices such as the use of toilet paper or cloth as sanitary pads during menstrual periods and the insertion of herbs into the vagina were thought to cause cervical cancer. In addition to the causes mentioned above, one of the Abuja Christian FGD participants also mentioned that it could be hereditary.

Table 4. 7: Cross tabulation on the knowledge on causative agent of cervical cancer with education levels and employment status

Selected socio-demographic factors	Witchcraft, n (%)	HPV, n (%)	Don't know n (%)	Bacteria n (%)
Education level				
None	0(0.0)	2(2.3)	9(5.7)	5(3.8)
Primary	0(0.0)	2(2.3)	12(7.6)	5(3.8)
Secondary	2(40)	16(18.4)	71(45.2)	66(50.4)
Tertiary	3(60)	66(75.9)	60(38.2)	49(37.4)
Others	0(0.0)	1(1.1)	5(3.2)	2(1.5)
P Value	<0.0001*			
Employment status				
Student	0(0.0)	6(6.7)	19(12.3)	19(14.5)
Employed	1(20)	52(58.4)	39(25.3)	35(26.7)
Self employed	3(60)	8(9)	41(26.6)	45(34.4)
Home maker	1(20)	17(19.1)	48(31.2)	29(22.1)
Retired	0(0.0)	6(6.7)	6(3.9)	2(1.5)
P Value	<0.0001*			

Source: Researcher (2017)

The Pearson correlation showed a highly significant relationship between the level of education and employment status with the causative agent of cervical cancer as indicated in Table 4.7. Education levels were also shown to have a significant relationship with the knowledge on the ways of cervical cancer transmission ($p < 0.0001$) as indicated in Table 4.8. Employment status though not significant was close to significance at ($p = < 0.09$).

Seventy three percent (n=229) reported that cervical cancer is transmitted through sexual contact, 11.4% (n=36) reported that it is through hereditary while 10% (n=31) identified sharing of inner clothes as the main route of transmission as indicated in Figure 4.4.

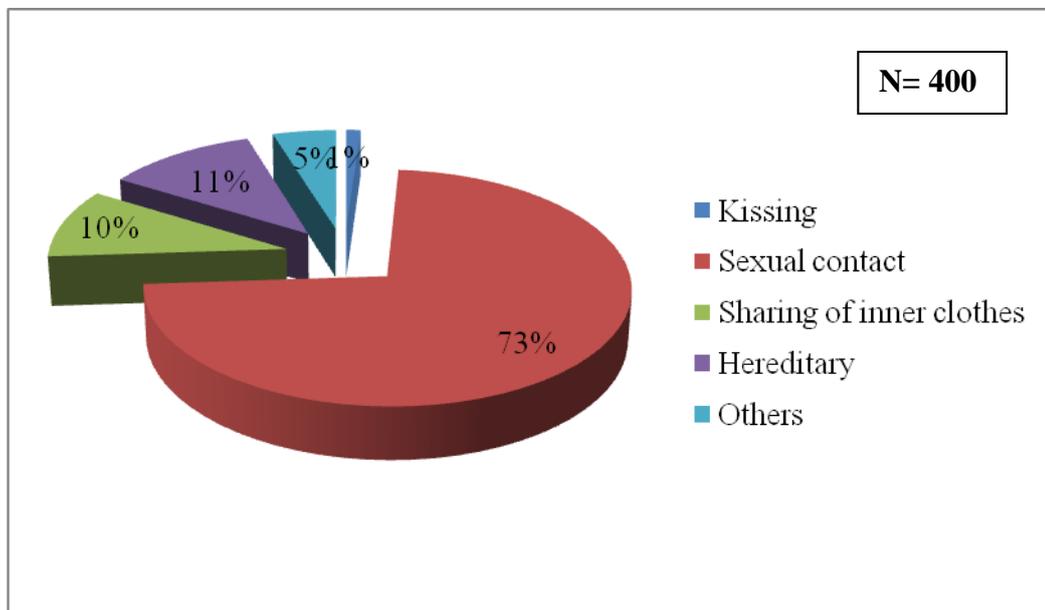


Figure 4. 4: Knowledge on cervical cancer transmission

Source: Researcher (2017)

Table 4. 8: Cross tabulation on the knowledge on transmission of cervical cancer with education levels and employment status

Selected socio-demographic factors	Kissing n (%)	Sexual contact n (%)	Sharing inner clothing n (%)	Heredit ary n (%)	Others n (%)
Education level					
None	0(0.0)	9(3.7)	0(0.0)	3(7.7)	3(16.7)
Primary	0(0.0)	11(4.5)	1(2.9)	2(5.1)	2(11.1)
Secondary	3(7.5)	92(37.9)	14(41.2)	19(48.7)	5(27.8)
Tertiary	1(2.5)	128(52.7)	17(50)	15(38.5)	5(27.8)
Others	0(0.0)	3(1.2)	2(5.9)	0(0.0)	3(16.7)
P Value	0.002*				
Employment status					
Student	1(2.5)	27(11.2)	3(8.8)	3(8.3)	5(26.3)
Employed	0(0.0)	98(40.5)	7(20.6)	9(25.0)	2(10.5)
Self employed	2(5.0)	54(22.3)	11(32.4)	14(38.9)	5(26.3)
Home maker	1(2.5)	54(22.3)	10(29.4)	7(19.4)	7(36.8)
Retired	0(0.0)	1(0.4)	1(2.9)	0(0.0)	0(0.0)
P Value	0.09				

Source: Researcher (2017)

From the focus group discussion in Plate 4.2, respondents had some misconceptions about the causative agents of cervical cancer. These varied by social and cultural background. Among women from Meibeki/Karuna, one of the most common perceptions was that cervical cancer could result from use of birth control contraceptives. For instance one FGD participant stated below.

“I heard that....use of the birth control contraceptives disrupts the normal monthly menstrual flow of women by blocking the menses. These menses in return will pile up in the woman’s body until it forms cervical cancer”. FGD Participant No. 2 from Meibeki/Karuna



Plate 4. 2: FGD participants during a session

Source: Researcher (2017)

Mukama *et al.*, 2017 reported concordant findings with most women 713 (62.4%) thinking that using contraceptives for a long time increased ones risk of developing cervical cancer. These results are also consistent with those of Mwaka *et al.*, 2016 where participants reported causes of cervical cancer including not washing women's genitals immediately after sexual intercourse (86.7%), sexual intercourse with polygamous men (83.9%), prolonged use of family planning pills and injections (63.3%), and engaging in rough sexual intercourse leading to physical trauma to women's genitals (68.5%). Other reported causes of cervical cancer included

cultural issues and taboos such as engagement in sexual intercourse before marriage and annoying spirits of dead elders (Mwaka *et al.*, 2016).

The perception about family planning was also reported by Gatune and Nyamongo (2005) (as cited in Mwaka *et al.*, 2016) in Kenya where participants thought that intrauterine devices cause wounds and infections in the uterus and eventually cause cervical cancer especially when poorly inserted. The majority of lay people seem to believe that prolonged use of family planning medicines can cause cervical cancer. Although a recent systematic review concluded that the evidence for increased risk of cervical cancer due to oral contraceptive use is insufficient (Gierisch *et al.*, 2013), it is important to address the community concerns about the use of contraceptives in relation to increased risk of cervical cancer; otherwise, family planning methods might be avoided.

Most participants believed that having multiple sexual partners would increase the risk of having cervical cancer. One participant from Langas stated.

“We women are always disadvantaged when it comes to having a say about sex. Our men are the ones to determine when they want to have it, how they want to have it and with whom. At the end, we faithful women end up contracting deadly diseases that our men collect from other women and therefore we are not safe at all”. FGD participant No. 1 from Langas.

Similar findings were reported by Aweke *et al.*, 2017 with less than half 254 (43.6%) of the respondents believing that women are at risk of getting cervical cancer while 223 (38.3%) had no idea what factors raised the chance of getting cervical cancer. However, 165 (28.3%) of the participants reported having multiple sexual partners as a risk factor for the disease.

In addition to the causes mentioned above, one of the participants also mentioned wife inheritance and indiscriminate sexual activities during certain ceremonies such as funerals as stated below.

“You know in some communities if your husband dies his brother or close relative will have to inherit you. This means that the man can infect you with whatever ailment the other woman had. Again in ceremonies such as funerals, it is a tradition to have sex with whomever one pleases and this would lead one into contracting bad disease”. FGD participant No. 2 from Langas.

The key informant interviewee from Kapsaret Sub-County indicated that there was generally low awareness on the causes and risk factors of cervical among women in the area of study. This was attributed to the sacred and intimate nature of the disease. This low awareness on the causes and risk factors of cervical cancer would make women to perceive themselves not being at risk and therefore more unlikely to take up measures to prevent the acquisition of HPV hence avoid developing the disease.

Mukama *et al.*, 2017 reported discordant findings where knowledge about the risk factors for cervical cancer was high with most (706; 78.4%) respondents stating that having multiple sexual partners, being infected with the HPV (760; 88.4%) and starting to have sexual intercourse at a young age (665; 73.9%) increased a woman’s risk of developing cervical cancer.

Shibeshi and Degefu reported similar findings where the overall knowledge of the participants on factors contributing to cervical cancer were low and the most common factors mentioned were multiple sexual partners, early sexual intercourse and smoking (Shibeshi and Degefu, 2017).

4.5 Awareness on cervical cancer signs and symptoms

Slight majority of the participants 40.5% (n=162) identified vaginal bleeding as the common sign and symptom of cervical cancer. Twenty seven percent (n= 108) reported abdominal pain while 25.5% (n= 102) reported smelly vaginal discharge. The findings indicate that there is general knowledge about the signs and symptoms of cervical cancer; however this knowledge may be detrimental because women may not seek cervical cancer services without the observable signs and symptoms. This was affirmed by one of the key informant interviewee who reported that there was moderate knowledge of the signs and symptoms of cervical cancer but little or inadequate knowledge about the disease itself. Consequently, women tend to get alarmed about cervical cancer only when they experience any of the signs and symptoms associated with it.

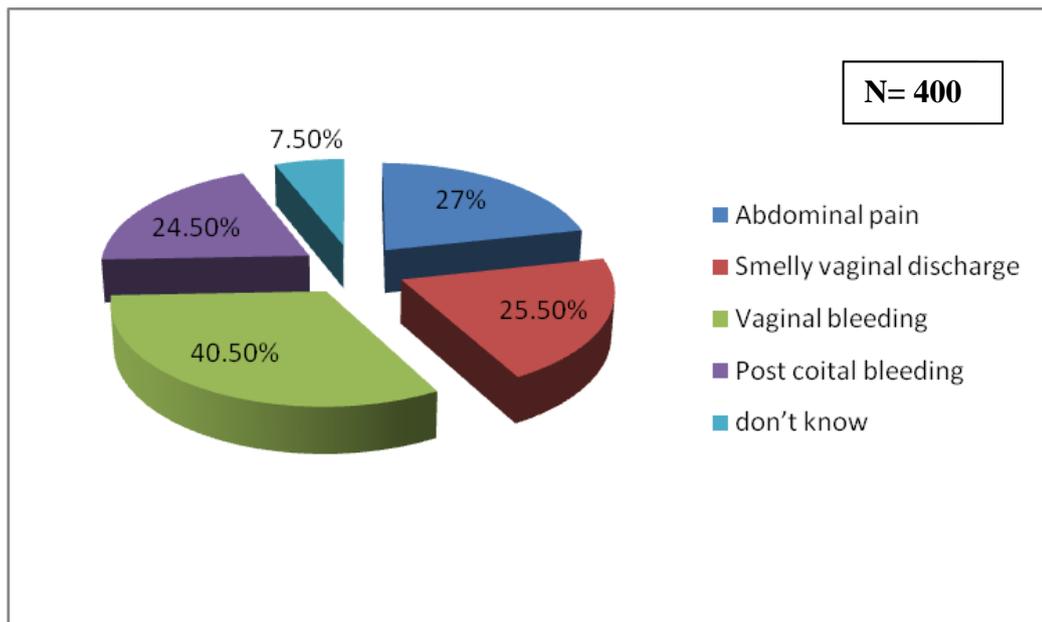


Figure 4. 5: Signs and Symptoms of Cervical Cancer

Source: Researcher (2017)

These are comparable to the findings of Mwaka *et al.*, 2015 where recognition of cervical cancer symptoms was equally good; lower abdominal pain (87.6%) was the most frequently reported cervical cancer symptom. The other symptoms endorsed included intermenstrual vaginal bleeding (84.5%), postmenopausal bleeding (84.1%), offensive vaginal discharge (83.0%), post-coital vaginal bleeding (76.1%) and dyspareunia.

A study in Eastern Uganda reported similar findings where a significant number of women 747 (83.0%) believed that cervical cancer was symptomatic and therefore infected women would have signs and symptoms of the disease. Abdominal pain was ranked most commonly known sign and symptom 520 (57.8%), followed by vaginal bleeding 390 (43.3%) and smelly vaginal discharge came in third at 298 (33.1%) (Mukama *et al.*, 2017).

Regarding the respondents knowledge of the main symptoms of cervical cancer in Shibeshi and Degefu' s findings only 41.42% of the participants reported vaginal foul smelling and vaginal bleeding as the common symptoms and a few didn't know any symptoms of cervical cancer (Shibeshi and Degefu, 2017).

Aweke *et al.*, (2017) reported contrary findings where more than a quarter 209 (35.8%) of the participants affirmed that they had no information about the signs and symptoms of cervical cancer while 220 (37.7%) indicated that persistent pelvic pain was the main symptom of the disease.

A survey conducted by the Ministry of Health in Maldives found out that the knowledge of the common early symptoms was generally poor with only 34.6% women knowing at least one of the symptoms. Majority of them only knew that a rapidly growing lump or a non-healing ulcer could be cancer. But the knowledge of

the other common symptoms of cancer like abnormal bleeding from any site of the body or persistent change in bowel habits etc. was very low (MOH, 2013). These findings are contrary to those of the present study where majority of the participants portrayed good knowledge on the signs and symptoms of cervical cancer.

Only 22.3% (n=81) of the women reported to know anyone with a history of cervical cancer. This would be as a result of the community's perception about cancer and more so cervical cancer which touches on the most sensitive part of a woman's body. This was attested to by the FGD participants as shown in Plate 4.3 and one FGD participant who had this to say;

“Cervical cancer is highly stigmatized in the community and even if someone has died from it, no one will want to say the truth. Even during the sent off (burial) of such an individual you will hear people talk of she had a long illness that affected her stomach, no one will dare mention that it was cancer or even what type of cancer or the part of the body affected”. FGD participant No. 3 from Meibeki/Karuna.



Plate 4. 3 Researcher with participants during an FGD session
Source: Researcher (2017)

Ninety five point eight percent (n=341) thought it is helpful to detect cervical cancer early and 74.5% (n=269) had someone recommend to them that they should get tested or screened for cervical cancer as indicated in Table 4.9.

Table 4. 9: Awareness on cervical cancer

Statement	Yes (%)	No (%)	Don't know (%)
Do you know anyone with history of cervical cancer?	22.3(n=81)	76.8(n=279)	0.8 (n= 3)
Do you think is helpful to detect cervical cancer early?	95.8 (n=341)	3.9(n=14)	0.3(n= 1)
Has anyone recommended that you get tested or screened for cervical cancer?	74.5(n=269)	24.9(n=90)	0.6(n=2)

Table 4. 10: Cross tabulation between education levels with knowing anyone with cervical cancer and recommendation for screening.

Selected socio-demographic factors	Know anyone	Screening recommended
Education level		
None	7(8.0)	11(3.9)
Primary	4(4.5)	11(3.9)
Secondary	32(36.4)	108(38)
Tertiary	44(50)	146(51.4)
Others	1(1.1)	8(2.8)
p-value	0.005	<0.0001*

Source: Researcher (2017)

The Cross tabulation showed a significant relationship between education levels and knowing someone with cervical cancer ($P= 0.005$) and having had someone recommend cervical cancer screening test at ($P=<0.0001$) as indicated in Table 4.10. Those that were more educated were more likely to have known someone suffering from cervical cancer as compared to the less educated or uneducated. This could be attributed to the fact that education is associated with exposure and better knowledge on health matters. The more educated are also more likely to come in contact with individuals who are knowledgeable about cervical cancer screening as compared to their less educated counterparts whose circle of friends and network could be individuals unaware of cervical cancer. There was no correlation between education levels and marital status with whether it was helpful to detect cervical cancer early.

Aweke *et al.*, 2017 reported aligning results where 83 (14.2%) of participants reported having intention to be screened for the disease in any health facility. Among those who had intention to be screened, almost all, 76 (91.6%) of the participants gave a reason that someone recommended the service for them. The health workers 34 (44.0%), neighbors 17 (22.4%), colleagues 10 (13.2%), spouse 8 (10.5%) and relatives 7 (9.2%) were groups who mostly recommended the screening service for the respondents.

Ndejjo *et al.*, 2016 established that the independent predictors for cervical cancer screening were: being recommended for screening by a health worker, knowing where cervical cancer screening services were offered and knowing someone who had ever been screened for the disease. Similar predictors for cervical cancer screening have been reported in previous studies. Other studies found an association between awareness of cervical cancer services and undergoing screening (Ncube *et*

al., 2015; Twinomujuni *et al.*, 2015; Lyimo *et al.*, 2012). Table 4.11 show a Pearson moment correlation between having heard of cervical cancer and whether it was helpful to detect cervical cancer early. There was a positive correlation which had statistical significance at 0.01 level (2-tailed).

Table 4. 11: Correlation on having heard of cervical cancer and whether it is helpful to detect cervical cancer early

		Heard of cervical cancer	Helpful to detect cancer early
Heard of cervical cancer	Pearson Correlation	1	.147**
	Sig. (2-tailed)		.004
	N	397	388
Helpful to detect cancer early	Pearson Correlation	.147**	1
	Sig. (2-tailed)	.004	
	N	388	390

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Although most participants in the FGDs did not demonstrate a good understanding of the part of the body affected by cervical cancer, they were able to mention some of the symptoms of cervical cancer. Abnormal vaginal bleeding was recognized as a symptom of cervical cancer by the majority of the participants. Some participants further characterized this to be bleeding during sexual intercourse (post-coital bleeding), prolonged menstrual periods or abnormal menstrual cycles. Other symptoms that were mentioned included abnormal growth from the vagina, offensive vaginal discharge, abnormal pain and back pain.

4.6 Qualifications for cervical cancer screening

Majority of the respondents, 83.3% (n=280) reported that anyone who had ever had sexual contact qualified to be screened for cervical cancer, 9.8% (n=33) reported that one with signs and symptoms while 5.7% (n=19) and 1.2% (n=4) reported that those that qualified for screening were prostitutes and unfaithful women or those women with unfaithful husbands respectively as indicated in Figure 4.6.

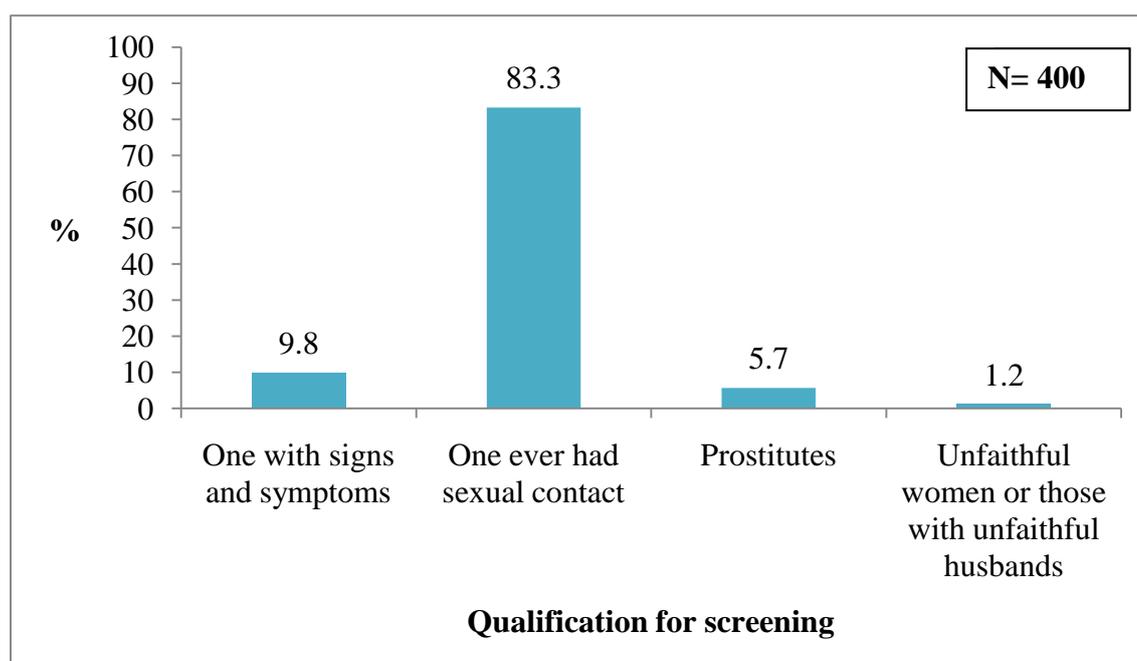


Figure 4. 6: Qualifications for cervical cancer screening

Source: Researcher (2017)

The findings from the current study displayed greater knowledge among the participants as compared to the findings of Shiferaw *et al.*, 2016 where about four out of ten (43.2%) respondents said that women should seek care for cervical cancer only if she showed signs and symptoms in her reproductive organs; about a quarter (25.6%) had no idea about when women should seek care related to cervical cancer.

A study conducted among Chinese American immigrants by Lee–Lin *et al.*, 2007 (as cited by Ramathuba *et al.*, 2016) reported that ‘women believed that women did not need Pap test if they had no symptoms, were not having intercourse with a man and were post-menopausal’. This was contrary to the findings of the current study.

Waiswa *et al.*, 2017 reported discordant findings where some women believed that cervical cancer screening should be only performed on those who present with a reproductive health problem such as vaginal discharge, heavy bleeding, or painful intercourse, those asymptomatic felt should not be screened.

Table 4. 12: Cross tabulation on the education level and employment status with knowledge on who qualifies to be screened

Selected socio-demographic factors	On with signs and symptoms, n (%)	Had sexual contact, n (%)	Prostitutes n (%)	Those in unfaithful relationships n (%)
Education level				
None	5(13.9)	10(3.4)	2(8.3)	2(40)
Primary	1(2.8)	11(3.8)	4(16.7)	1(20)
Secondary	20(55.1)	112(38.6)	12(50)	2(40)
Tertiary	7(19.4)	154(53.1)	5(20.8)	0(0.0)
Others	3(8.3)	3(1.0)	1(4.2)	0(0.0)
p-value	<0.0001*			
Employment status				
Student	5(13.9)	30(10.4)	4(17.4)	0(0.0)
Employed	2(5.6)	112(38.9)	1(4.3)	1(20)
Self employed	10(27.8)	81(28.1)	3(13.0)	0(0.0)
Home maker	17(47.2)	54(18.8)	13(56.5)	4(80)
Retired	2(5.6)	9(3.1)	2(8.7)	0(0.0)
p-value	<0.0001*			

Source: Researcher (2017)

Table 4.12 shows the chi square statistic results for education levels and employment status versus knowledge on who qualifies to be screened for cervical cancer. There was a high significance with a P value of less than 0.0001. More educated women and those that are employed were more likely to know the qualifications for cervical cancer screening.

Moshi *et al.*, 2018 reported aligning findings, where there was a significant relationship ($p < 0.001$) between education level and awareness about cervical cancer and among women without education, 44.3% had never heard of cervical cancer. The predictors of awareness were having secondary or more level of education (AOR = 3.257, 95% CI 2.328–4.557,), residing in urban (AOR = 1.365, 95% CI 1.093–1.705), being affluent (AOR = 2.685, 95% CI 2.009–3.587,), having one to four children (AOR = 1.36, 95% CI 1.032–1.793), and age of 30–34 years (AOR = 3.15, 95% CI 2.353–4.220,), 35–39 years (AOR = 2.46, 95% CI 1.831–3.308,), and 40–44 years (AOR = 3.46, 95% CI 2.497–4.784,).

Most women 83.7% (n=304) were willing to go for cervical cancer screening if they were well and 26.3% (n=95) believed that cervical cancer was incurable. 62.1% (n=223) had heard of ways to prevent cervical cancer. Aligning results were those of Sudenga *et al.*, 2013 where nearly all previously screened women believed that cervical cancer was curable if detected early and that screening should be conducted annually.

These are similar to the findings reported in Shibeshi and Degefu's study, where majority of the respondents perceived that any woman can acquire cervical cancer and also agreed that screening is an important method of prevention (Shibeshi and Degefu, 2017). Shiferaw *et al.*, 2016 reported similar findings where most women

believed that cervical cancer is a preventable (75.3%) and treatable (66.2%) health. A majority of women (85.4%) acknowledged that cervical cancer can be prevented through routine screening for and treatment of precancerous lesions.

In agreement to these findings also is a study by Mukama *et al.*, 2017 where majority (854; 94.9%) of the respondents stated that early detection of cervical cancer was helpful in its treatment while (671; 74.6%) knew that the disease was curable if detected early. Further, most women (852; 94.7%) thought that cervical cancer was a severe disease and the majority (684; 76.0%) believed that they were at risk of developing it.

Erdenechimeg *et al.*, 2010 reported contrary findings where most participants expressed their anxiousness due to lack of information on the effectiveness of the treatment and were not confident of the treatment. This lack of information and confidence about cervical cancer remission and healing was one of the main causes of women refusal to cervical cancer treatment.

Aweke *et al.*, 2017 reported discordant results where, less than half of the respondents reported that cervical cancer is not a preventable disease. However, among those who reported that the disease is preventable, approximately half (288; 49.4%) mentioned early detection and treatment as means of preventing cervical cancer.

Majority of the discussants in the focus group discussion had knowledge of the use of screening as a means of preventing cervical cancer though most of them had not utilized the service. Some participants believed that screening could be used to

prevent cervical cancer while others felt that it could only be used for early detection as indicated below by one of the FGD participant.

“I think if you go early enough and you do your screening and find out that you have it you can start your treatment early rather than you knowing it when it is too late”. FGD participant No. 3 from Langas.

The study findings reveal that though there is satisfactory knowledge about the signs and symptoms of cervical cancer as well as the qualification for cervical cancer screening. However, the study findings indicate that screening uptake was low at only 35.5% (n= 142). This indicates that there is a disconnection between the respondents’ awareness and their health seeking behavior with regards to cervical cancer.

This study found that most women had heard about cervical cancer but were less knowledgeable about the causative agent of cervical cancer. They were adequately knowledgeable about the signs and symptoms, transmission route and qualifications for screening. This high awareness indicates that women may be in position to recognize cervical cancer basing on its symptoms and seek medical attention. Also, when women are aware of the causes and risk factors of cervical cancer and perceive themselves to be at risk, they are more likely to take up measures to prevent the acquisition of HPV hence avoid developing the disease. Indeed, previous studies have showed that awareness of cervical cancer symptoms, prevention measures and perception of being at risk of the disease were associated with intention to go for screening and thus its early detection. However screening uptake was still low regardless of the awareness and knowledge adequacy.

CHAPTER FIVE

RECEPTION OF CERVICAL CANCER CONTROL SERVICES

5.1 Introduction

This chapter presents results on preventive measures for cervical cancer and the reception of cervical cancer control services at the cervical cancer screening facilities.

5.2 Preventive measures for cervical cancer

The respondents were asked if they knew any preventive measures for cervical cancer and they mentioned Pap smear 62% (n=225), vaccination 16.5% (n=60), drugs 8% (n=29) and HPV testing 3.9% (n=14) as shown in Figure 5.1.

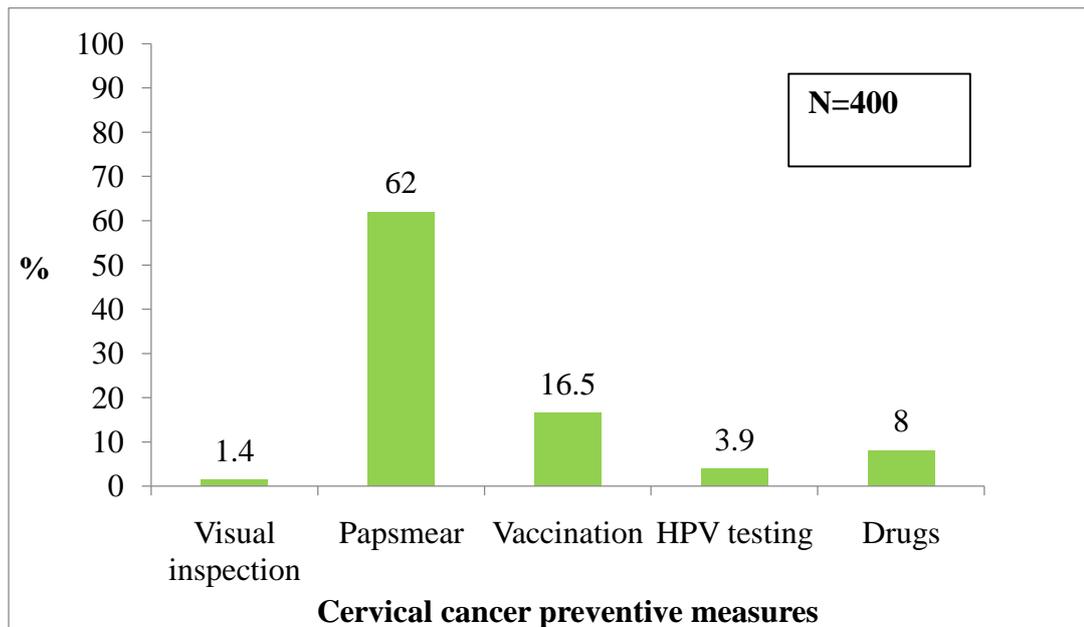


Figure 5. 1: Cervical cancer preventive measures

Source: Researcher (2017)

Toye *et al.*, 2017 reported concordant findings where the most commonly known method of cervical cancer prevention among the respondents was Papanicolaou smear (91.4%) while the least known methods were liquid-based cytology and visual inspection with Lugols iodine (4.3% each). Similarly in Shibeshi and Degefu (2017) majority of the participants mentioned that cervical cancer is treatable when discovered early and correctly mentioned the treatment methods which included chemotherapy, radiotherapy and surgical treatment.

Contrary findings were reported by Nayak *et al.*, 2016 where awareness regarding preventive measures was found to be very poor with just 6% having heard of Pap smear testing and 8% about the availability of a preventive vaccine. Similarly in Morris (2016), most of the respondents interviewed (59.46%) were not aware about the various methods used for cervical cancer screening. A few of the women (8.11%) knew about VIA/VILI test, 16.22% knew about pap smear, 13.51% reported of ultrasound while 2.70% said they knew of HPV test.

Education levels, marital status and employment status were shown to be highly significant as far as knowledge on cervical cancer preventive measures are concerned at ($p < 0.0001$) as shown in Table 5.1. These corroborate with the findings by Ezechi *et al.*, 2013, where education attainment was shown to be associated with acceptance of reproductive services and this was not only linked to women's empowerment of making decision but ability to pay for these services without recourse to their partners. Further education was also linked with patients' self-perception of cervical cancer and understanding health education and counseling that goes on with it. Married women were more likely to be aware of the cervical cancer preventive measures as compared to the single, the divorced, widowed or separated.

A study done in Jamaica reported that of the women who had ever received a Pap smear, 64% had a secondary school education compared with 41.5% of women who had never had a Pap smear (Barba & Juanita 2004). The correlation between higher education level and increased cervical cancer screening attendance is also supported by studies in US, Mexico and Jamaica (Bingham *et al.*, 2003; Fletcher 1999)

Contrary results were however reported by Mukama *et al.*, 2017 where women who belonged to the lower socio-economic category were more knowledgeable about cervical cancer prevention as compared to those from the higher status. This finding is surprising and seemingly counter-intuitive. However, it could reflect service utilization trends in rural areas whereby long waiting hours and poor quality services at health facilities may act as disincentives and hinder working women (Higher income women) from seeking care yet these health facilities could be the major sources of information on cervical cancer in rural areas.

El-Haddad *et al.*, 2013 suggested a positive association between being married or being a member of an unmarried couple and having met cervical cancer screening guidelines in United States. Unmarried, separated or divorced, and widowed individuals appeared to be at a higher risk for not receiving cervical cancer screening within the recommended guidelines' timeframe. The effect of marriage on cervical cancer screening participation could be explained by the attempt of spouses to monitor their spouse's health and promote healthy behaviors. Married individuals may have feelings of obligation and responsibility to one another that could facilitate engagement in healthy behaviors. The presence of emotional support has been implicated as a factor that promotes healthy behavior and increased adherence to cancer screening.

Table 5. 1: Cross tabulation on the socio-demographic factors with knowledge on cervical cancer preventive measures

Selected socio-demographic factors	(Having heard of cervical cancer preventive measures)		
	Yes, n (%)	No, n (%)	Don't know, n (%)
Education level			
None	7(3.0)	10(7.3)	3(15.8)
Primary	7(3.0)	11(8.0)	4(21.1)
Secondary	97(42.0)	54(39.4)	7(36.8)
Tertiary	118(51.1)	58(42.3)	3(15.8)
Others	2(0.9)	4(2.9)	2(10.5)
p-value	<0.0001*		
Marital status			
Single	69(29.4)	31(22.3)	7(35.0)
Married	149(63.4)	69(49.6)	7(35.0)
Divorced	7(3.0)	21(15.1)	2(10.0)
Widowed	6(2.6)	13(9.4)	3(10.0)
Separated	4(1.7)	5(3.6)	1(5.0)
p-value	<0.0001*		
Employment status			
Student	21(9.1)	20(14.8)	7(38.9)
Employed	93(40.4)	32(23.7)	2(33.3)
Self employed	70(30.4)	22(16.3)	6(33.3)
Home maker	38(16.5)	54(40.0)	2(11.1)
Retired	1(0.4)	1(0.7)	0(0.0)
p-value	<0.0001*		

Source: Researcher (2017)

Table 5.2 is a Pearson correlation extracted to show the correlation between the knowledge on the cervical cancer preventive measures and the practice of cervical cancer screening. A high significant correlation was observed at 0.01 level (2-tailed).

Women who were more conversant with the cervical cancer preventive measures were more receptive to the cervical cancer control interventions as compared to those who were unaware of the preventive measures.

This finding corroborate with the results of Ndejjo *et al.*, 2016 where among the respondents, knowing at least one test method for cervical cancer was positively associated with having screened for the disease [COR=2.88 (95% CI:1.48-5.60), p=0.002]. Again, respondents who knew someone with the disease were two times more likely to have been screened compared with their counterparts.

Aweke *et al.*, 2017 reported comparable findings where participants who did not have health seeking behavior were about times 5.45 more likely to have poor knowledge score when compared to those who have health seeking behavior for prevention and control of cervical cancer [AOR: 5.45, 95% CI: (1.18,30.58)]. Similarly, those who had never received information about cervical cancer and its prevention were about 2.63 times more likely to have poor knowledge score when compared to those who had ever received information from any sources [AOR: 2.63,95%CI: (1.78,8.84)]. In the same manner, participants who were not actively seeking health information about cervical cancer were 6.25 times more likely for having poor knowledge score as compared to those who were actively searching health information about cervical cancer [AOR: 6.25, (95%CI: (1.26, 31.06)].

Table 5. 2: Correlation between knowledge on ways of cervical cancer prevention and practice of cervical cancer screening

		Had cervical cancer before	Heard of ways to prevent cervical cancer
Had cervical cancer before	Pearson Correlation	1	.252**
	Sig. (2-tailed)		.000
	N	395	391
Heard of ways to prevent cervical cancer	Pearson Correlation	.252**	1
	Sig. (2-tailed)	.000	
	N	391	394

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Mukama *et al.*, (2017) reported similar findings, where among the respondents, 625 (69.4%) said that cervical cancer could be prevented with 562 (62.4%) correctly stating at least one preventive measure of the disease. The most known measures to prevent cervical cancer reported were early screening (414; 46%) and vaccination (300; 43.3%). However concerning the methods of screening, Mukama *et al.*, found out discordant findings where more than half of the respondents (49; 54.3%) did not know any methods used for screening for cervical cancer. Others though knew liquid based cytological screening (22.8%), HPV test (21.2%) and the pap smear test (13%) as methods for cervical cancer screening.

Netsanet *et al.*, 2016 reported discordant findings where two-thirds of women (66.6%) were unable to mention any treatment options for cervical cancer and a higher proportion of women (89%) did not know the treatment options for precancerous lesions. Similarly Nayak *et al.*, 2015 found out that awareness

regarding preventive measures was very poor with just 6% having heard of Pap smear testing and 8% about the availability of a preventive vaccine.

A Pearson correlation was run to establish whether there was a correlation between respondents who knew people who had suffered cervical cancer and reception to cervical cancer control services. A significance correlation was shown at 0.01 levels (2-tailed) as indicated in Table 5.3. Those women who happened to know someone diagnosed with cervical cancer were two times more likely to have positive attitude towards cervical cancer screening (AOR= 2.1, 95 CI (1.2 3.4) in Getachew (2015) study which support the findings of the current study.

Table 5. 3: Correlation between knowledge of any one with cervical cancer and practice of cervical cancer screening

		Had cervical cancer before	Know anyone with history of cervical cancer
Had cervical cancer before	Pearson Correlation	1	.184**
	Sig. (2-tailed)		.000
	N	395	391
Know anyone with history of cervical cancer	Pearson Correlation	.184**	1
	Sig. (2-tailed)	.000	
	N	391	396

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)



Plate 5. 1: Researcher with participants during an FGD session

Source: Researcher (2017)

The FGD participants (Plate 5.1) identified preventive options for cervical cancer to include early detection, screening, chemotherapy, exercise, spirituality and herbal medicine. However, some of the participants from certain communities had no faith in the use of hysterectomy which they referred to as ‘the use of the knife’ to treat cervical cancer or any other type of cancer.

This is as illustrated below by one FGD participant.

“I have seen many people who have gone to hospital to have their cancers removed by the use of the knife ‘surgery’ and have ended up not coming home ‘dead’. That thing ‘cancer’ does not go hand in hand with the knife. The best way is to use traditional herbal medicine, it has worked for some” FGD participant No. 4 from Meibeki/Karuna.



Plate 5. 2: Research participants during an FGD session

Source: Researcher (2017)

Majority of the respondents opined that cervical cancer can be treated if detected early and especially using herbal medicine as illustrated in plate 5.2. For instance one FGD participant stated below.

“Yes it can be treated if it has not damaged the womb. If it is still around the mouth of the womb and it has not gone very far it can be treated”. FGD participant No 4 from Langas.

Netsanet et *al.*, 2016 reported similar findings were most women believed that cervical cancer is a preventable (75.3%) and treatable (66.2%) health problem. A majority of women (85.4%) acknowledged that cervical cancer can be prevented through routine screening for and treatment of precancerous lesions. Forty three percent of the respondents reported that women should seek care for cervical cancer

only if they showed signs and symptoms in their reproductive organs and 25.6% had no idea about when women should seek care related to cervical cancer.

An assessment of women's knowledge of cervical screening showed 92% of those dying from this form of cancer have never been tested (Neilson and Jones, 1998). It has been noted also that some women lack the knowledge about Pap smear and its indications. Many women do not have a clear understanding of the meaning of an abnormal smear or the concept of pre-cancerous changes and many believe that the purpose of Pap smear test is to detect cancer (Fylan, 2008). Women need full information about treatment if they are to be fully protected.

5.3 Uptake of cervical cancer control services among women of various social backgrounds

Cervical cancer is yet to be recognized as an important public health problem in sub-Saharan Africa. Several studies have shown poor knowledge of the disease in Africa, which even cuts across different literacy levels (Ichaminy, 2015). According to American guidelines, cervical carcinoma screening should begin at 21 years of age, regardless of age of sexual activity or vaccination status, with cervical cytology testing exclusively every 3 years until age 30. For women 30 to 65 years of age, co-testing with cytology and HPV testing every five years is the preferred method of screening, although cytology screening every three years is acceptable. Screening should be discontinued for women over the age of 65 without a history of cervical intraepithelial neoplasia (CIN) grade 2 or higher and who have had adequate negative prior screening results (Baker, 2013).

In the present study only 35.5% (n=142) of the participants had ever been screened in the past (Figure 5.2) of which 46.4% (n=65) had been screened in the last 12 months (Figure 5.3). Although most women could identify the cervical cancer control services as indicated in Figure 5.1, majority 65% (n=260) of them had not utilized the services.

Similar studies in sub Saharan Africa also reported very poor knowledge of the disease in patients (Ogbonna, 2017). Lack of knowledge about screening of cervical cancer in the population and among health care workers is a prime for access to cervical cancer prevention (Gedam and Rajput, 2017). Other reports from the region show that women with HIV develop cervical cancer at an earlier age than women who are HIV negative (Ghebre *et al.*, 2017). Among 500 attendees of maternal and child health clinic in Lagos Nigeria only 4.3% were found to be aware of screening cervical cancer, (Ogbonna, 2017). The major findings of a study in Nigeria of female health workers showed that their cervical cancer screening utilization was very low and there was a wide gap between their personal knowledge and uptake of cervical cancer screening (Abiodun *et al.*, 2014).

A Similar scenario was observed in Uganda where 19% of their female health workers have ever had a cervical cancer screening and reasons for this include not feeling at risk, lack of symptoms, carelessness, fear of vaginal examination, lack of interest and test being unpleasant. It is unlikely that these medical workers would feel motivated to screen others or advise them accordingly (Mukama *et al.*, 2017).

A study carried out on influencing uptake of Cervical Cancer Screening among Women in India showed that knowledge was low among the participants regarding cervical cancer and Pap smear screening. There were no awareness campaigns and

programs regarding disease prevention similar to effective enthusiastic campaigns against the HIV/AIDS, malaria and tuberculosis. Older ladies and family are still being the major reservoir of the health knowledge in Indian society (Singh *et al.*, 2012).

Were *et al.*, 2011 asserted that women with low educational achievement, low awareness of the risk factors for cervical cancer, and who do not have support from their husbands may also have poor uptake of screening services

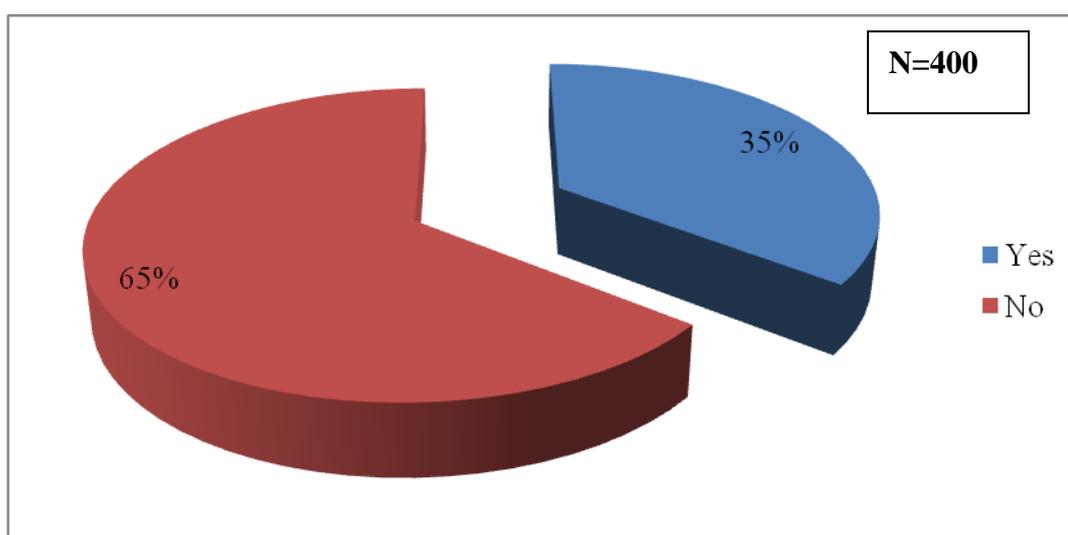


Figure 5. 2: Ever screened for cervical cancer

Source: Researcher (2017)

The practice of cervical cancer in this study was however much higher as compared to the findings by Aweke *et al.*, 2017 where only 58 (9.9%) of the participants had been screened and those who had been informed about the services but not yet screened had mentioned reasons like unavailability of the service nearby 20(3.4%), unaware of where to get the service 12(2. 1%), financial problems 3(0.5%), fear of discrimination 2(0.3%) and other reasons 5 (0.9%).

Similarly higher reception to cervical cancer screening was observed in this study as compared to the study by Twinomujuni *et al.*, 2015, where only 7% of the study respondents had ever screened for cervical cancer and 63% intended to go for cervical cancer screening. Lower reception levels were also seen in a study in Kenya by Gichangi *et al.*, 2003 which reported 20% and 28.9% in a study in Turkey by Gurel *et al.*, 2009. However, the reception levels of cervical cancer screening in the current study were lower when compared with the findings from the study by Toye *et al.*, 2017) where more than half of the women (67.0%) had had at least one cervical cancer screening done previously. Higher reception to cervical cancer screening was also reported in the following studies 40.3% in Jordan (Barghouti *et al.*, 2008), 69% in Spain (Byrd *et al.*, 2004), and 93% in the United States of America (Sirovich *et al.*, 2004).

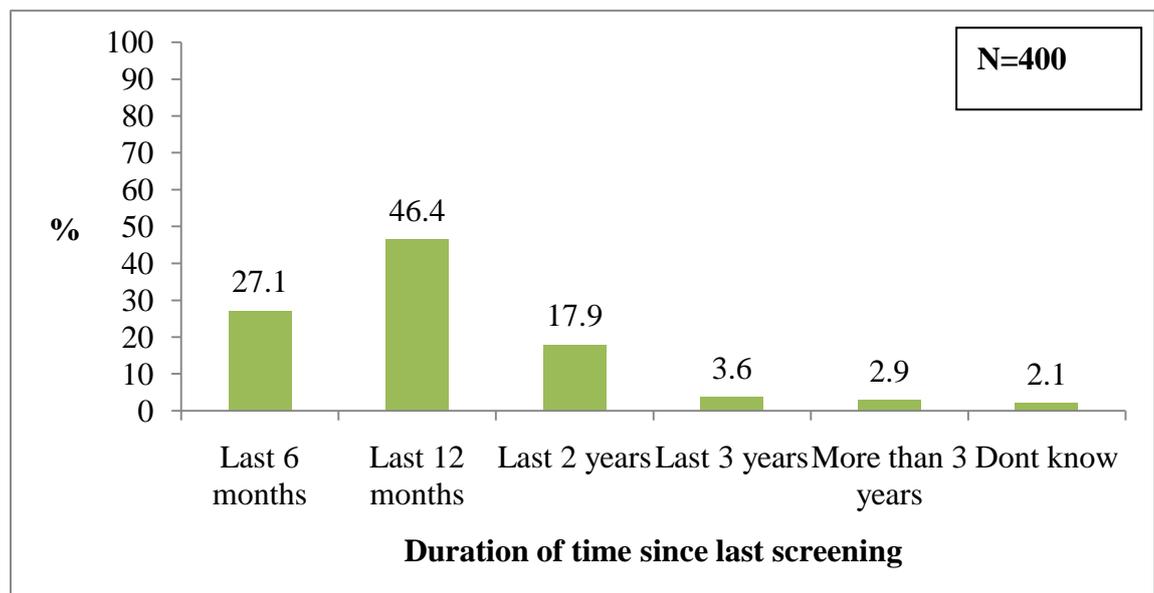


Figure 5. 3: Last screened for cervical cancer

Source: Researcher (2017)

Table 5. 4: Correlation on marital status and practice of cervical cancer screening

		Marital status	Had cervical cancer before
Marital status	Pearson Correlation	1	.071
	Sig. (2-tailed)		.159
	N	400	395
Had cervical cancer before	Pearson Correlation	.071	1
	Sig. (2-tailed)	.159	
	N	395	395

Source: Researcher (2017)

Though the study findings depicted by the Pearson correlation indicated that there was no significant relationship between marital status and the practice of cervical cancer screening as indicated in Table 5.4, the relationship was tending towards significance at (P= 0.071). This is confirmed by the multiple logistic regression (Table 5.5) which indicated that marital status was a significant factor influencing cervical cancer control at (p<0.05). The married were almost 3 times more likely to have been screened compared to others (Divorced, separated and widowed) OR; 95% CI: 2.645(1.261-5.548). The singles were almost 2 times more likely to have been screened compared to others (Divorced, separated and widowed) OR; 95% CI: 1.959(0.784-4.890).

The findings indicate that women’s spouses play a key role in influencing them to seek cervical cancer control services. This could also be explained by the fact that the cervical cancer screening and control services have cost implications and withdrawal periods from sexual activity in case one undergoes treatment for pre-cancerous lesions. Therefore, exploring the option of bringing in men in public health programs

targeting cervical cancer awareness among women may yield great success in the fight against the menace.

Table 5. 5: Multiple logistic regression on the factors associated with utilization of cervical cancer control interventions

Factor	Regression coefficient (β)	SE	OR (95% CI)	P-value
Age	0.31	0.018	1.031(0.996-1.068)	0.082
Age became sexually active	0.066	0.038	1.068(0.991-1.152)	0.085
Education (ref=Tertiary)				0.255
None	0.716	0.571	2.046(0.668-6.269)	0.210
Primary	0.478	0.673	1.613(0.431-6.034)	0.478
Secondary	0.541	0.288	1.718(0.976-3.025)	0.061
Marital status (ref=Sep/div/wid)				0.028
Single	0.672	0.467	1.959(0.784-4.890)	0.150
Married	0.973	0.378	2.645(1.261-5.548)	0.010
Employment (ref=Applicant)				0.001
Student	-1.747	0.699	0.174(0.04-0.686)	0.012
Employment	-0.344	0.609	0.709(0.215-2.340)	0.572
Self	-1.332	0.652	0.264(0.074-0.947)	0.041
Home maker	-1.774	0.688	0.170(0.044-0.653)	0.010

Source: Researcher (2017)

Concordant results were reported by Anaman (2016), where married women were 2.2 times more likely to use Pap smear services compared to single women ($p=0.043$). Other studies also found that unmarried and widowed women were less likely than married to obtain screening (Liao *et al.*, 2006).

These findings are in contrast with other two studies that found out that single women were more likely than married women to have been screened (Cyril *et al.*,2009; Singh *et al.*, 2012). In Getachew (2015), those women who were single were two times more likely to have knowledge of cervical cancer screening than those who were married (AOR= 1.8, 95% CI (1-3.2) which is contrary to what was observed in the current study.

Table 5. 6: Correlation between ethnicity and practice of cervical cancer screening

		Ethnicity	Had cervical cancer before
Ethnicity	Pearson Correlation	1	-.158**
	Sig. (2-tailed)		.002
	N	398	393
Had cervical cancer before	Pearson Correlation	-.158**	1
	Sig. (2-tailed)	.002	
	N	393	395

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Table 5.6 is a Pearson correlation which was run to find out if there was any significant relationship between ethnicity and cervical cancer control. Accepting to go for cervical cancer screening and subsequently treatment and follow up in case of abnormal results were indicators of cervical cancer control practice. The study established that there was a correlation between ethnicity and practice of cervical cancer control. This can be interpreted to mean that people’s behavior, attitude and believes are socially learnt and passed on from generation to generation. Different communities and ethnic groups will thus have different attitudes and perceptions towards cervical cancer and its control interventions.

Table 5.7 is a correlation between having heard of cervical cancer and practice of cervical cancer screening. There was a significant correlation at 0.01 level (2-tailed). Awareness and education have been shown to improve the health seeking behavior of individuals as it relates to uptake of cervical cancer services including testing. With awareness, one is likely to know the benefits of the test and thus opt for it. Awareness about cervical cancer is thus playing a critical role in influencing reception towards cervical cancer control interventions.

These finding were supported by a research by Getachew (2015) where women who were knowledgeable of cervical cancer were five times more likely to have knowledge of cervical cancer screening than those who were not knowledgeable (AOR=5, 95% CI (2.7-9)).

Concordant findings were reported by Ezechi *et al.*, 2013 where awareness of cervical cancer screening and testing was found to be independently associated with the acceptance of cervical cancer screening. Corroborating findings were reported by Bansel *et al.*, 2015 where education level was shown to influence attitude toward cervical cancer screening.

Table 5. 7: Correlation on having heard of cervical cancer and practice of cervical cancer screening

		Heard of cervical cancer	Had cervical cancer before
Heard of cervical cancer	Pearson Correlation	1	.134**
	Sig. (2-tailed)		.008
	N	397	392
Had cervical cancer before	Pearson Correlation	.134**	1
	Sig. (2-tailed)	.008	
	N	392	395

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Table 5. 8: Correlation on having someone recommend to get tested and willingness to go for screening

		Recommended to get tested	Willing to go for cancer screening
Recommended to get tested	Pearson Correlation	1	.188**
	Sig. (2-tailed)		.000
	N	395	394
Willing to go for cancer screening	Pearson Correlation	.188**	1
	Sig. (2-tailed)	.000	
	N	394	399

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

There was a significant correlation at 0.01 level (2-tailed) ($P = <0.0001$) between having being recommended to get tested and willingness to go for cervical cancer screening as shown in Table 5.8. This underscores the importance of social influence in promoting cervical cancer screening. Social influence is a process where people directly or indirectly influence thoughts, feelings and action of others. Information about cervical cancer should also be targeted to social groups in the community such as women and youth groups to encourage increased utilization of screening services.

Inequality in education, income, and occupation exacerbates the gaps between the health “haves” and “have-nots.” The most fundamental causes of health disparities are socioeconomic disparities. Socioeconomic status has traditionally been defined by education, income, and occupation and each component provides different resources, displays different relationships to various health outcomes, and would be addressed by different policies (Adler and Newman, 2002).

Table 5. 9: Cross tabulation on employment status and practice of cervical cancer screening

	Reception to cervical cancer control services (Having been screened for cervical cancer)	
	Yes, n (%)	No, n (%)
Employment status		
Student	7(5.0)	39(15.9)
Employed	68(48.9)	59(24.1)
Self employed	34(24.5)	65(26.5)
Home maker	22(15.8)	74(30.2)
Retired	7(5.0)	7(2.9)
p-value	<0.0001*	

Source: Researcher (2017)

The findings of the present study revealed a high significant correlation between employment status and practice of cervical cancer screening as shown in Table 5.9. This has also been shown in other studies where the decision to have cervical cancer screening has been shown to be mainly influenced by economic factors. Qualitative studies conducted in India, South Africa and Uganda found out that older women who were of low economic status and unemployed, were less likely to participate in cervical cancer screening (ACCP, 2004; Bradly *et al.*, 2004; Kaku *et al.*, 2008; Satija, 2009; WHO, 2010 as cited in Ichaminya, 2015).

In the USA, Garner (2003) found that women in minority, socio-economically disadvantaged, and rural populations have not equally benefited from Papanicolaou test (Pap smear) screening. Other studies in South Africa reported that women without partners were less likely to participate in screening (Bradley *et al.*, 2004; WHO, 2010), while in the Netherlands, a big number of participants in a study did not view cervical cancer as a big problem (Ichaminya, 2015). Thus, to improve

uptake of cervical cancer screening, it is crucial that organized screening programs take services nearer to the communities, and this needs to be coupled with information on its importance, and increased efforts to understand (and positively change) women's perception of the disease (Atuhaire, 2013).

In a qualitative study done in Uganda, Mutyaba *et al.*, 2007 asserted that having money increases the probability of utilizing cervical cancer screening and access to information and utilization of health care services, while Satija (2009) and Kaku *et al.*, 2008 found that low socio economic status interferes with adherence and follow up of treatment leading to further morbidity and mortality from the disease.

Kagumire (2010) found that large proportions of women in Uganda cannot afford transport costs to the regional referral hospitals which provide cervical cancer screening services. Bansal *et al.*, 2015 reported similar findings where the study participants with higher per capita family monthly income were more likely to have a positive attitude toward cervical cancer and its control interventions.

In Latin America, many uninsured and under insured Latino patients are in survival mode. Basic needs, such as keeping food on the table and paying for housing consume their daily lives. Many are on the edge of being homeless and some are, in fact, homeless. Cervical cancer screening is viewed as a luxury and as one Latina health care provider stated,

“If you don't have money for treatment, you don't want to know if you're sick”.

This attitude may be reinforced by past experiences in Latin American countries, where treatment for cancer was unavailable due to lack of financial resources. For

many people, healthcare in Latin America was inaccessible and unaffordable, and many experience the same situation in the U.S (Lopez *et al.*, 2017).

A cross-sectional study conducted by Gianfranco (2007) using data from the 2004-2005 national health interview survey in Italy, indicated that Socio-economic factors were shown to be strongly related to the use of preventive services. Disparities in the utilization of cervical cancer screening were widely identified.

Comparative studies on the use of preventive services in Europe showed inequalities in the participation to screening programs, although the size of the inequality varied among countries. Women with lower health literacy were less likely to carry out routine cancer screening. Low socioeconomic status is all accompanied by a low chance of undergoing cancer screening procedures (Kim and Kang, 2016).

Mukama *et al.*, 2017 reported contrary findings where women who belonged to the lower socio-economic category were more knowledgeable about cervical cancer prevention compared to those from the higher status. This finding is surprising and seemingly counter-intuitive. However, it could reflect service utilization trends in public health facilities whereby long waiting hours and poor quality of services may act as a disincentive and hinder more educated women from seeking care yet these health facilities could be the major sources of information on cervical cancer.

These findings are similar to Adler and Newman's findings where education was perhaps the most basic SES component since it shapes future occupational opportunities and earning potential. It also provides knowledge and life skills that allow better-educated persons to gain more ready access to information and resources to promote health (Adler and Newman, 2002).

Similar results were reported by Bansal *et al.*, 2015 where education, age and income were independent predictors of better knowledge. Education level was found to influence attitude towards screening and actual practice depended on age, income and marital status. Similarly, women with ages greater than thirty, secondary or higher level of education and those who were either employed or students were more likely to have adequate knowledge.

Table 5.10 depicts the correlation between age of sexual activity and practice of cervical cancer screening. Age of sexual activity was shown to have significance on cervical cancer screening practice at 0.05 level (2-tailed). This can be explained by the fact that majority of the women 73% (n=229) in the present study identified sexual contact as the main route of cervical cancer transmission. In this regard then, those women who may have had sexual contact felt more at risk of cervical cancer and this could have compelled them to be receptive to cervical cancer control services.

Table 5. 10: Correlation on age of sexual activity and practice of cervical cancer screening

		Age sexually active	Had cervical cancer before
Age sexually active	Pearson Correlation	1	-.120*
	Sig. (2-tailed)		.017
	N	400	395
Had cervical cancer before	Pearson Correlation	-.120*	1
	Sig. (2-tailed)	.017	
	N	395	395

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher (2017)

Only 22.2% (n=84) had heard about HPV vaccine of which 25% (n=21) had been vaccinated with the HPV vaccine. Eighty nine point three percent (n=75) reported that if they had a daughter, they would consider vaccinating them with HPV vaccine. This is an indication that more efforts need to be put in educating women on HPV vaccination and its important role in cervical cancer prevention.

These are comparable with the findings of Teye *et al.*, 2017 where a large proportion (96.2%) also agreed that awareness of risk factors and healthy lifestyle can prevent cervical cancer. A vast majority of respondents (87.6%) agreed that women should be screened at least once in their lifetime while up to 76.2% of respondents favour vaccination of their teenage girls with the HPV Vaccine.

Krishnaveni *et al.*, 2018 reported similar findings where majority of the women had poor knowledge and attitude about cervical cancer and its screening. It was found that 98.9% of the women had never been vaccinated against cervical cancer and 82.2% had never undergone cervical cancer screening and 30.4% offered fear of procedure as the reason for not undergoing pelvic examination.

The main challenges to increasing access to and improving the quality of cervical cancer screening services include: lack of updated National guidelines on cervical cancer prevention and control, low level of community awareness on the importance of screening coupled with low knowledge of common symptoms of cervical cancer and inadequate skills among service providers (NCCP, 2012).

To increase knowledge on screening cervical cancer one should do the following; raising awareness among men on cervical cancer prevention and control through media, workplace programs, religious and other social activities. Use Media and ICT

to improve awareness. Development and dissemination of IEC/BCC materials, Provision of health talks in facilities and communities, Use of community role models/ champions and integrate cancer prevention and control into the CHW training and roles (Were *et al.*, 2011).

This was supported by the KIIs who reported that among the possible ways to improve screening were; mobilization, outreaches, education on retrogressive socio-cultural behavior, male involvement, availing most efficient cervical cancer screening methods and using cervical cancer survivors to enlighten others. Health promotion strategies included mobilization while challenges of health promotion strategies were lack of awareness among the respondents and non-responsiveness even after promotion.

CHAPTER SIX

ATTITUDES AND PRACTICES ASSOCIATED WITH CERVICAL CANCER CONTROL

6.1 Introduction

This chapter presents results on the attitudes and practices associated with cervical cancer among women of various social backgrounds. Although knowledge plays a critical role in influencing women's decision to screen, some women nevertheless do not undergo screening. For example studies conducted among health workers, who are expected to be knowledgeable, have also found low screening uptake rates, therefore women's attitude towards cervical cancer screening are equally important. Attitude regarding perceived risk, screening methods used, perceived pain during screening have been suggested to influence decisions to undergo the procedure (Mukama *et al.*, 2017).

6.2 Attitudes and practices associated with cervical cancer

Dibaba asserts that several factors such as educational status, financial capability, location, presence of health care facilities determine the stage at which patients with cervical cancer present to the health facility. However, a common denominator of these factors is the level of awareness and attitude patients have about the disease (Dibaba, 2016).

Bhabani *et al.*, 2017 found out that nursing staff in tertiary care hospital of Uttarakhand, India had average attitude towards cervical cancer but has limited understanding of different types of cervical cancer screening technique. Abdallah *et al.*, 2016 revealed that half health workers in Khartoum State Universities, Sudan

showed positive attitudes towards HPV vaccination and were eager to recommend HPV vaccine to their family and other members of the community. Another study conducted in Botswana witnessed that negative attitude of health service providers and limited access to the doctors was among the major barriers to cervical cancer screening services (Tapera *et al.*, 2017).

Similar study by Chennai Corporation in India female HCPs have better attitude towards cervical cancer screening than knowledge in all the professions except for health sector Nurses. About 81.3% of HCPs believed that cervical cancer can be detected even before the symptoms appear (Owoeye & Ibrahim, 2013).

Most women agreed that cervical cancer was talked about freely in their community 60.8% (n=214) and 82.9% (n=296) agreed that the girl child was given equal chance as the boy child in their communities. They also agreed that any procedure to detect or treat cervical cancer that involved the use of the knife was deadly and unsuccessful 70.2% (n=250) and that women were allowed to make major decisions concerning their health 82% (n=288).

However, majority disagreed that young girls were married off early in their communities to acquire wealth through dowry 92.1% (n=328). Most participants disagreed that women were allowed to inherit land and other productive assets 76.4% (n=269) and also disagreed that cultural rituals such as FGM would influence a woman's decision to get screened for cervical cancer 89.5% (n=314) among others as indicated in Table 6.1.

Table 6. 1: Attitudes and practices associated with cervical cancer control

Statement	Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly disagree n (%)	Mean (SD)
Cervical cancer is discussed freely in my community	18(5.1)	196(55.7)	103(29.3)	35(9.9)	0.8(2.4)
The girl and boy child are given equal chance	86(24.1)	210(58.8)	48(13.4)	13(3.6)	0.7(2.0)
Cervical cancer is punishment from God	1(0.3)	15(4.2)	137(38.2)	206(57.4)	0.6(3.5)
Cervical cancer is caused by witchcraft	3(0.8)	2(0.6)	99(27.7)	253(70.9)	0.5(3.7)
Surgery to detect or treat cervical cancer is deadly and unsuccessful	68(19.1)	182(51.1)	77(21.6)	29(8.1)	0.9(2.2)
Cervical cancer can only be cured through a witch doctor	11(3.4)	5(1.4)	213(59.7)	128(35.9)	0.6(3.3)
Post coital bleeding is a sign of an unfaithfulness	12(3.4)	23(6.6)	252(71.8)	64(18.2)	0.6(3.0)
FGM reduces promiscuity	3(0.8)	14(4.0)	245(69.4)	91(25.8)	0.6(3.2)
Women who have had the cut do not need to go for screening	5(1.4)	15(4.2)	246(69.7)	87(24.6)	0.6(3.2)
Cultural rituals influence a woman's decision to get screened	7(2.0)	30(8.5)	252(71.8)	62(17.7)	0.6(3.1)
Women are allowed to inherit assets	13(3.7)	70(19.9)	231(65.7)	38(10.8)	0.7(2.8)
Women make major decisions	58(16.5)	230(65.5)	46(13.1)	17(4.8)	0.7(2.1)
Young girls are married off early to acquire wealth	8(2.2)	20(5.6)	198(55.6)	130(36.5)	0.7(3.3)

Source: Researcher (2017)

On average, respondents agreed that cervical cancer was talked about freely in their community and that the girl child was given equal chance as the boy child. They also agreed that any procedure to detect or treat cervical cancer that involved the use of the knife was deadly and unsuccessful and that women were allowed to make major decisions concerning their health (mean \leq 2).

The respondents disagreed that cervical cancer was a punishment from God for unfaithfulness, they also disagreed that cervical cancer was a disease caused by witchcraft and that cervical cancer could only be cured through witch doctor's intervention. They also disagreed that post coital bleeding was an indication that one's spouse was unfaithful. Furthermore, they disagreed that FGM reduces cervical cancer as it eliminates promiscuity and that someone who had undergone FGM or other cultural rituals did not need to go for cervical cancer control. They further disagreed that cultural rituals such as FGM influence a woman's decision to get screened for cervical cancer, that women are allowed to inherit land and other productive assets and that young girls were married off early in their community to acquire wealth through dowry (Mean \geq 3).

To encourage women to seek cervical cancer control services, the participants reported that there was need to create awareness 77.8% (n=207), free service provision 12.4% (n=33), availing of the services 5.6% (n=15) and early detection of the disease 4.2% (n=11).

Concerning the finding that women needed awareness for them to act, Musa *et al.*, 2017 found evidence of an increase in cervical cancer screening rates in women exposed to cervical cancer education. Similarly in a study by Ndejjo *et al.*, 2017 the study participants stated that due to their lack of knowledge, it was sometimes hard

for them to access screening services without relating their symptoms with the disease. The key informants also re-echoed this stating that most women do not take the initiative to access screening without the signs and symptoms of the disease.

These results were in concordance with the FGD findings where the participants reported that majority of the women were not aware of the disease and that it can be prevented. They reported that it is even rare to find out if someone has died from it because it is kept as a top secret as reported by one of the FGD participant;

“Cancer is not a disease that people will be comfortable talking about it freely; it even becomes worse when you talk of cervical cancer, no one wants to mention it since it is associated with sexual intercourse and promiscuity. If it is discovered that someone has it (cervical cancer) people will think negative about you and your spouse, it is like having HIV/AIDS”. FGD participant No. 5 from Meibeki/Karuna.

Only 28.9% (n=101) women reported that sexual issues are discussed freely in their community revealing that issues of sexuality in the community where the study was carried out are treated with a lot of caution and this could explain the low numbers of women screened regardless of the moderate levels of awareness amongst them. The findings indicated that there was a disconnection between the respondents’ awareness and their health seeking behavior with regards to cervical cancer.

Table 6.2 is a Pearson correlation between cervical cancer being discussed freely and willingness to go for cervical cancer screening. There was a significant correlation at 0.01 level (2-tailed). This can be interpreted to mean that amongst communities or ethnic groups where cervical cancer and sexual issues were discussed freely, willingness to go for the screening was heightened. This is attributed to the awareness that one is exposed to during these discussions.

Table 6. 2: Correlation between cervical cancer being discussed freely and willingness to go for screening

		Cervical cancer is talked about freely in my community	Willing to go for cancer screening
Cervical cancer is talked about freely in my community	Pearson Correlation	1	.163**
	Sig. (2-tailed)		.001
	N	388	387
Willing to go for cancer screening	Pearson Correlation	.163**	1
	Sig. (2-tailed)	.001	
	N	387	399

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Table 6.3 is a Pearson correlation between the girl child being given equal chances as the boy child and willingness to go for cervical cancer screening. A positive correlation was established at 0.01 level (2-tailed). Communities who valued both the male and female genders were also more likely to be responsive to cervical cancer control services. Again, when the girl child is given equal opportunities and treatment as the boy child, she becomes empowered and can make informed choices concerning her health. Otu and Nkamare (2012) assert that disparities in the way girls and boys are raised and treated are at the root of many sexual and reproductive health problems and development challenges. Though the study did not lend itself to the role played by the boy child in cervical cancer control, it however underscores the fact that the excluded boy is positioned as missing out on an opportunity to play a role in the prevention of cervical cancer. He hears about the vaccination programme from female classmates but may not even contemplate that cervical cancer

prevention can involve him, or that, later in life, he can transmit the infection. This erases boys not only from the particular campaign, but also from possibilities for decision making about sexual health (Davies & Burns, 2014).

Table 6. 3: Correlation between girl and boy child being given equal chance and willingness to go for screening

		Willing to go for cancer screening	The girl child is given equal chance as the boy child in my community
Willing to go for cancer screening	Pearson Correlation	1	.228**
	Sig. (2-tailed)		.000
	N	399	392
The girl child is given equal chance as the boy child in my community	Pearson Correlation	.228**	1
	Sig. (2-tailed)	.000	
	N	392	393

** . Correlation is significant at the 0.01 level (2 tailed).

Source: Researcher (2017)

The findings established that there is a high correlation at 0.01 level (2-tailed) between women being allowed to make major decisions concerning their health and having had cervical cancer screening as shown in Table 6.4. This can be interpreted that women empowerment is key in decision making and subsequently reception of cervical cancer control services. When women are empowered they can make informed choices concerning their health including seeking cervical cancer screening services, they can negotiate for safe sex thus avoiding the consequences of acquiring Human Papilloma Virus (HPV), they can negotiate for abstinence from sex during treatment for precancerous lesions and above all be able to pay for any cervical cancer services that they may require.

The findings however, indicated that women are not allowed to inherit land and other productive assets and that would deter a woman from seeking cervical cancer control interventions given the financial implications attached to the services.

Table 6. 4: Correlation between women making major decisions concerning their health and cervical cancer screening

		Women making major decisions concerning their health	Had cervical cancer before
Women are allowed to make major decisions concerning their health	Pearson Correlation	1	.165**
	Sig. (2-tailed)		.001
	N	384	380
Had cervical cancer before	Pearson Correlation	.165**	1
	Sig. (2-tailed)	.001	
	N	380	395

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Table 6.5 is a Pearson correlation extracted to show the correlation between the misconception that any procedure to detect or treat cervical cancer that involves the use of the ‘knife’ (in referring to surgery) is deadly and unsuccessful and the willingness to go for cervical cancer screening. A high significance at 0.01 level (2-tailed) was recorded. This can be interpreted to mean that respondents who had the misconception that any procedure to detect or treat cervical that involved the use of the knife is deadly and unsuccessful were less likely to seek cervical cancer control services.

Table 6. 5: Correlation between the believe that ‘knife use’ is deadly and willingness to go for cervical cancer screening

		Procedure to detect or treat cervical cancer that involves the use of the ‘knife’ is deadly and unsuccessful	Willing to go for cancer screening
Procedure to detect or treat cervical cancer that involves the use of the ‘knife’ is deadly and unsuccessful	Pearson Correlation	1	-.181**
	Sig. (2-tailed)		.000
	N	392	391
Willing to go for cancer screening	Pearson Correlation	-.181**	1
	Sig. (2-tailed)	.000	
	N	391	399

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Aligning findings were reported by Mwaka *et al.*, 2015 where the notion that cervical cancer spreads when a patient with cervical cancer has surgical treatment was reported by about 1 in 4 participants (29.9%). The odds of believing that cervical cancer spreads once operated on was 2.5 to 5 times higher among older participants (aged 45–59 and ≥ 60 years) compared to participants aged 18–29 years.

Contrary results were however reported by Tapera *et al.*, 2017 where some respondents 120 (35.8%) chose surgery as the most effective treatment method of cervical cancer whilst some of the respondents stated that they don’t know how cervical cancer can be treated 36 (10.7%). The majority of the respondents 276 (79.7%) indicated that cervical cancer can be treated and 329 (98.2%) were aware that there are screening procedures to detect cervical cancer.

There is therefore need for targeted culture-sensitive public campaigns to increase awareness about cervical cancer treatment and potential for cure when diagnosed in early stage, discourage fatalistic beliefs about cervical cancer and correct the belief that surgical operation leads to spread of cancer.

CHAPTER SEVEN

BARRIERS TO CERVICAL CANCER CONTROL INTERVENTIONS

7.1 Introduction

This chapter presents results on the rating of cervical cancer control interventions and the barriers associated with utilization of these interventions.

7.2 Rating overall experience at the cervical cancer facility

For those who went for cervical cancer screening, 96.1% (n=123) were explained the procedure by the staff in a language that was understandable to them and 89% (n=113) understood what was expected of them before and after screening. Hundred and nine (85.8%) were given enough time to prepare for the procedure and 96.8% (n=121) had their privacy adequately maintained during the procedure. Only 4.9% (n=6) rated the overall experience at the cancer facility as excellent as shown in Figure 7.1.

The FGD participants confirmed these findings by reporting that the overall experience was not good at the cervical cancer facilities. They described some of the things that caused them discomfort including; male health practitioners having to examine them down there, Nurses describing how they looked down there, rebuke from the health practitioners on why they turned up late at the health facility when their disease was advance among others. For instance one FGD participant described her experience as horrible as stated below

“The health care providers are sometimes so arrogant and very insensitive, imagine people (Screening staff) discussing you there in the screening room and quarrelling you why you fear the speculum as though you are a virgin, I regret going for the screening” FGD participant No. 5 from Langas.

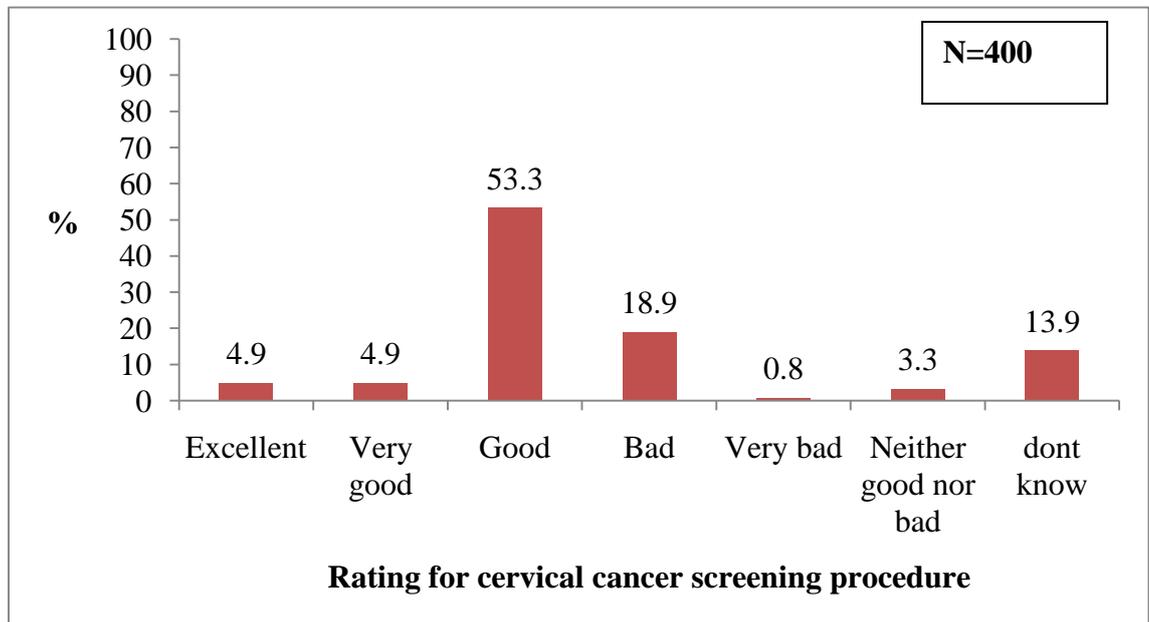


Figure 7. 1: Rating overall experience at the cervical cancer facility

Source: Researcher (2017)

Similar results were reported by Erdenechimeg *et al.*, 2010 where participants said that the waiting room for screening services was crowded, inconvenient and lacked information pamphlets, booklets and posters about cervical cancer. Again study participants wanted to ask about cervical cancer screening process from their physicians but they feared that doctors would criticize them for presenting themselves at that late stage. On the other hand they said that doctors were usually very busy and it was also very hard to communicate with them due to their bad attitude.

Majority of the women who were screened were normal 85.4% (n=105) but still 8.1% (n=10) didn't know their screening outcome. For those with abnormal outcome 6.5% (n=8) reported to have been asked to come back another day. Hundred and ten (94.8%) said that their spouse could agree to have them and even finance their going for cervical cancer control. This is an indication that spouse approval and financial support is critical in the fight against cervical cancer menace.

Huchko *et al.*, 2017 reported similar findings where almost all women in the community health campaigns (CHC) and control arms found the self-collection instructions clear (99.8%), rated the privacy as adequate (99.3%) and would recommend testing to a friend (99.0%)

7.3 Barriers to utilization of cervical cancer control interventions

Majority of the women 94.5% (n=328) trusted the conventional methods of cervical cancer control. For the 4% (n=14) that did not trust, 71.4% (n=10) reported the fear of getting other infections in the process. This was confirmed by the Pearson correlation which showed a significance of 0.01 level (2-tailed) as shown in Table 7.1. The interpretation of this finding is that the respondents that trusted the conventional methods of cervical cancer control were more likely to go for cervical cancer screening.

Table 7. 1: Correlation between trust for conventional cervical cancer control and willingness to go for screening

		Willing to go for cancer screening	trust the conventional methods of cervical cancer control
Willing to go for cancer screening	Pearson Correlation	1	.288**
	Sig. (2-tailed)		.000
	N	399	380
trust the conventional methods of cervical cancer control	Pearson Correlation	.288**	1
	Sig. (2-tailed)	.000	
	N	380	380

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Majority of the participants (n=218) agreed that training female midwives will increase the number of women seeking services and elimination of male practitioners performing cervical cancer screening was reported to increase reception of cervical control services among women as indicated by 46.8% (n=159) though 49.7% (n=169) of the participants objected.

Table 7.2 is a Pearson correlation depicting the relationship between having female midwives do the cervical cancer screening and willingness to go for cervical cancer screening by the respondents. A significant correlation was observed at 0.05 level (2-tailed). The interpretation of this finding is that the gender of the health care provider in the cervical cancer screening and treatment plays a key role in the health seeking behavior of women.

These findings were confirmed by the KIIs who reported that the poor attitude that women have about a male health practitioner performing the screening played a key

role in their health seeking behavior for cervical cancer screening and control services. They reported several incidences where women had been enlightened on the importance of screening and were even willing to be screened only to decline the last minute on realizing that it was a male clinician performing the procedure. The gender of the health care provider could then act as a barrier to the reception of cervical cancer control services.

Rees *et al.*, 2017 reported similar findings where many women described their emotional discomfort with having a male practitioner performing their pap smear and 70% of women reported feeling uncomfortable receiving a pap smear from a male clinician.

Table 7. 2: Correlation between female midwives doing screening and willingness to go for cervical cancer screening

		Willing to go for cancer screening	Does screening by female midwives increase the uptake of screening
Willing to go for cancer screening	Pearson Correlation	1	.124*
	Sig. (2-tailed)		.016
	N	399	379
Does screening by female midwives increase the uptake of screening	Pearson Correlation	.124*	1
	Sig. (2-tailed)	.016	
	N	379	379

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher (2017)

Waiswa *et al.*, 2017 asserts that although previous vaginal examination is positively associated with willingness to undergo a screening test for Cervical Cancer (Balogun *et al.*, 2012), such pelvic assessments need to be performed in a manner that warrants privacy and or presence of female chaperons especially for older women who often feel uncomfortable or embarrassed being assessed by the male gender which hinders their screening test acceptability.

Similarly Mutambara *et al.*, 2017 found out that most women did not experience embarrassment undergoing a Pap smear test. However, most reported that the gender of the health provider carrying out the Pap smear test had a significant influence on how they perceived the test. Such evidence literally brings out the underlying element of embarrassment that women felt if the doctor was either male or female.

In Ndejjo *et al.*, 2017 a similar scenario was observed where women expressed different concerns about the testing methods used during cervical cancer screening from the way they are handled by health workers to who handles them. They said they were uncomfortable undressing before health workers especially if they were male.

Correspondingly, Nicky (2005) reported an interesting finding of a cultural/religious belief that Muslim women can only be seen naked by their husbands; which influenced their preference for female general practitioners especially for cervical smears. Also in this study, it was revealed that Pakistani Muslims were not comfortable attending to a doctor from the same cultural background they would only go along for a smear test if the doctor was not of the same cultural background for fear of being found out.

The FGD participants reported that the main barrier to cervical cancer screening was the embarrassment associated with the intimate nature of the screening and the gender of the exam provider. One FGD participant had this to say

“Many of us women prefer to have a female doctor examine you because nothing is new to her. On the other hand if it is a man you will really tense and you will definitely feel emotionally compromised” FGD participant No. 6 from Meibeki/Karuna.

Table7. 3 : Correlation between use of traditional herbal medicine and willingness to go for screening

		Willing to go for cancer screening	Incorporation of traditional herbal medicine into cervical cancer control services improves its uptake
Willing to go for cancer screening	Pearson Correlation	1	-.115*
	Sig. (2-tailed)		.025
	N	399	380
Incorporation of traditional herbal medicine into cervical cancer control services improves its uptake	Pearson Correlation	-.115*	1
	Sig. (2-tailed)	.025	
	N	380	380

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher (2017)

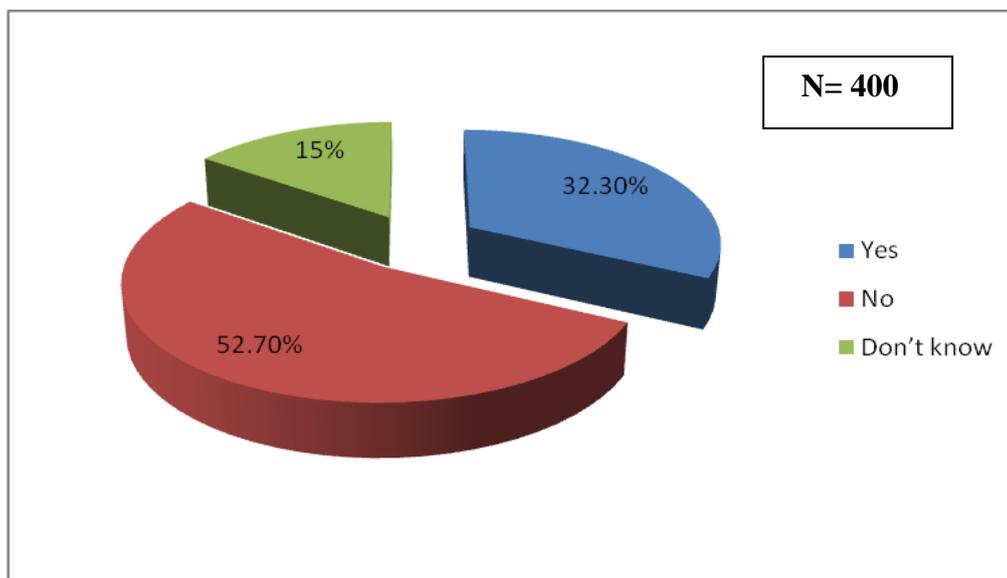


Figure 7. 2 Incorporation of traditional herbal medicine into cervical cancer control

Source: Researcher (2017)

Only 32.3% (n=129) agreed that incorporation of traditional herbal medicine into cervical cancer control services would improve its uptake among women while 52.7% (n=211) objected as shown in figure 7.2. The Pearson correlation showed a significant correlation between incorporation of traditional herbal medicine into cervical cancer control services and willingness to go for cervical cancer control services at 0.05 level (2-tailed) as shown in Table 7.3. Traditional herbal medicine has long been highly valued in the cure of various diseases by various communities and more so in the African continent.

Jedi-Agba and Adebamowo (2012) reported concordant findings where participants considered cancer to be a fatal condition, one which has no treatment except through ‘supernatural’ interventions. Some participants even opining that they or their relatives would prefer to seek alternative medicine practitioners if they had cancer.

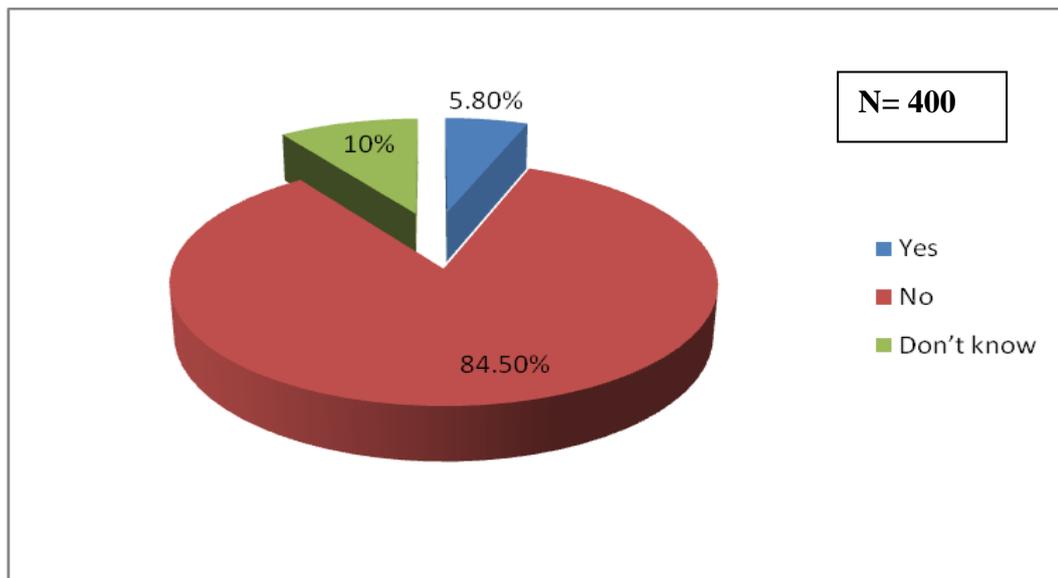


Figure 7. 3 Perception of cervical cancer being a private issue

Majority 84.5% (n=338) of the respondents reported that cervical cancer is not a private issue affecting the most private part of a woman’s body and should not be discussed freely as indicated in figure 7.3. Concerning the stigmatization associated with cervical cancer, 85.5% (n=342) disagreed that people will not want to associate with one if they discover that she had cervical cancer while 5.8% (n=23) thought that someone would be stigmatized. Two hundred and eighty (80%) reported that a positive diagnosis of cervical cancer is not deadly and that it is not better if someone remains unaware of her condition.

Majority of the discussants from the focus group discussion believed that they could develop cervical cancer as long as they were engaged in sexual relationships and with increasing age. One participant opined

“It is all about having sex and many multiple sexual partners.” FGD participant No.6 from Langas.

These are consistent with the findings of Ndejjo *et al.*, 2016 were reported barriers to screening services included cultural constraints/ beliefs about the illness, economic factors, domestic gender power relations, alternative authoritative sources of reproductive health knowledge and unfriendly health care services. In addition illiteracy, belief in not being at risk, don't care attitude to personal health, financial constraints and the fear of having a positive result have been frequently cited.

Table 7. 4: Correlation between perception of not being at risk and willingness to go for screening

		A woman cannot be at risk of cervical cancer if currently they are not promiscuous	Willing to go for cancer screening
A woman cannot be at risk of cervical cancer if currently they are not promiscuous	Pearson Correlation	1	-.128*
	Sig. (2-tailed)		.012
	N	385	385
Willing to go for cancer screening	Pearson Correlation	-.128*	1
	Sig. (2-tailed)	.012	
	N	385	399

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher (2017)

A significant correlation between perception of not being at risk of cervical cancer if currently they are not promiscuous and willingness to go for cervical cancer screening was observed at 0.05 level (2-tailed) as shown in Table 7.4. The interpretation of this finding is that women who believe to be faithful in relationships may perceive themselves not to be at risk and may not see the necessity of going for cervical cancer screening. The perception of not being at risk thus can act as a barrier

to the reception of the cervical cancer control services. Thus efforts to promote cervical cancer screening uptake among women should focus more on informing women of their susceptibility to cervical cancer and encouraging a belief that active and regular screening can detect cervical cancer at the pre-cancerous stage, hence enabling the early treatment and prevention of cancer. Women should be encouraged to take responsibility for their own health and be active participants in the screening programme.

Anantharaman *et al.*, 2013 found out that the most common reasons for perceiving not being at risk included: no symptoms (28.9%), no risk factors (20%), hysterectomy done (8.9%), being a sexually transmitted infection and hence not being at risk (6.7%), maintaining good personal and sexual hygiene (4.4%) and having a single partner (0.9%).

Similarly, a significant correlation was established between the perception of being well (to mean no signs and symptoms of cervical cancer) and willingness to go for cervical cancer control services as shown in Table 7.5. Women who perceived they were well because of not exhibiting any signs and symptoms of cervical cancer were reluctant to seeking cervical cancer control interventions.

The anticipated women who believe that once healthy, there is no need for the test, and that the test might be painful, were two major barriers identified in the study by Almobara *et al.*, 2016 which represents 36.3%, 24.4% respectively. Feeling shy may be due to cultural influence and presumably has its basis in the women's experiences and in some other general attitudes. This finding correlates with those of the present study.

Table 7. 5: Correlation between the perception that healthy women do not need screening and willingness to go for screening

		Willing to go for cancer screening	A woman does not need to go for cervical cancer control if they are ‘not ill’
Willing to go for cancer screening	Pearson Correlation	1	-.239**
	Sig. (2-tailed)		.000
	N	399	386
A woman does not need to go for cervical cancer control if they are ‘not ill’	Pearson Correlation	-.239**	1
	Sig. (2-tailed)	.000	
	N	386	386

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Bansel *et al.*, 2015 reported similar results where lack of awareness of screening test and absence of symptoms were the most common reasons for not undergoing screening.

Ndejjo *et al.*, 2016 reported concordant results where, among respondents who had not been screened, most 553 (64.5%) stated personal perception related reasons (having no signs and symptoms of the disease, not being at risk, lack of time and fear of test outcome. Others said they were not aware of cervical cancer screening services 416(48.5%) while the rest 142 (16.6%) stated health facility related challenges (distance, costs and long waiting times at health facilities).

Pain and fear of positive results have been cited as the main barriers of uptake of cervical cancer control services. A correlation was shown between the perception

that cervical cancer screening is a very painful and an unbearable procedure and willingness to go for cervical cancer screening as shown in Table 7.6.

Table 7. 6: Correlation between the perception that cervical cancer is a painful procedure and willingness to go for screening

		Willing to go for cancer screening	Cervical cancer screening is a painful procedure
Willing to go for cancer screening	Pearson Correlation	1	-.131**
	Sig. (2-tailed)		.010
	N	399	386
Cervical cancer screening is a painful and an unbearable procedure	Pearson Correlation	-.131**	1
	Sig. (2-tailed)	.010	
	N	386	386

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2017)

Women who were ashamed of cervical cancer discussion with the perception that it is a very private issue affecting the most private part of a woman's body were less likely to seek cervical cancer control interventions. The perception that Cervical cancer is a very private issue affecting the most private part of a woman's body and should not be discussed was found to have a significant correlation with the willingness to go for cervical cancer screening as shown in Table 7.7.

Table 7. 7: Correlation between cervical cancer being a private issue and willingness to go for screening

		Cervical cancer is a private issue affecting the most private part of a woman’s body and should not be discussed	Had cervical cancer before
Cervical cancer is a private issue affecting the most private part of a woman’s body and should not be discussed	Pearson Correlation	1	.101*
	Sig. (2-tailed)		.047
	N	389	385
Had cervical cancer before	Pearson Correlation	.101*	1
	Sig. (2-tailed)	.047	
	N	385	395

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher (2017)

There was no significant correlation between the perception of being stigmatized and willingness to go for cervical cancer screening as indicated in Table 7.8. The perception that people may not want to associate with you if they discovered you had cervical cancer was not associated with the willingness to go for cervical cancer screening.

Table 7. 8: Correlation between the perception of being stigmatized and willingness to go for screening

		People will not want to associate with you if they discover you have cervical cancer	Willing to go for cancer screening
People will not want to associate with you if they discover you have cervical cancer	Pearson Correlation	1	-.038
	Sig. (2-tailed)		.459
	N	389	389
Willing to go for cancer screening	Pearson Correlation	-.038	1
	Sig. (2-tailed)	.459	
	N	389	399

Source: Researcher (2017)

Many other studies have also reported embarrassment when seen seeking care for cervical cancer, stigma, and lowered self-esteem when one receives a negative result (International Agency for Research on Cancer, 2005; Kitchener *et al.*, 2006).

Studies that explored culture show that cultural gender roles and behaviors of women, may also affect the uptake of cervical cancer screening (Engender Health, 2002; Katahoire *et al.*, 2008; Markovic *et al.*, 2005; Cox, 2010 as cited in Chan *et al.*, 2016). For example, an exploratory study that was conducted in Uganda revealed that cervical cancer being a condition affecting women's sexual and reproductive health was likely to be shrouded in silence since these are issues that are socially and culturally perceived to be private and cannot be openly discussed in public (Ichaminy, 2015). Therefore, women found difficulty in accessing information even when they experienced cervical cancer like symptoms.

Further, regardless of many participants being aware of screening for cervical cancer, only a few had actually been screened. This was attributed to the lack of knowledge about the benefits of screening, fear of the procedure and the belief that it is better to be ignorant of a diagnosis of cancer if one has no symptoms of the disease as screening with resultant diagnosis of cancer can make one ‘die early’ as confirmed by the FGD participants. One of the FGD participants said this;

“It is better not to discover that you are suffering from such a deadly disease ‘Cervical cancer’ because this can send you to the grave early. Again once people know that you have it, they will start talking about you and discriminate against you. Some will even think about you and your spouse being promiscuous because of the association between cervical cancer and HPV, a sexually transmitted infection” FGD participant No. 7 from Meibeki/Karuna.

Other studies have reported a myriad of factors that hinder the uptake of cervical cancer screening services including: respondents never knew existence of such service in the local health facilities, having no time since they are always committed at work, business place or household duties, lack of funds to pay for services, especially those that depend on their husbands, distance to the facilities, fear of the diagnostic outcome and fear of the medical procedures (Morris, 2016).

Several studies in UK and South Asia show that cultural beliefs and perceptions influence uptake of cervical cancer screening (Scanlink, cited in Nicky, 2005; Cox, 2010). These studies revealed that black minority ethnic groups in United Kingdom and South Asian women consider cervical cancer as being caused by promiscuity; therefore it is considered a taboo, or a just punishment from God. As a result of these beliefs, a big proportion of women shy away from screening because they do not want to be associated with such a disease that is considered a curse from God (Nicky, 2005; Cox, 2010).



Plate 7. 1: FGD participants during an FGD session

Source: Researcher (2017)

Some participants (Plate 7.1) further explained that they had failed to go through screening in the past when they realized the service was to be provided by a male health care provider as illustrated by one elderly participant.

“Exposing myself to my sons (to mean male health care providers the age of her sons) is a taboo and an abomination.” FGD participant No. 8 from Meibeki/Karuna.

Participants expressed a lack of confidence in the health care system and opined that they could be infected with other diseases either from the screening equipment or from other sources or procedures within the health care facility.

Most participants required their husband's permission before being screened. Some felt that they needed to let their husbands know before attending screening clinics because of financial reasons, the husbands provided the funds needed. One participant noted that it would be important to inform her husband because this would make disclosure and discussion of abnormal results, if found during screening, easier.

The KIIs reported that cervical cancer screening and awareness was still low and that reception level was high among women in urban areas as compared to those in rural areas.

Similar findings were reported by Kivistik *et al.*, 2011 were the most common reason for non-participation was a recent health control at a gynecologist (42.3%), long waiting list for appointment (12.9%), long distances to the clinic (12.7%) and unsuitable reception time (11.8%). However contrary to the current findings, Kivistik *et al.*, (2011) found out that the fear to give a pap-smear was higher among 30-35 year old women than in 50-55 year old women (Kivistik *et al.*, 2011).

Globally, cultural beliefs, myths and stigmas about cancers are ubiquitous. Cultural beliefs have reduced Pap smear uptake and hampered health-seeking for cervical cancer and require culture-tailored interventions to reduce or eliminate them (Daher, 2012); Shulmeister & Lifsey, 1999); and Fang *et al.*, 2012 as cited in Mwaka *et al.*, 2015). Fang *et al.*, 2012 asserts that Government programme managers and agencies in LMICs need to develop and adopt culturally sensitive approaches to dispel potentially harmful beliefs about cervical cancer. Furthermore, medical schools and other health training institutions need to develop and incorporate cultural competence

courses into existing curricula so that health-care professionals are capable of providing culturally competent care to their patients.

Additionally, a UK based study reported that women had fear of receiving abnormal screening results because of anxiety associated with such results (Fylan, cited in Nakalevu, 2009). The women claimed that abnormal results would have severe effect on day to day functioning leading to depressed mood, decreased libido and feeling of less attractive, tarnished, defiled or contaminated and dirty feelings.

The KII from Moiben and Kapsaret Sub-Counties explained that there are several barriers to cervical cancer screening that include; low level of awareness and knowledge of risk factors and early signs and symptoms of disease, prevention services, stigma and misconception about female cancer and gynecological disease and socio-economic limitations.

CHAPTER EIGHT

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter contains summary of the findings from the study, the conclusions drawn from the study with the recommendations and the suggestions for further study.

8.1 Summary of findings

The study sought to explore the knowledge, attitudes and socio-cultural practices that influence the control of cervical cancer among women in Uasin Gishu County. It specifically looked into the knowledge on hazards and risks of cervical cancer, the reception levels of cervical cancer control services, the attitudes and practices associated with cervical cancer control and barriers to utilization of the existing cervical cancer control interventions.

Random sampling was employed to select households for the study and snow ball sampling was used to identify women from various ethnic groups to form the FGD respondents. Questionnaires were used to collect data from one participant from each of the households, Interview schedules were used to collect data from the staff in the cervical cancer screening facilities and FGD guide was used for the focus group discussion with women of various backgrounds.

Quantitative data obtained was analysed using binary regression and correlation analysis while qualitative data was arranged into themes and some respondents were quoted verbatim.

8.1.1 Knowledge on the hazards and risks of cervical cancer

Majority of the participants were from the Kalenjin community and most of them were married with majority being in monogamous marriages. The mean age at first sexual activity was 22.4 (SD 3.3) with the youngest being 18 years and oldest being 35 years. The average number of pregnancy frequencies was 3 (1, 9) and the average number of living children was 3 (0, 9). Majority of the participants had attained tertiary level of education and in employment respectively.

Majority of the participants had heard about cervical cancer with the main source of information being from the media while the church contributed the least. The focus group respondents reported similar findings were most participants had heard about cervical cancer and the most common means of hearing about it was through the mass media and at health talks from health care workers in hospitals. There was a significant relationship between employment status ($P < 0.0001$) and education levels ($P = 0.03$) with having heard of cervical cancer. Ethnicity ($P = 0.873$) and marital status ($P = 0.88$) on the other hand did not have any significance relationship with having heard of cervical cancer.

Regarding the cause of cervical cancer, majority of the participants did not know the cause, although majority of them were able to identify how cervical cancer is transmitted. Most participants believed that having multiple sexual partners would increase the risk of having cervical cancer. They indicated that women were always disadvantaged when it came to having a say about sex. They opined that men were the ones determining when, how and with whom they wanted to have it. Certain retrogressive socio-cultural practices such as wife inheritance and indiscriminate sexual activities during certain ceremonies such as funerals were identified to

aggravate the disease in certain communities. Education level was shown to have a significant relationship with the knowledge on the ways of cervical cancer transmission ($p < 0.0001$). Employment status though not significant was close to significance at ($p = 0.09$).

Majority of the participants 40.5% ($n = 162$) identified vaginal bleeding as the common sign and symptom of cervical cancer. 27% ($n = 108$) reported abdominal pain while 25.5% ($n = 102$) reported smelly vaginal discharge. Although most participants in the FGDs did not demonstrate a good understanding of the part of the body affected by cervical cancer, they were able to mention some of the symptoms of cervical cancer. Abnormal vaginal bleeding was recognized as a symptom of cervical cancer by the majority of the participants. Some participants further characterized this to be bleeding during sexual intercourse (post-coital bleeding), prolonged menstrual periods or abnormal menstrual cycles. Other symptoms that were mentioned included abnormal growth from the vagina, offensive vaginal discharge, abnormal pain and back pain.

Concerning the qualification for screening, majority reported that anyone who had ever had sexual contact qualified to be screened for cervical cancer and majority were willing to go for cervical cancer screening if they were well. Majority of the respondents in the focus group discussion had knowledge of the use of screening as a means of preventing cervical cancer though most of them had not utilized the service. Some participants believed that screening could be used to prevent cervical cancer while others felt that it could only be used for early detection.

Majority of the participants, 95.8% ($n = 341$) thought it is helpful to detect cervical cancer early and 74.5% ($n = 269$) had someone recommend to them that they should

get tested or screened for cervical cancer. There was a highly significant relationship between education levels and having someone recommend cervical cancer screening test at ($P=<0.0001$). There was a positive correlation which had statistical significance at 0.01 level (2-tailed) between having heard of cervical cancer and whether it was helpful to detect cervical cancer early. There was however, no correlation between education levels and marital status with whether it was helpful to detect cervical cancer early. There was a high significance between education levels and employment status versus knowledge on who qualifies to be screened for cervical cancer ($P=<0.0001$). More educated women and those that that are employed were more likely to know the qualifications for cervical cancer screening.

Most women 83.7% ($n=304$) were willing to go for cervical cancer screening if they were well and 26.3% ($n=95$) believed that cervical cancer was incurable. Majority of participants, 62.1% ($n=223$) had heard of ways to prevent cervical cancer. Majority of the discussants in the focus group discussion had knowledge of the use of screening as a means of preventing cervical cancer though most of them had not utilized the service. Some participants believed that screening could be used to prevent cervical cancer while others felt that it could only be used for early detection.

8.1.2 Reception to cervical cancer control services

Concerning the preventive measures for cervical cancer, Pap smear and vaccination were the most known by the participants. The FGD participants identified treatment options for cervical cancer to include early detection, screening, chemotherapy, exercise, spirituality and herbal medicine. Education levels were shown to be highly significant as far as knowledge on cervical cancer preventive measures are concerned at ($p=<0.0001$). Marital status was also associated with higher knowledge on the

cervical cancer preventive measures at ($p < 0.0001$). Married women were more likely to be aware of the cervical cancer preventive measures as compared to the single, the divorced, widowed or separated. Employment status was shown to have a high significance with knowledge on cervical cancer prevention measures at ($p < 0.0001$).

Some of the respondents in the FGD had no faith in the use of hysterectomy which they refer to as 'the use of the knife' to treat cervical cancer or any other type of cancer. They argued that many people who had gone to hospital to have their cancers removed by the use of the knife 'surgery' had ended up not coming home 'dead'. They believed that the best way to treat cancer is by using traditional herbal medicine which they said had worked for some.

A high significant correlation was observed at 0.01 level (2-tailed) between the knowledge on the cervical cancer preventive measures and the practice of cervical cancer screening. Women who were more conversant with the cervical cancer preventive measures were more receptive to the cervical cancer control interventions as compared to those who were unaware of the preventive measures. There was also a significant correlation between respondents who knew people who had suffered cervical cancer and reception to cervical cancer control services at 0.01 level (2-tailed)

Concerning screening, majority of the participants had not been screened. Most of those who had undergone cervical cancer screening had the procedure explained by the staff in a language that is understandable and understood what was expected of them before and after screening. The multiple logistic regression indicated that marital status was a significant factor influencing cervical cancer control at ($p < 0.05$).

The married were almost 3 times more likely to have been screened compared to others (Divorced, separated and widowed) OR; 95% CI: 2.645(1.261-5.548). The singles were almost 2 times more likely to have been screened compared to others (Divorced, separated and widowed) OR; 95% CI: 1.959(0.784-4.890).

The study established that there was a high correlation between ethnicity and practice of cervical cancer control. This can be interpreted to mean that people's behavior, attitude and beliefs are socially learnt and passed on from generation to generation. Different communities and ethnic groups will thus have different attitudes and perceptions towards cervical cancer and its control interventions.

There was a significant correlation at 0.01 level (2-tailed) between having heard of cervical cancer and practice of cervical cancer screening. Awareness and education have been shown to improve the health seeking behavior of individuals as it relates to uptake of cervical cancer services including testing. With awareness, one is likely to know the benefits of the test and thus opt for it. Awareness about cervical cancer is thus playing a critical role in influencing reception towards the cervical cancer control interventions.

There was a high significant correlation at 0.01 level (2-tailed) ($P = <0.0001$) between having being recommended to get tested and willingness to go for cervical cancer screening. This underscores the importance of social influence in promoting cervical cancer screening. Social influence is a process where people directly or indirectly influence thoughts, feelings and action of others. Information about cervical cancer should also be targeted to social groups in the community such as women and youth groups to encourage increased utilization of screening services. The study findings

revealed a high significant correlation between employment status and practice of cervical cancer screening.

Age of sexual activity was shown to have significance on cervical cancer screening practice at 0.05 level (2-tailed). This can be explained by the fact that since majority of the women 73% (n=229) identified sexual contact as the main route of cervical cancer transmission those who may have had sexual contact felt more at risk of cervical cancer and this could have compelled them to be receptive to cervical cancer control services.

Only 22.2% (n=84) had heard about HPV vaccine of which 25% (n=21) had been vaccinated with the HPV vaccine. Majority of sampled women 89.3% (n=75) reported that if they had a daughter, they would consider vaccinating them with HPV vaccine. This is an indication that more efforts need to be put in educating women on HPV vaccination and its important role in cervical cancer prevention.

8.1.3 Attitudes and practices associated with cervical cancer

Most women agreed that cervical cancer was talked about freely in their community 60.8% (n=214) and 82.9% (n=296) agreed that the girl child was given equal chance as the boy child in their communities. They also agreed that any procedure to detect or treat cervical cancer that involved the use of the knife was deadly and unsuccessful 70.2% (n=250) and that women were allowed to make major decisions concerning their health 82% (n=288).

However, majority disagreed that young girls were married off early in their communities to acquire wealth through dowry 92.1% (n=328). Most participants disagreed that women were allowed to inherit land and other productive assets 76.4%

(n=269) and also disagreed that cultural rituals such as FGM would influence a woman's decision to get screened for cervical cancer 89.5% (n=314) among others.

There was a significant correlation at 0.01 level (2-tailed) between cervical cancer being discussed freely and willingness to go for cervical cancer screening. This can be interpreted to mean that amongst communities or ethnic groups where cervical cancer and sexual issues are discussed freely, willingness to go for the screening is heightened. This is attributed to the awareness that one is exposed to during these discussions.

Only 28.9% (n=101) women reported that sexual issues are discussed freely in their community and 16.2% (n=57) reported that a woman cannot be at risk of cervical cancer if currently she is not promiscuous. Further, 15.7% (n=55) reported that a woman does not need to go for cervical cancer control if she is not ill and 21.4% (n=75) reported that cervical cancer procedure is a very painful and unbearable procedure.

A positive correlation was established at 0.01 level (2-tailed) between the girl child being given equal chances as the boy child and willingness to go for cervical cancer screening. Communities who valued both the male and female genders were also more likely to be responsive to cervical cancer control services. Again, when the girl child is given equal opportunities and treatment as the boy child, she becomes empowered and can make informed choices concerning her health.

The findings established that there was a high correlation at 0.01 level (2-tailed) between women being allowed to make major decisions concerning their health and having had cervical cancer screening. This can be interpreted that women

empowerment is key in decision making and subsequently reception of cervical cancer control services. When women are empowered they can make informed choices concerning their health including seeking cervical cancer screening services, they can negotiate for safe sex thus avoiding the consequences of acquiring Human Papilloma Virus (HPV), they can negotiate for abstinence from sex during treatment for precancerous lesions and above all be able to pay for any cervical cancer services that they may require.

The Pearson correlation extracted to show the correlation between the misconceptions that any procedure to detect or treat cervical cancer that involves the use of the 'knife' (in referring to surgery) is deadly and unsuccessful and the willingness to go for cervical cancer screening showed a high significance at 0.01 level (2-tailed). This can be interpreted to mean that respondents who had the misconception that any procedure to detect or treat cervical that involved the use of the knife is deadly and unsuccessful were less likely to seek cervical cancer control services.

8.1.4 Barriers to utilization of cervical cancer control interventions

For those who went for cervical cancer screening, 96.1% (n=123) were explained the procedure by the staff in a language that was understandable to them and 89% (n=113) understood what was expected of them before and after screening. Only 85.8% (n=109) were given enough time to prepare for the procedure and 96.8% (n=121) had their privacy adequately maintained during the procedure. Only 4.9% (n=6) rated the overall experience at the cancer facility as excellent.

The FGD participants confirmed these findings by reporting that the overall experience was not good at the cervical cancer facilities. They described some of the

things that caused them discomfort including; male health practitioners having to examine them down there, Nurses describing how they looked down there, rebuke from the health practitioners on why they turned up late at the health facility when their disease was advance among others.

Majority of the women who were screened were normal 85.4% (n=105) but still 8.1% (n=10) didn't know their screening outcome. For those with abnormal outcome 6.5% (n=8) reported to have been asked to come back another day. Majority 94.8% (n=379) said that their spouse could agree to have them and even finance their going for cervical cancer control. This is an indication that spouse approval and financial support is critical in the fight against cervical cancer menace.

Majority of the women 94.5% (n=328) trusted the conventional methods of cervical cancer control. For the 4% (n=14) that did not trust, 71.4% (n=10) reported the fear of getting other infections in the process. This was confirmed by the Pearson correlation which showed a high significance of 0.01 level (2-tailed). The interpretation of this finding is that the respondents that trusted the conventional methods of cervical cancer control were more likely to go for cervical cancer screening.

Majority of the respondents (n=218) agreed that training female midwives will increase the number of women seeking services and elimination of male practitioners performing cervical cancer screening was reported to increase reception of cervical control services among women as indicated by 46.8% (n=159) though 49.7% (n=169) of the participants objected.

A significant correlation was observed at 0.05 level (2-tailed) between having female midwives do the cervical cancer screening and willingness to go for cervical cancer

screening by the respondents. The interpretation of this finding is that the gender of the health care provider in the cervical cancer screening and treatment plays a key role in the health seeking behavior of women.

Only 32.3% (n=129) agreed that incorporation of traditional herbal medicine into cervical cancer control services will improve its uptake among women. The Pearson correlation showed a significant correlation between incorporation of traditional herbal medicine into cervical cancer control services and willingness to go for cervical cancer control services at 0.05 level (2-tailed).

Majority 84.5% (n=338) of the respondents reported that cervical cancer is not a private issue affecting the most private part of a woman's body and should not be discussed while 88.1% (n=312) disagreed that people will not want to associate with one if they discovered that she had cervical cancer. Majority of the participants 80% (n=280) reported that a positive diagnosis of cervical cancer is not deadly and that it is not better if someone remains unaware of her condition.

A significant correlation between perception of not being at risk of cervical cancer if currently they are not promiscuous and willingness to go for cervical cancer screening was observed at 0.05 level (2-tailed). The interpretation of this finding is that women who believe to be faithful in relationships may perceive themselves not to be at risk and may not see the necessity of going for cervical cancer screening. The perception of not being at risk thus can act as a barrier to the reception of the cervical cancer control services.

Similarly, a significant correlation was established between the perception of being well (to mean no signs and symptoms of cervical cancer) and willingness to go for cervical cancer control services. Women who perceived they were well because of

not exhibiting any signs and symptoms of cervical cancer were reluctant to seeking cervical cancer control interventions.

Pain and fear of positive results have been cited as the main barriers of uptake of cervical cancer control services. A correlation was shown between the perception that cervical cancer is a very painful and an unbearable procedure and willingness to go for cervical cancer screening.

The perception that cervical cancer is a very private issue affecting the most private part of a woman's body and should not be discussed was found to have a significant correlation with the willingness to go for cervical cancer screening. Women who were ashamed of cervical cancer discussion with the perception that it is a very private issue affecting the most private part of a woman's body were less likely to seek cervical cancer control interventions.

The perception that people may not want to associate with you if they discovered you had cervical cancer was not associated with the willingness to go for cervical cancer screening.

Although most participants believed that they have some personal risk of developing cervical cancer, several expressed unwillingness to be screened. Some of the barriers to screening that participants described included; modesty concerns, gender of health care providers, fear of status disclosure, fear of contracting other illnesses in the hospital, discomfort during the screening process, lack of awareness of screening programs, denial of disease condition, discrimination and requiring husband's permission before screening. These barriers varied by socio-cultural backgrounds and geographical regions.

8.2 Conclusions

Knowledge, attitude and practice of the community about any disease including cervical cancer offer crucial opportunity for comprehensive prevention and control strategies of the disease. Therefore, this study addressed knowledge, attitude and practice as an entry point for the prevention and control of cervical cancer and its associated factors among women of various social backgrounds in Uasin Gishu County.

Majority of the participants had heard about cervical cancer with the main source of information being from the media while the church contributed the least. In this regard, health education interventions in promoting cervical cancer screening uptake and early help seeking could be channeled through the media.

There was generally adequate knowledge on the common signs and symptoms of cervical cancer and majority reported that anyone who had ever had sexual contact qualified to be screened for cervical cancer among the participants. Majority of the participants were willing to go for cervical cancer screening if they were well and a few of the participants believed that cervical cancer was incurable. However, there was limited awareness about the main causative agent of cervical cancer although majority of them were able to identify how cervical cancer is transmitted.

Majority of the participants thought it is helpful to detect cervical cancer early and had someone recommend to them that they should get tested or screened for cervical cancer. There was a highly significant relationship between education levels and having someone recommend cervical cancer screening test at ($P < 0.0001$). There was a high significance between education levels and employment status versus knowledge on who qualifies to be screened for cervical cancer ($P < 0.0001$).

However, there was no correlation between education levels and marital status with whether it was helpful to detect cervical cancer early.

Concerning the preventive measures for cervical cancer, Pap smear and vaccination were the most known by the participants. Education levels were shown to be highly significant with cervical cancer preventive measures at ($p < 0.0001$). Marital status was also associated with higher knowledge on the cervical cancer preventive measures at ($p < 0.0001$). Married women were more likely to be aware of the cervical cancer preventive measures as compared to the single, the divorced, widowed or separated. Employment status was shown to have a high significance with knowledge on cervical cancer prevention measures at ($p < 0.0001$).

Concerning screening, majority of the participants had not been screened. Only a few had been screened in the past. Most of those who had undergone cervical cancer screening had the procedure explained by the staff in a language that is understandable and understood what was expected of them before and after screening. A high significant correlation was observed at 0.01 level (2-tailed) between the knowledge on the cervical cancer preventive measures and the practice of cervical cancer screening. The married were almost 3 times more likely to have been screened compared to others (Divorced, separated and widowed) OR; 95% CI: 2.645(1.261-5.548). The singles were almost 2 times more likely to have been screened compared to others (Divorced, separated and widowed) OR; 95% CI: 1.959(0.784-4.890).

The study established that there was a high correlation between age of sexual activity, employment status, ethnicity, having heard of cervical cancer, knowing

people who had suffered cervical cancer and having being recommended to get tested with practice of cervical cancer control.

A few participants had heard about HPV vaccine and a handful had been vaccinated with the HPV vaccine. A few would consider vaccinating their daughters with HPV vaccine. However, there was limited awareness about HPV vaccination of young girls as a preventive measure which may have been due to inadequate health messages about prevention or because vaccination against HPV is not widely available in the region.

Most women agreed that cervical cancer was talked about freely in their community; that the girl child was given equal chance as the boy child in their communities; that any procedure to detect or treat cervical cancer that involved the use of the knife was deadly and unsuccessful and that women were allowed to make major decisions concerning their health.

However, majority disagreed that young girls were married off early in their communities to acquire wealth through dowry; that women were allowed to inherit land and other productive assets and that cultural rituals such as FGM would influence a woman's decision to get screened for cervical cancer among others.

Though the participants reported sexual issues being discussed freely in their community, some still had misconceptions that a woman cannot be at risk of cervical cancer if currently she is not promiscuous; that a woman does not need to go for cervical cancer control if she is not ill and that cervical cancer procedure is a very painful and unbearable procedure. These misconceptions have the potential to make

awareness campaigns on prevention less effective, and divert help-seeking away from biomedical facilities.

There was a significant correlation between cervical cancer being discussed freely; the girl child being given equal chances as the boy child; between women being allowed to make major decisions concerning their health and the misconception that any procedure to detect or treat cervical cancer that involves the use of the 'knife' (in referring to surgery) is deadly and unsuccessful with willingness to go for cervical cancer screening.

Awareness creation, free service provision, availing services in all the health centers and early detection were highlighted as important in encouraging women to seek cervical cancer control services.

Majority of the participants who had undergone cervical cancer screening were explained the procedure by the staff in a language that was understandable to them and understood what was expected of them before and after screening. The participants reported being given enough time to prepare for the procedure and had their privacy adequately maintained during the procedure. However a dismal number of participants rated the overall experience at the cancer facility as excellent.

Majority of the participants who had been screened were normal with a few still not aware of their screening outcome. For those with abnormal outcome, a few reported to have been asked to come back another day. Majority of the participants trusted the conventional methods of cervical cancer control and for the few that did not trust, the fear of getting other infections in the process was the main reason.

Majority of the participants opined that training female will increase the number of women seeking services and elimination of male practitioners performing cervical cancer screening was reported to increase reception of cervical control services among.

A significant correlation was observed between having female do the cervical cancer screening; incorporation of traditional herbal medicine into cervical cancer control services; perception of not being at risk of cervical cancer if currently they are not promiscuous; perception of being well (to mean no signs and symptoms of cervical cancer); the perception that cervical cancer is a very painful and an unbearable procedure; perception that cervical cancer is a very private issue affecting the most private part of a woman's body and willingness to go for cervical cancer screening by the respondents. The perception that people may not want to associate with you if they discovered you had cervical cancer was not however associated with the willingness to go for cervical cancer screening.

The overall conclusion of the study is that the adequate knowledge and awareness exhibited by the participants did not translate into positive practice of cervical cancer screening due to the barriers identified by the study.

8.3 Recommendations of the study

Based on the study findings and in order to inform achievable policy and program interventions aiming to improve uptake of cervical cancer control interventions among this population, the following recommendations have been formulated.

1. Increase information outlets to raise awareness and improve knowledge about cervical cancer and the screening test specifying the causative agent of cervical cancer, the risk factors and transmission, signs and symptoms and methods of prevention and benefits of early screening.
2. Studies to explore the disparity between high awareness and low uptake should be conducted. A multi-sectoral approach that brings all stakeholders on board should work with the schools, churches, institutions of higher learning and the community itself with the aim of increasing the uptake of screening.
3. Provide education to cervical screening service providers in order to increase their cultural competence, including awareness and understanding of the influence of culture and religion on the cervical screening practices of women.
4. Develop culturally sensitive cervical screening programs that honour the cultural norms of these women for instance giving participants the right to choose the gender of their screening service provider.

8.4 Suggestions for further study

The study suggests further studies to be carried out in the following areas

- i) More studies to be done regarding cervical cancer screening and other facility related factors, for instance the role played by health care providers in influencing uptake of cervical cancer control interventions.
- ii) The findings from the study illustrate clearly the important role that male partner/ spouse plays in influencing the decision to go for cervical cancer screening. More

studies should thus be carried out to explore the role of men and ways in which men can be used as campaign agents of cervical cancer control interventions.

- iii) Studies should be done to establish the reasons behind the reluctant attitude to utilize cervical cancer control interventions among women regardless of the adequate awareness towards the same.

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LIST OF APPENDIXES

APPENDIX 1

PARTICIPANT INFORMED CONSENT FORM

KNOWLEDGE, ATTITUDES AND SOCIO-CULTURAL PRACTICES THAT INFLUENCE THE CONTROL OF CERVICAL CANCER AMONG WOMEN IN UASIN GISHU COUNTY, KENYA.

Respondent Initials_____

RESEARCHER: Georgine J Kemboi

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this study. Please ask the study staff any questions about any part of the study that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

What is this research study all about?

This study will be conducted among 400 women in two sub counties in Uasin Gishu County. This study aims to understand the knowledge, attitudes and socio-cultural practices that influence the control of cervical cancer. It will also explore the reception levels of cervical cancer control strategies among women of various social backgrounds in the County. These will be obtained through asking questions about cancer screening, experiences and knowledge about cervical cancer.

The study of this nature is important, as information obtained will be used to

recommend alternatives or improvements in the present method of cervical screening service provision and promotion. Full Information about this study will be given and you will be asked to sign an informed consent to participate. Once full informed consent is obtained the researcher will then administer the questionnaire. All data obtained will be kept secured in a lockable cabinet until the analysis stage. The questionnaire administration will take approximately 10 minutes.

Why have you been invited to participate?

You are invited to participate in this study to share your experiences, knowledge and perceptions of screening for cervical cancer and cervical cancer. According to the National cancer prevention guidelines, only 3.2% of Kenya women have been screened, that is why this study will target women of your age.

What will your responsibilities be?

You are requested to give true and honest answers to all questions asked. You will not be judged for answers given but where the researcher feels he needs to correct misconceptions; he will do so after the interview.

Will you benefit from taking part in this research?

There will be no direct personal benefit linked to participation in this study, however, information obtained might be used to improve cancer screening services and health promotion in the future.

Are there any risks involved in your taking part in this research?

No major risks are envisaged through your participation in this study.

If you do not agree to take part, what alternatives do you have?

Your participation in this study is voluntary; your non-participation will not affect you negatively in any way.

Who will have access to your data?

Information collected will be treated as confidential and protected. All documents will be kept locked in a filing cabinet and data will be entered in a password protected laptop only accessible to the researcher. Once analyzed, information will be used in an academic publication or thesis, however, your identity will remain anonymous.

What will happen in the unlikely event of some form of injury occurring as a direct result of your taking part in this research study?

Since this is a descriptive study and not an intervention study, no adverse events are anticipated.

Will you be paid to take part in this study and are there any costs involved?

No, you will not be paid to take part in the study. Any expenses you will incur to participate in the study will be refunded.

Is there anything else that you should know or do?

You will receive a copy of this information and consent form for your own records. You can reach the researcher on 0720668600 in case you have any question in future. You could also direct your questions to Masinde Muliro University Institutional Ethics Review Committee on 056-31375.

Declaration by participant

By signing below, I (initials) _____ Sign _____

Date: _____ agree to take part in a research study entitled 'Knowledge, Attitudes and Socio-Cultural Practices that Influence Control of Cervical Cancer among Women in Uasin Gishu County, Kenya'.

I declare that:

I have read or had this information and consent form read to me. I have had a chance to ask questions and all my questions have been adequately answered. I understand that taking part in this study is **voluntary** and I have not been intimidated to take part.

I may choose to leave the study at any time and will not be penalized in any way.

Declaration by investigator

I _____ Sign _____ Date _____

declare that:

I explained the information in this document to (initials) _____

I encouraged her to ask questions and took adequate time to answer them.

I am satisfied that she adequately understands all aspects of the research, as discussed above.

APPENDIX 2

QUESTIONNAIRE

Knowledge, Attitudes and Practices that Influence the Control of Cervical Cancer among Women in Uasin Gishu County, Kenya.

Dear Respondent,

Cervical cancer is a common female condition throughout the world. This questionnaire is aimed at assessing your understanding, attitudes and practices that influence your decisions to utilize cervical cancer control strategies. Please be assured that all your responses will be kept strictly confidential.

This is an anonymous questionnaire which does not require your name or identity.

Participation in this study is voluntary, and a refusal to participate will not attract any sanctions. Please answer the entire questions to the best of your ability and as truthfully as possible.

By checking this box I agree that I have read the above and agree to participate in this study.

Thank you for participating.

Socio-Demographic Characteristics

1.0 Age: _____ (in years)

1.1 i) Level of education None Primary Secondary Tertiary Other.....

ii) Monthly Income: _____

1.2 Ethnicity: _____

1.3 i) Marital status: Single Married Divorced Widowed Separated
 others _____ (please specify)

1.3 ii) If married in 1.3i) above which type of marriage are you in? Monogamous
Polygamous unstable come we stay relationship

1.4 At what age did you become sexually active? _____ (in years)

1.5 How many times have you been pregnant? _____

1.6 How many living children do you have? _____

1.7 Educational status: No formal Primary Secondary Tertiary

1.8 Employment status: Student Employed Self-employed Home maker
 Retired Applicant

Knowledge and awareness of hazards and risks of Cervical Cancer

2.0 i) Have you ever heard of cervical cancer? Yes No I do not know

2.0 ii) If yes in 2.0i) above from whom Friend Family member Health worker
Media Church Market place others _____ (Please Specify)

2.1 Cervical cancer is caused by Human immunodeficiency virus (HIV) Human
Papilloma Virus (HPV) Bacteria Do not know Witchcraft An insect that
also affects trees Others _____ (Please Specify)

2.2 How is cervical cancer transmitted? Through kissing Sexual contact through
sharing of inner clothes Hereditary others _____ (Please Specify)

2.3 What are the symptoms of cervical cancer? Abdominal pain Smelly vaginal
discharge vaginal bleeding Post coital bleeding don't know

2.4 Do you know anyone with a history of cervical cancer? Yes No I do not
know

2.5 Do you think it is helpful to detect Cervical Cancer early? Yes No I do not know

2.6 Has anyone ever recommended that you should get tested or screened for cervical cancer? Yes No I do not know

2.7 Who qualifies to be screened for cervical cancer? One who already has signs and symptoms anyone who has ever had sexual contact Prostitutes Unfaithful women or those whose husbands are unfaithful

2.8 Will you be willing to go for cervical cancer screening if you are 'well'? Yes No I do not know

2.9 Cervical cancer is an incurable disease and at whatever stage it is a dead sentence. Yes No I do not know

2.10 Have you heard of ways to prevent cervical cancer? Yes No I do not know

2.11 Which preventive measures do you know for cervical cancer? (check all that apply) Visual Inspection with Acetic Acid/ Lugols Iodine (VIA/VILI) Pap smear Vaccination HPV testing Drugs others _____ (please specify)

2.12 Have you heard of the human papillomavirus (HPV) vaccine? Yes No I do not know

Reception to Cervical Cancer Control Services

3.0 i) Have you ever had cervical cancer screening in the past? Yes No I do not know

3.0 ii) If yes in 3.0 i) above, how long ago was the screening? In the last 6 months In the last 12 months In the last 2 years In the last 3 years More than 3 years I do not know

3.1 Have you heard of the HPV vaccine before? Yes No I do not know

3.2 Have you been vaccinated with the HPV vaccine? Yes No I do not know

3.3 If you have a daughter, would you consider vaccinating her with the HPV vaccine? Yes No I do not know

3.4 When you went for cervical screening (if you have),

a) Did the staff explain the procedure well in a language that is understandable to you? Yes No I do not know

b) Did you understand what was expected of you before screening and after? Yes No I do not know

c) Were you given enough time to prepare for the procedure? Yes No I do not know

d) Was your privacy during the procedure adequately maintained? Yes No I do not know

e) Were you able to get your results for the screening immediately? Yes No I do not know

f) How can you rate the overall experience you had at the cervical cancer facility when you last went? Excellent Very good Good Bad Very bad Neither good nor bad I do not know

g) What was your screening outcome on screening? Normal/Negative Abnormal/Positive I do not know

h) If abnormal in g above, were you offered treatment? Yes No Referred to another health facility Asked to come another day I declined I decided to go to a traditional healer I do not know

3.5 Could your spouse agree to have you and even finance your going for cervical cancer control? Yes No I do not know

Socio-cultural Practices and Attitudes Associated with Cervical cancer

4.0 Cervical cancer talked about freely in your community? Strongly agree Agree
Disagree Strongly Disagree

4.1 The girl child given equal chance as the boy child in your community? Strongly agree Agree
Disagree Strongly Disagree

4.2 Do you agree with the following statements?

a) Cervical cancer is a punishment from God for unfaithfulness and only unfaithful women get it? Strongly agree Agree
Disagree Strongly Disagree

b) Cervical cancer is a disease caused by witchcraft? Strongly agree Agree
Disagree Strongly Disagree

c) Any procedure to detect or treat cervical cancer that involves the use of the ‘knife’ is deadly and unsuccessful? Strongly agree Agree
Disagree Strongly Disagree

d) Cervical cancer can only be cured through witch doctor’s intervention? Strongly agree Agree
Disagree Strongly Disagree

e) Post coital bleeding (Bleeding after sexual contact) is an indication that your spouse is unfaithful? Strongly agree Agree
Disagree Strongly Disagree

f) Female Genital mutilation (FGM) reduces/curbs cervical cancer as it eliminates promiscuity? Strongly agree Agree
Disagree Strongly Disagree

g) Someone who has undergone FGM or other cultural rituals does not need to go for cervical cancer control? Strongly agree Agree
Disagree Strongly Disagree

4.3 Do cultural rituals such as FGM influence a woman’s decision to get screened for cervical cancer? Strongly agree Agree
Disagree Strongly Disagree

4.4 Are women allowed to inherit land and other productive assets in your community? Strongly agree Agree
Disagree Strongly Disagree

4.5 Are women allowed to make major decisions e.g. those concerning their health in your community? Strongly agree Agree Disagree Strongly Disagree

4.6 Are young girls married off early in your community to acquire wealth through dowry? Strongly agree Agree Disagree Strongly Disagree

4.7 Are sexual issues discussed freely in your community? Yes No I do not know

4.8 Do you believe the following statements?

a) A woman cannot be at risk of cervical cancer if currently they are not promiscuous? Yes No I do not know

b) A woman does not need to go for cervical cancer control if they are 'not ill'? Yes No I do not know

c) Cervical cancer is a very painful and an unbearable procedure? Yes No I do not know

d) Cervical cancer is a very private issue affecting the most private part of a woman's body and should not be discussed? Yes No I do not know

e) People will not want to associate with you if they discover you have cervical cancer? Yes No I do not know

f) A positive diagnosis of cervical cancer is deadly and it's better if someone remains unaware of her condition? Yes No I do not know

Barriers to Cervical Cancer Control Interventions

5.0 What can be done to reduce women's dependency on men?

5.1 What are some of the discouragements faced at the cervical cancer screening facility that would discourage you from utilizing the services?

5.2 Do you trust the conventional methods of cervical cancer control? Yes No I do not know

5.3 If no in 5.2 above, why?

5.4 Do you think training female midwives to carry out cervical cancer in dispensaries will increase the number of women seeking the services? Yes No I do not know

5.5 Will elimination of male practitioners performing cervical cancer screening increase reception of cervical control services among women? Yes No I do not know

5.6 Will the incorporation of traditional herbal medicine into cervical cancer control services improve its uptake among women? Yes No I do not know

5.7 What can be done to encourage women to seek cervical cancer control services?

APPENDIX 3

INTERVIEW SCHEDULE/ GUIDE

Interview guide with medical practitioners working at the cervical cancer clinics

1. Awareness of women of various social backgrounds to cervical cancer control (prevention, detection, treatment and palliative care).
2. Reception levels among women of varied social backgrounds to HPV vaccination.
3. Major issues/ barriers to cervical cancer control.
4. Possible ways to improve uptake of cervical cancer control strategies among women in the county.
5. Availability of the cervical cancer screening methods, the most efficient and most preferred, challenges in their utilization.
6. Presence of health promotion strategies that encourage early screening and detection of cervical cancer.
7. Effectiveness and challenges of the health promotion strategies.

APPENDIX 4

FOCUS GROUP DISCUSSION GUIDE

Focus Group Discussion Guidelines

1. Awareness on cervical cancer causes, transmission, prevention and treatment.
2. Role of traditional herbal medicine and traditional healing in cervical cancer control.
3. Reception levels to cervical cancer control (prevention-HPV vaccine, Detection-Screening, Treatment-Cryotherapy, LEEP, Chemotherapy, Radiotherapy and surgery and palliative care).
4. Attitudes and socio-cultural practices that influence cervical cancer control.
5. How best to deal with these attitudes and socio-cultural practices.
6. Possible acceptable and sustainable cervical cancer control interventions.

APPENDIX 5

RESEARCH AUTHORIZATION NACOSTI



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

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When replying please quote
Ref. No.

P.O. Box 30623-01000
ULIRA HIGHWAY
NAIROBI-KENYA

Date:

NACOSTI/P/16/66391/I1090

1st July, 2016

Georgine Jebet Kembai
Masinde Muliro University of
Science and Technology
P.O. Box 190-50100
KAKAMEGA.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Knowledge, attitudes and socio-cultural practices that influence control of cervical cancer among women in Uasin Gishu County, Kenya,”* I am pleased to inform you that you have been authorized to undertake research in Uasin Gishu County for the period ending **30th June, 2017.**

You are advised to report to the County Commissioner, the County Director of Education and the County Coordinator of Health, Uasin Gishu County before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Uasin Gishu County.

The County Director of Education
Uasin Gishu County.

National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified

APPENDIX 6

RESEARCH PERMIT NACOSTI

THIS IS TO CERTIFY THAT:
MR. SPENCER JERRY KAMBOU
of MAHARAJA WILSON UNIVERSITY OF
SCIENCE AND TECHNOLOGY, 6-10-2016
ELGOROT, has been permitted to conduct
research in Egges-Elafia, Courts

on the topic: KNOWLEDGE, ATTITUDES
AND SOCIO-CULTURAL PRACTICES THAT
AFFECT CONTROL OF CERVICAL
CANCER AMONG WOMEN IN EGES
EGES COURTS, NENYA

for the period ending:
30th June, 2017.


Applicant's
Signature

Permit No. : SAC/2016/011/0001/11888
Date of issue : 1st July 2016
Fee Received: Ksh 2000




Director General
NACOSTI
National Commission for Science,
Technology & Innovation

1. You must report to the Licensing Commission and the County Education Officer of the area before commencing your research. Failure to do this may lead to the cancellation of your permit.

2. Government officials will not be interviewed without prior approval.

3. The applicant(s) will be responsible if the form approved.

4. Excavating, digging, and collection of biological specimens are subject to further permission from the relevant Government Ministries.

5. You are required to submit a final report, including all findings and conclusions, to the Licensing Commission.

6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation at any time.


REPUBLIC OF KENYA
NACOSTI
National Commission for Science,
Technology and Innovation

**RESEARCH CLEARANCE
PERMIT**

Permit No. NACOSTI/2016/011/0001/11888

APPENDIX 6

RESEARCH AUTHORIZATION FROM THE UNIVERSITY



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

Tel: 056-31375

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Kakamega

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Kenya

Institutional Ethics Review Committee (IERC)

MMU/COR: 403009(vol. 1)

14th December, 2015

Georgine Jebet Kemboi

Registration No. CDS/H/02/12

Masinde Muliro University of Science and Technology

P. O. Box 190-50100

KAKAMEGA

Dear Jebet,

RE: Ethical Approval to Conduct Research

The IERC received your proposal titled "*Knowledge Attitudes and Socio-Cultural Practices that Influence Control of Cervical Cancer among Women in Uasin Gishu County, Kenya*" for review. Having reviewed your work, the committee has given ethical clearance for you to conduct research as proposed.

On behalf of IERC and the University Senate, my congratulations. We wish you success in your research endeavour.

Yours faithfully

Prof. F.K. Matanga

Chairman, Institutional Ethics Review Committee

Copy to:

- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)
- DVC (A & F)
- DVC (A&SA)