DETERMINANTS OF CERVICAL CANCER SCREENING UPTAKE AMONG
WOMEN OF REPRODUCTIVE AGE IN HOIMA MUNICIPALITY – HOIMA
DISTRICT

RAMATHAN NSUBUGA
2014-MPH-WKND-002

A POSTGRADUATE DISSERTATION SUBMITTED TO THE INSTITUTE OF PUBLIC
HEALTH AND MANAGEMENT IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF A MASTER OF
SCIENCE IN PUBLIC HEALTH DEGREE OF
INTERNATIONAL HEALTH SCIENCES
UNIVERSITY

NOVEMBER, 2016
DECLARATION

I Ramathan Nsubuga hereby declare that this mini thesis research titled: *Determinants of cervical cancer screening uptake among women of reproductive age in Hoima Municipality – Hoima District*, is my own work except where acknowledged in the text. No portion of this work has been submitted for any degree or any other qualification in this or any other university and all sources used have been acknowledged and adequately referenced.

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

Ramathan Nsubuga

November 2016
APPROVAL

This is to certify that this dissertation has been submitted for examination with my approval as a University Research Supervisor

Mrs Alimah Kyomuhangi

Supervisor

Signature

Date
DEDICATION

I dedicate this work to my dear late mother Rose Nakabugo who inspired me towards this amazing learning journey, you are not physically here to witness my efforts but I believe you are spiritually present, Rest in peace beloved mother
ACKNOWLEDGEMENT

First and foremost, I thank the Lord my God for the opportunity provided to me to be admitted in the program and the guidance all through to the completion of my studies.

I would like to thank my mini-thesis supervisor, Alimah Kyomuhangi, for the direction she provided through her timely advice and constructive feedback and the entire university staff for their collective effort towards this achievement; may God bless you all.

I also take this opportunity to especially thank my wife Shamirah Mutumba for the emotional and being there for me during the course of study. To my children Swagirah, Abdulfatah and Rautha thank you for understanding that it was time for Dad to read books even when you very much wanted to play with me. And lastly, thanks to Dad, Brothers and Sisters and Job Nyanyiru for your prayer and words of encouragement

Finally, I acknowledge all participants who shared their experiences and spared their time to take part in the study.
# TABLE OF CONTENT

DECLARATION .................................................................................................................. i
APPROVAL ...................................................................................................................... ii
DEDICATION ................................................................................................................... iii
ACKNOWLEDGEMENT ........................................................................................................ iv
TABLE OF CONTENT ......................................................................................................... v
LIST OF FIGURES ............................................................................................................. ix
LIST OF TABLES ................................................................................................................ x
LIST OF ACRONYMS ........................................................................................................ xii
OPERATIONAL DEFINITIONS .......................................................................................... xiv
ABSTRACT ....................................................................................................................... xv

CHAPTER ONE .................................................................................................................. 1
INTRODUCTION ................................................................................................................ 1
1.0 Introduction ................................................................................................................. 1
1.1 Background to the study ............................................................................................. 1
1.2 Statement of the problem .......................................................................................... 4
1.3 Objectives of the study ............................................................................................. 5
1.3.1 General objective .................................................................................................. 5
1.3.2 Specific objectives .............................................................................................. 5
1.4 Research questions ................................................................................................... 6
1.5 Significance of the study .......................................................................................... 6
1.6 Conceptual framework ............................................................................................. 7
CHAPTER TWO................................................................................................................................. 9
LITERATURE REVIEW ....................................................................................................................... 9
2.0 Introduction.................................................................................................................................... 9
2.1 Cervical cancer screening uptake among women of reproductive age ......................................... 9
2.2 The relationship between socio demographic characteristics and cervical cancer screening uptake among women of reproductive age .................................................................................................. 12
2.3 The knowledge related determinants of cervical cancer screening uptake among women of reproductive age ................................................................................................................................. 15
2.4 The health service determinants of cervical cancer screening uptake among women of reproductive age ................................................................................................................................. 18

CHAPTER THREE .............................................................................................................................. 21
METHODOLOGY ............................................................................................................................... 21
3.0 Introduction.................................................................................................................................... 21
3.1 Study Design.................................................................................................................................. 21
3.2 Study area...................................................................................................................................... 22
3.2 Study Population............................................................................................................................. 22
3.2.1 Eligibility criteria....................................................................................................................... 23
3.3 Sample size calculation.................................................................................................................. 23
3.4 Sampling procedures..................................................................................................................... 24
3.5 Study variables.............................................................................................................................. 25
3.6 Data collection techniques ........................................................................................................... 26
3.7 Data collection tools..................................................................................................................... 27
3.8 Quality control issues................................................................................................................... 28
3.8.1 Validity of the data collection instrument .............................................................................. 30
3.8.2 Reliability of the data collection instrument part of quality control ..................................... 30
3.9 Data analysis plan ............................................................................................................. 30
3.9 Plan for dissemination ................................................................................................. 33
3.10 Ethical issues ............................................................................................................ 33

CHAPTER FOUR .................................................................................................................. 37
RESULTS .......................................................................................................................... 37
4.0 Introduction ................................................................................................................ 37
4.1 Socio demographic profiles of the respondents ....................................................... 37
4.2 The proportion of women of the reproductive age group that have screened for cervical cancer in Hoima municipality, Hoima district ...................................................... 39
4.3 The socio demographic characteristics of women of the reproductive age group associated with cervical cancer screening uptake in Hoima municipality, Hoima district .................. 41
4.4 Knowledge about cervical cancer ............................................................................. 46
4.5 Health facility related factors .................................................................................... 52

CHAPTER FIVE .................................................................................................................. 58
DISCUSSION OF RESULTS ............................................................................................. 58
5.0 Introduction ................................................................................................................ 58
5.1 The proportion of women of the reproductive age group that have screened for cervical cancer in Hoima municipality, Hoima district ...................................................... 58
5.2 The socio demographic characteristics of women of the reproductive age group associated with cervical cancer screening uptake in Hoima municipality, Hoima district .................. 59
5.3 The level of knowledge on cervical cancer among women of reproductive age group in Hoima municipality, Hoima district ............................................................................. 62
5.4 The health service related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district .................. 64
CHAPTER SIX .................................................................................................................. 67
CONCLUSION AND RECOMMENDATIONS ................................................................ 67
6.1 Introduction ................................................................................................................. 67
6.2 Conclusion .................................................................................................................... 67
6.3 Recommendations ...................................................................................................... 68
APPENDIX I: CONSENT FORM .................................................................................... 83
APPENDIX II: QUESTIONNAIRE ................................................................................... 87
APPENDIX III: CORRESPONDENCE LETTER .............................................................. 94
LIST OF FIGURES

Figure 1: Conceptual Frame Work ........................................................................................................... 8
Figure 2: Cervical cancer screening uptake ............................................................................................... 39
Figure 3: The level of knowledge on cervical cancer among women of reproductive age group in Hoima municipality, Hoima district ........................................................................................................ 49
LIST OF TABLES

Table 1: Socio demographic profiles related to age, religion, marital status and education level
.................................................................................................................................................. 37

Table 1b: Socio demographic profiles related to parity, occupation, household size, VCT, and
residence ........................................................................................................................................ 38

Table 2a: The socio demographic characteristics of women of the reproductive age group
associated with cervical cancer screening uptake in Hoima municipality, Hoima district......... 41

Table 2b: The socio demographic characteristics of women of the reproductive age group
associated with cervical cancer screening uptake in Hoima municipality, Hoima district........ 42

Table 2c; Binary logistic regression analysis for the socio demographic characteristics of women
of the reproductive age group associated with cervical cancer screening uptake in Hoima
municipality, Hoima district .......................................................................................................... 45

Table 3a: Awareness about cervical cancer ................................................................................ 46

Table 3b: Awareness about risk factors and signs of cervical cancer................................. 48

Table 3c: The influence of knowledge about cervical cancer on cervical cancer screening uptake
among women of reproductive age group in Hoima municipality, Hoima district............. 51

Table 4: Health facility related factors in Hoima municipality .................................................. 52

Table 5a: The health facility related factors influencing the uptake of cervical cancer screening
among women of the reproductive age in Hoima municipality, Hoima district.................... 54
Table 5b: Binary logistic regression analysis for the health facility related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district ........................................................................................................... 56
## LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCP</td>
<td>Alliance for Cervical Cancer Prevention</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Symptoms</td>
</tr>
<tr>
<td>AIHW</td>
<td>Australian Institute of Health and Welfare</td>
</tr>
<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence Interval</td>
</tr>
<tr>
<td>DIV</td>
<td>Visual Inspection</td>
</tr>
<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>HPV</td>
<td>Human Papilloma Virus</td>
</tr>
<tr>
<td>GPs</td>
<td>General Practitioners</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immuno-deficiency Virus</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>KI</td>
<td>Key Informant</td>
</tr>
<tr>
<td>LEEP</td>
<td>Loop Electrosurgical Excision Procedure</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MTRH</td>
<td>Moi Teaching and Referral Hospital</td>
</tr>
<tr>
<td>OR</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>PACE</td>
<td>Program for Accessible health, Communication and Education</td>
</tr>
<tr>
<td>Pap</td>
<td>Papanicolaou</td>
</tr>
<tr>
<td>VIA</td>
<td>Visual Inspection With Acetic Acid</td>
</tr>
<tr>
<td>VILI</td>
<td>Visual Inspection With Lugol’s Iodine</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal and Child Health</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>FP</td>
<td>Family Planning</td>
</tr>
<tr>
<td>DNA</td>
<td></td>
</tr>
<tr>
<td>CCS</td>
<td>Cervical Cancer Screening</td>
</tr>
<tr>
<td>DC</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
</tbody>
</table>
OPERATIONAL DEFINITIONS

**Papanicolaou test (Pap test):** A procedure in which cells are scraped from the cervix for examination under a microscope. The cervix is the opening to the uterus. It is used to detect cancer and changes that may lead to cancer. A Pap test can also show non-cancerous conditions, such as infection or inflammation.

**Cervical Cancer:** A slowly growing cancer that begins in the cervix of a woman (CDC, 2012).

**Human Papillomavirus (HPV):** A type of sexually transmitted virus that may increase the risk for several diseases including cervical cancer (CDC, 2012).

**Screening:** is defined as a procedure used to identify specified diseases or particular conditions among asymptomatic individuals.

**Cervical screening:** For the purpose of this study cervical screening relates to early detection of pre-cancer lesions through a Papanicolau smear (Pap).

**Pap test:** A test that is done during a pelvic exam. It involves the scraping of cells from the cervix and examining them under a microscope to see whether abnormal cells are present (National Cancer Institute, n.d).

**Knowledge:** the understanding the respondents have about carcinoma of the cervix with respects to symptoms, risk factors, prevention and treatment, screening method,
ABSTRACT

Background: Among all the cancers, cervical cancer is by far the one that can be completely prevented if regular screening and treatment of its pre-cancerous lacerations is done. Therefore, cervical screening has helped to reduce cervical cancer rates dramatically through early detection of premalignant lesions. The success of screening depends on access and up-take, quality of screening tests, adequacy of follow-up, and diagnosis and treatment of lesions detected, however, uptake has been mentioned to be low in many settings.

Objective: To assess the determinants of the uptake of cervical cancer screening among women of the reproductive age group in Hoima Municipality, Hoima district.

Method: A cross sectional study design was used and this design incorporated both quantitative and qualitative data collection methods. The study population was women aged above 30 years who are residents of Hoima municipality. Simple random sampling was used to sample out two of the divisions. In each of the sampled divisions, cluster sampling was used to map out the parishes. Systematic random sampling was used to select households with the eligible respondent who was a woman aged 30 years and above. Structured interviews with close-ended probing questions were used to collect precise data from the respondents. Key informant interviews (KIs) and IDIs were carried out with purposively selected respondents using interview guides that were customized to the different categories of respondents.

A structured researcher - administered questionnaire with closed-ended questions was the instrument used to collect quantitative data. Focus group discussion and key informant guides were used to collect qualitative data from the focus group discussions. Collected data was entered into a database created using SPSS Inc 18 statistical software.

Results: Only 17.6% (66) had gone for the screening, more than three quarters of them had not by study time 80.4% (309). Four socio demographic characteristics had a significant association with cervical cancer screening uptake, they included; parity of the women with a Chi square value ($X^2$) of 9.291, and a p value of 0.026, ever going for voluntary counseling and testing with a Chi square value ($X^2$) of 9.091 and a p value of 0.003, ever using any form of contraception a Chi square value ($X^2$) of 4.533 and a p value of 0.033 and the residence of the women a Chi square value ($X^2$) of 7.394 and a p value of 0.025. Majority of the women had low knowledge about cervical cancer ($n = 278, 74.1\%$). The level of knowledge did not have a statistically significant influence on the uptake of cervical cancer screening ($X^2 = 3.370, p = 0.066$)

Almost all the health facility related factors had a significant influence; they include the presence of cervical cancer screening sites set up in the community ($X^2 = 8.018, p = 0.005$), education about cervical cancer screening by health workers ($X^2 = 9.803, p = 0.002$), ever been referred for cervical cancer screening by health workers working in the municipality ($X^2 = 10.252, p = 0.006$), the ease of getting maternal health services from the health services in the municipal ($X^2 = 6.307, p = 0.012$), provision of cervical screening services by health facilities in the municipal ($X^2 = 6.265, p = 0.012$), health workers to the community teaching about cervical cancer ($X^2 = 6.265, p = 0.012$), and waiting time for maternal health services at any of the facilities in this municipality ($X^2 = 11.979, p = 0.003$).
Conclusion: Cervical cancer screening uptake among women in Hoima municipality is very low, with only 2 out every ten women up taking the screening. This level of screening uptake is more significantly influenced by health facility related factors in the municipality.
CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study is about cervical cancer screening uptake among women in Hoima district. Screening for cervical cancer is the most preventive measure and the purpose of the screening is to detect the pre-cancerous lacerations early enough and treat them a head of possible developments of into persistent cervical cancer (Bosch et al., 2002). Among all the cancers, cervical cancer is by far the one that can be completely prevented if regular screening and treatment of its pre-cancerous lacerations is done. Several factors influencing cervical cancer screening uptake have been reported, however none of them are in the context of Hoima district.

This chapter highlights background information to the study, the statement of the problem, objectives of the study (general and specific), research questions, the significance of the study, and a conceptual framework.

1.1 Background to the study

Cervical cancer is a neoplasm that comes from cells originating in cervix and is usually malignant; it may be completely asymptomatic in early stages (Kumar, 2007). Cervical cancer is a slow-growing cancer that commenced in the cervix (CDC, 2012). The cervix is situated at the lower end of the uterus at it links the vagina to the womb. Once the cancerous cells begin to grow, the abnormal cells can gradually invade the entire body to bring about dangerous effects on health (CDC, 2012). In advanced stages, it may present as persistent pelvic pain, unexplained
weight loss, hemorrhage amid menstrual periods, unusual vaginal discharge, bleeding, and pain subsequent to intercourse (Kaku, 2008). Infection with human papillomavirus (HPV) types 16 and 18 cause 75% of cervical cancer globally (International Agency for Research on Cancer GLOBOCAN, 2012).

Cervical cancer is one of the most preventable human cancers because of its slow progression, cytological identifiable precursors, and effective treatments (Lee, 2012). Cervical cancer is potentially preventable and effective screening programs can lead to reduced morbidity and mortality (Sankaranarayanan, 2007). Therefore, the Papanicolaou (Pap) screening has been of great importance in the reduction of cervical cancer rates substantially through detection of premalignant cancer cells early enough. Cervical cancer screening is usually carried out using the Papanicolaou (Pap) test which is used to diagnose abnormal changes on the cervix (Centers for Disease Control and Prevention [CDC], 2012). The abnormal cell changes seen early enough are then treated prior to becoming cancerous. According to Nelson, Moser, Gaffey, and Waldron (2009), many women do not take advantage of the benefits of cervical cancer screening and could be more predisposed to developing cervical cancer. The success of screening depends on access and up-take, quality of screening tests, adequacy of follow-up, and diagnosis and treatment of lesions detected.

Cervical cancer is the fourth most common cancer affecting women worldwide with an estimate of 5,28,000 cases every year (International Agency for Research on Cancer GLOBOCAN, 2012). A large majority (85%) of the global burden occurs in less developed regions (International Agency for Research on Cancer GLOBOCAN, 2012). Cervical cancer is the 2nd most common cancer among Indian women aged 15-44 years with an estimate of 123,000
incident cases and 67,000 deaths in 2013 (International Agency for Research on Cancer GLOBOCAN, 2012).

Worldwide, over 85% of cervical cancer deaths every year occur in developing countries (World Health Organization, 2015). This is attributed to inadequate access to effective screening services which can lead to reduced recognition and diagnosis of the disease during its initial stages and heightened chances of it developing to advanced stages with poor prospects of treatment (World Health Organization, 2015). Indeed, over 80% of cancers in sub-Saharan Africa are detected in their late stages (Bingham, 2003). In contrast, developed countries have programs meant to enable cervical cancer screening programs to be effective so that pre-cancerous lacerations are identified and treated early enough (World Health Organization, 2003).

Uganda ranks 14th among countries with high prevalence’s of cervical cancer in the world, and in this country, more than 65% of the women diagnosed with the cervical cancer die from it (World Health Organization, 2013). Studies have shown that only a small percentage of women ranging between 6% and 27% in SSA having uptake cervical cancer screening (Sudenga, 2013; were, 2011; Gharoro, 2006). This is even lower in the East African region where cervical cancer age-standardized incidence rates are highest (Bruni, 2014). It is estimated that around 33.6% of women in Uganda have the cervical cancer causing human papilloma virus infection at any given time (World Health Organization, 2010).

The burden of cervical cancer is highest in sub-Saharan Africa (almost twice the global burden) and even higher among HIV infected women (Kahesa, 2008; Apollinaire, 2012). Cervical cancer is also more devastating among HIV infected women, thus the integration of cervical screening in routine HIV services is a worthwhile intervention (WHO, 2010). Uganda has the highest
burden of cervical cancer in the East African region, with an incidence of 22.6 % compared to the regional average of 20.1 % and 15.8 % worldwide (WHO, 2010). Cervical cancer related deaths are also highest in Uganda at 15.6 % compared to 13.8 % for East Africa and 8.2 % worldwide (WHO, 2010).

According to reports from Reproductive Health Uganda (2012), 90% of the women in Hoima district have multiple partners and that 90% of women in Hoima district have cervical cancer. The report further states the cervical cancer among these women is at different levels of development. The cervical cancer is spread by men from one woman to another through sexual intercourse. This means that women with multiple partners in Hoima district were at higher risk of contracting cervical cancer. However, there are meager studies that have assessed the uptake of cancer screening uptake among women in Hoima district.

1.2 Statement of the problem

Evidence shows that the rate of occurrence of cervical cancer among women in Hoima district (90%) almost triples the approximate national rate (33.6%). This to a great extent shows that detection of cervical cancer among women in the district is not being done early enough, and consequently points to a low uptake of cervical cancer screening. Further still, records at the referral hospital in the district reveal that up to 80% of women who seek treatment for cervical cancer at the hospital come when the cancer is in advanced stages; another indication of low screening utilization.

The Uganda Ministry of Health (MOH) policy and regulations on cervical cancer recommend that all women aged 25–49 years should seek and have cervical cancer screening done and girls between the ages of 10-14 years have to be vaccinated with the human papilloma virus (HPV)
vaccine. This vaccination and screening campaign was aimed at achieving 80% coverage by 2015 (MOH Uganda, 2010). Despite efforts by the Ministry of Health to encourage women to go for screening for cervical cancer, several only seek treatment when the disease is in its advanced stages, resulting in poor prognosis. The cervical cancer-screening program has therefore not fully achieved its objective of enabling early detection of cancer of the cervix.

There could be a number of determinants of cervical cancer screening uptake in districts like Hoima where 9 out of every ten women have been said to harbor cervical cancer at various stages. Therefore this study aimed at assessing cervical cancer screening uptake and its determinants among women of reproductive age in Hoima district.

1.3 Objectives of the study

1.3.1 General objective

To assess the determinants of the uptake of cervical cancer screening among women of the reproductive age group in Hoima Municipality, Hoima district.

1.3.2 Specific objectives

1. To determine the proportion of women of the reproductive age group that have screened for cervical cancer in Hoima municipality, Hoima district.

2. To establish the socio demographic characteristics of women of the reproductive age group associated with cervical cancer screening uptake in Hoima municipality, Hoima district.

3. To determine the level of knowledge on cervical cancer among women of reproductive age group in Hoima municipality, Hoima district.
4. To assess the health service related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district.

1.4 Research questions

1. What is the proportion of women of the reproductive age group that have screened for cervical cancer in Hoima municipality, Hoima district?
2. What are the socio-demographic characteristics of women of the reproductive age group associated with cervical cancer screening uptake in Hoima municipality, Hoima district?
3. What is the level of knowledge on cervical cancer among women of reproductive age group in Hoima municipality, Hoima district?
4. What are the health service related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district?

1.5 Significance of the study

The findings and suggestions of this study will bring forth 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.

To non-government organizations like Reproductive Health Uganda, PACE and others at large, the findings will point out the significant determinants of cervical cancer screening uptake among the women in Hoima, which will in turn enable them make focused interventions aimed at improving screening practices.

This study will be of value to physicians and other health care providers as it will identify knowledge, and other factors associated with cervical cancer screening uptake among women in
Hoima. This study will aid health educators along with healthcare providers in developing specific educational strategies to promote screening practices of the women.

The findings from the study will be useful for positive social change that will include awareness of factors that predict cervical cancer screening practices. Professionals in the field of Community Health will gain useful information to educate women and to develop interventions that will lead to and increase the utilization of cervical cancer screening services. These interventions can be useful in contributing to positive social change by reducing the morbidity, mortality, and the associated cost of cervical cancer.

1.6 Conceptual framework

The figure below shows the study variables. There are three dependent variables including socio demographic factors, knowledge factors and health facility factors and one dependent variable (uptake of cervical cancer screening). Knowledge determinants refer to what a woman knows about cervical cancer in terms of Risk factors of cervical cancer, Signs of cervical cancer, Location of Cervical cancer screening centers, Knowledge of cervical cancer vaccine, Age of starting screening, Cervical cancer test and Cervical cancer prevention methods.

Socio demographic determinants in this case refer to the general household and personal profile of the women in terms of; Age, Religion, Marital status, Education level, Parity, Occupation, Household size, VCT use, Contraceptive use, and Income.

Health facility determinants refer to the characteristic of health service delivery in the study area in terms of availability, accessibility and affordability. These characteristics specifically include; Distance to screening sites, Education about cervical cancer screening by health workers,
Referral for cervical cancer screening by health workers, Status of facility where screening can be done, and Ease of getting reproductive care.

**Figure 1: Conceptual Frame Work**

### Knowledge determinants
- Risk factors of cervical cancer
- Signs of cervical cancer
- Location of Cervical cancer screening centers
- Knowledge of cervical cancer vaccine
- Age of starting screening
- Cervical cancer test
- Cervical cancer prevention

### Socio demographic determinants
- Age
- Religion
- Marital status
- Education level
- Parity
- Occupation
- Household size
- VCT use
- Contraceptive use
- Income

### Uptake of Cervical cancer screening
- Ever been screened
- Never been screened

### Health services related factors
- Distance to screening sites
- Education about cervical cancer screening by health workers
- Referral for cervical cancer screening by health workers
- Status of facility where screening can be done
- Ease of getting reproductive care
CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

A systematic review of literature was conducted to find relevant studies and articles that examine the determinants of cervical cancer screening uptake among different population groups of women of reproductive age. Some of the databases assessed included Science Direct, Academic Search Complete, Cinahl, Medline, Proquest, and PubMed. I assessed Google scholar to find relevant articles.

The searches yielded many articles and studies from which this researcher was able to identify a number of studies that are relevant to this research. This literature review is organized into themes and subthemes. I examined literature in the following areas: The level of cervical cancer screening uptake among women of reproductive age; The relationship between socio demographic characteristics and cervical cancer screening uptake among women of reproductive age; The knowledge related determinants of cervical cancer screening uptake among women of reproductive age and The health facility determinants of cervical cancer screening uptake among women of reproductive age.

2.1 Cervical cancer screening uptake among women of reproductive age

Screening for cervical cancer is the most preventive measure and the purpose of the screening is to detect the early pre-cancerous lesions and treat them before they can develop into invasive cervical cancer (Bosch et al., 2002). Among all the cancers, cervical cancer is the only type that can be totally prevented if there is regular screening and treatment of its pre-cancerous lesions.
(MOH, 2010; Bosch et al., 2002). There are several methods available for detection of several forms of pre cancers and these include direct visual inspection (DIV) of the cervix aided by chemicals like 5 percent acetic acid and iodine (visual inspection with acetic acid [VIA] and visual inspection with Lugol’s iodine [VILI]), which cause recognizable color changes. Other screening techniques, like cytology (conventional Pap smears, liquid-based cytology) and HPV testing, and treatment of pre-cancer using cryotherapy or the loop electrosurgical excision procedure (LEEP), are helpful in reducing the burden of cervical cancer (Bosch et al., 2002; Smeltzer& Bare, 2004).

When the Papanicolau smear (Pap) test was introduced as one of the cervical cancer screening methods, the health authorities in most countries adopted this screening method in their annual screening policies. In developed countries this is mainly the role of the health care workers to maintain a national register and deliver invitation letters to women as reminders for annual smear tests when due through mail. Historically, in developing countries, however, financial support was mostly channeled to management of the cancer in its late stages contrary to early detection measures. Women were thus left at risk due to inadequate preventive care (Lovejoy, 1996).

The World Health Organization has stipulated the target of women for cervical screening to be those aged 30 and above and also recommended reducing the number of cervical cancer smears to one per woman per lifetime. In countries like South Africa, the National Department of Health proposed a total of 3 cervical cancer smears per lifetime beginning at age 30 and above and also that these are spaced at 10 year intervals. The premise behind this policy was that cervical cancer develops over time; it may take 10-20 years for a pre-cancer lesion to progress to cervical cancer. Younger women under 30 years usually present with low grade lesions that regress to normal
over time. The mean age of patients with high-grade lesions is 30 years and the time estimated for progression to invasive cancer is 10 years.

If a cervical cancer smear is sensitive enough it should be able to diagnose cervical abnormality early enough so as to facilitate preventive measures. Women with abnormal cervical smear results require referral for colposcopy and for further management (Department of Health: National Guidelines on cervical cancer, 2000).

Practice towards screening for cervical carcinoma is poor to even those with knowledge of the disease and knowledge on the importance of screening. In developed countries, a greater part took screening compared to less developed countries. A survey of 650 women aged between 15 and 78 years who were recruited randomly at 2 hospitals in London, England, about 80.5% of the women who were sampled had been tested at least 1 Pap smear and 71.5% mentioned having usual pap smears (every 3-5 years) (Garland, 2007).

Cervical cancer screening up take practices among Africans was also found to be poor as shown in a study in South Africa; in spite of knowledge of cervical screening and the availability of such services, the greater part of women (87%) from better socio economic backgrounds did not uptake cervical screening. Most patients were residing within twelve (12) kilometers from the nearest facility that provided screening services or that could possibly provide screening services (Wellensiek, 2002). In Nigeria, one study where about one hundred forty four (144) tools (structured questionnaires) were used and completed found that only 5.7% had ever sought and received a pap smear (Udigwe, 2006).

The participation rates for cervical screening in Australia are calculated as the percentage of women aged 20 to 69 years screened in a 2-year period, based on the number of women screened.
rather than the number of cytology tests performed (Australian Institute of Health and Welfare (AIHW), 2014). National participation rates for women in the targeted age group was around 59% for all 2-year periods from 2004-2005 to 2008-2009 and 57-58% between 2009-2010 and 2011-2012 (Australian Institute of Health and Welfare (AIHW), 2014). Participation rates 2012-2013 were high in inner regional and major cities with 58.7% and 57.9% respectively and the lowest were in very remote areas with 54.2%. Between 2012 and 2013, about 58.0% of women aged between 20 and 69 years participated in cervical screening (Australian Institute of Health and Welfare (AIHW), 2015).

A study done in Kenya on risks and barriers to cervical cancer screening among 219 women attending MNCH-FP clinic at the Moi teaching and referral hospital (MTRH) found that only 12.3% of the participants had ever been screened (Were et al., 2012).

2.2 The relationship between socio demographic characteristics and cervical cancer screening uptake among women of reproductive age

Ndejjo (2016) in this study showed that the place of residence was also associated with cervical cancer screening as respondents who resided in urban or semi urban areas were more likely to have been screened. However, this relationship was influenced by occupation at regression (multivariate) analysis.

Women who have high a school diploma or higher certificates may be more likely to have annual Pap testing. Jennings-Dozier and Lawrence (2000) found that Black and Hispanic women who have health insurance, are high school graduates, and have higher income were more likely to be adherent to annual Pap testing than their counterparts with lower level of literacy. The
association between education level and cervical cancer screening was also explored among Hmong Americans who have low literacy and low English proficiency (Lee & Vang, 2010).

In addition to the low literacy and low English proficiency, barriers to cancer screening among this group include access to healthcare, race of healthcare provider, health insurance, years in the United States and beliefs about the etiology of illness (Lee & Vang, 2010). Akers et al. (2007) also found a significant correlation between low health literacy and low knowledge about the disease, reduced health screening behaviors, delays in disease diagnosis, and poor health outcomes.

Lee, Nguyen and Tsui (2011) operationalized language of interview as a measure of acculturation. These researchers found that participants in their study who interviewed in an Asian language were less likely to receive cervical cancer screening than their counterparts who interviewed in English language. Foreign-born women from continental Africa may be experiencing the effect of educational status on cervical cancer screening. In the study by Sanz-Barbero et al. (2011), immigrant women from Africa had the lowest educational status when compared with their counterparts from Spain, United States, Canada, Eastern Europe, and Asia.

Age

According to the behavioral model for vulnerable population, predisposing factors such as age, education, and acculturation can predict the extent to which those identified as vulnerable use preventive health services. Previous studies have found that age was a significant determinant for receipt of screening services for cervical cancer (Lofters et al., 2011; Owosu et al., 2005). The findings from the analysis in the current study support the behavioral model for vulnerable population by revealing that age was associated with the receipt of cervical cancer screening. In
this study, Mosunmola (2013) found that women aged 31-50 years were more likely to have had the Pap smear screening than women in the age bracket of 18-30 years and women in the age bracket of 51 years and older. In the study by Owosu et al. (2005) younger women aged 18 to 44 were less likely than older women aged 45-60 to have ever been screened for Pap smear. Lofters et al. (2011) found that women in the age bracket 35-49 were more likely than women in the age bracket 18-34 and 50-66 to have been screened for cervical cancer.

However, as Aker et al. (2007) suggested, cervical cancer incidence has been found to increase with age and women over the age of 65 account for 25% of cervical cancer cases and 40% of cervical cancer deaths.

**Education level**

Lee and Vang (2010) and Akers et al. (2007) found significant correlation between literacy level and health screening behaviors. However, a study by Blackwell et al. (2008) found that while education was a predictor for cervical cancer screening in the United States, education was not statistically significant for cervical cancer screening among Canadian women.

**Marital status**

Ndlovu (2011) revealed that the odds of cervical screening were less in single women compared to married women. Studies conducted elsewhere have shown a significant difference of cervical screening and marriage, with married women more likely than single women to screen for cervical cancer (Twinn et al., 2002; Leyden et al., 2005). Wong et al., (2009) also reported that married women had a higher recognition of cervical cancer risk factors than unmarried women. With regards to marital status studies have found that single, separated or widowed women are
have lower chances of obtaining a cervical cancer screening test than married women or women living with a partner (Liao C C et al 2006). In addition, some studies have found that single women are more likely than married women to have pap screening (Cyril CD et al 2009, Singh et al 1998).

2.3 The knowledge related determinants of cervical cancer screening uptake among women of reproductive age

Various studies have been conducted globally to evaluate women’s awareness of cervical cancer and screening practices. In a qualitative study conducted in West Virginia to evaluate awareness and knowledge of cervical and breast cancer among women, it was found that women were more knowledgeable about breast cancer than cervical cancer. Some of the widespread misapprehensions were on the frequent use of menstrual materials like tampons during menstruation as the cause of cancer. Some also believed that women who had a hysterectomy performed, regardless of the indication, do not require cervical screening in the future (Lyttle&Stadelman, 2006). These misapprehensions of cervical cancer could affect the future of cervical screening services uptake negatively.

Some researchers have found that barriers to cancer screening among African women include lack of awareness of screening guidelines, lack of information on where and how to receive screening, and the diagnosis of cancer (Becker-Dreps et al., 2010; Nnodu et al., 2010). A cross-sectional study of 140 college women in Ghana by Abotchie and Shokar (2009) found that the rate of Pap screening among participants was 12%. In Kenya, while 100% of the 147 women enrolled in a study admitted to having heard of availability of screening services cervical cancer,
only 1% had ever been screened for cervical cancer and 2% were aware of the availability of screening facilities at the health center they use (Becker-Dreps et al.).

The findings by Becker-Dreps et al. (2010) were supported by Anorlu (2008) who found that less than 1% of women in four West African countries have ever been screened for cervical cancer. Barriers found to inhibit screening included the understanding that the screening would take away virginity (Abotchie&Shokar, 2009).

Agam (2015) in his study showed suboptimal level of knowledge regarding cervical cancer but favorable attitude for screening. In this study, 65.5% women had "heard" about cervical cancer. Similar results were reported by Tran et al. and Shrestha et al. in Korea and Nepal respectively (Tran, 2011; Curado, 2007). Only 11% women had adequate knowledge about carcinoma cervix and screening. The findings were similar to studies done in Cameroon by Tebeuet al. (2008) and in Ethiopia by Yifru and Asheber (2008).

The knowledge level on cervical cancer screening was found to be low by other studies in developed countries (Study done in Kuwait (Al Sairafi, 2009) –52% had good knowledge and in London (Yu, 1998) –76% had adequate knowledge). The lack of knowledge was mainly due to lack of population-based screening programs, inefficient mass media campaigns, and cultural barriers wherein women in India feel shy to discuss the diseases affecting the sexual organs, Bleeding between periods was the most frequently mentioned symptom of cervical cancer by the study respondents. This finding is similar to study done in Kerala (Aswathy, 2012) and Ahmedabad (Goyal, 2013). The most common risk factor mentioned was multiple sexual partners. James John and Robin Marie Beining have reported similar findings in his dissertation submitted to the Muhimbili University of Health and Allied Sciences, Songea in 2011 and The
University of Iowa in 2012, respectively (John, 2011; Beining, 2012). This study reported poor knowledge of cervical cancer screening similar results was shown by Shrestha et al. in Nepal (Shrestha, 2013).

Most studies conducted globally have indicated lack of knowledge and awareness in women regarding cervical smear testing and cervical cancer. This has resulted in a low uptake of screening services. In a qualitative study conducted among women aged between 21 and 56, most women had a poor knowledge of cervical cancer (Khoo and Shuib, 2009). Most of them had heard of cervical cancer previously but were not aware that it could be prevented. Only a few older, married women were aware that if cervical cancer is detected early it could be managed. The role of the Pap smear in early detection was also poorly understood.

Only less than half of women recognized the risk factors. Most surprisingly, most of these women thought the Pap smear is performed to diagnose sexually transmitted infections, and the procedure itself was not well understood (Wong et al., 2009). In a study conducted in Nigeria amongst professionals, other public servants and students, the level of awareness of cervical screening was average (52.8%), however only 7.1% had ever done a Pap smear test. The most common reasons given for not doing a Pap smear test included the lack of awareness (46%), fear of a bad result and some felt there was no need for it (Ezem, 2007).

Women who were enrolled in a study by Ndlovu (2011) were exposed to some level of education on cervical cancer screening, since this service was provided as standard of care to all Microbicide clinical trial participants. Despite this exposure, the level of knowledge was still low in this group. A greater proportion of women who had never tested cited lack of awareness as the main reason. According to Moodley (2009:11-12), the main barriers to testing in developing
countries are a lack of awareness of the disease and screening, women not availing themselves of screening services and lack of political will to provide the service

A study by Lyimo&Beran, 2012 done in Moshi Tanzania looking at the most important factors related to the uptake of screening among 354 women aged between 18 and 69 revealed that, more than half (59.6%) of the participants had a low level of knowledge of cervical cancer and its prevention. In this study only 80 (22.3%) women reported having been screened. The study also showed that those with the highest level of knowledge about cervical cancer and its prevention were more likely to be screened than those with low or medium level of knowledge (Lyimo and Beran, 2012).

In Kuwait, a study whose objective was to assess the knowledge, attitude and practice regarding cervical cancer screening found out that of the 300 married randomly selected women, only 30.6% and 23.6% had adequate attitude and practice towards the test respectively (Mona and Farida, 2009). The Kuwait study also revealed that the main reason for not having a Pap test was because it had not been suggested by the doctor.

2.4 The health service determinants of cervical cancer screening uptake among women of reproductive age

Institutional factors have also been shown by different studies to be influencing uptake of cervical cancer screening. According to International Agency for Research on cancer Organization (2003), uptake of screening is increased when the governments ensure that there is an organized screening program in place. Hakama et al. (2008), Wablinga et al. (2000) and Mutyaba et al. (2007), showed that mortality due to cervical cancer reduced drastically in developed countries which had sustained organized screening program that were equipped with
infrastructure, trained human resource, organized follow up and surveillance systems. A review of five qualitative studies that were conducted in Mexico, Peru and Ecuador showed that the main barriers to increasing uptake of cervical cancer included inaccessible and unavailability of high-quality health services, the lack of comfort and privacy in facilities, and unfriendly health workers (ACCP, 2004).

In another, the independent predictors for cervical cancer screening in a study by Ndlovu (2013) were: being recommended for screening by a health worker, knowing where cervical cancer screening services are provided and the knowledge of a person who had been screened for the cervical cancer. Similar predictors for cervical cancer screening have been reported in previous studies. Indeed, studies carried out in Uganda Cunningham, (2015), Jamaica (Lyimo, 2012) and the United States (Twinomujuni, 2015) found that women who had been recommended for screening by a health worker had higher chances of being screened for CS.

Long distances to the cervical cancer screening services reduce the likelihood of women accessing screening (Jo et al 2009). A cross-sectional, community-based survey revealed that poor transportation is an additional problem (Bener, A. et al 2001).

In Bangladesh, a study on community perceptions of cervical cancer and cervical cancer screening among 220 men, women and children found that low priority for seeking help for symptoms, limited availability of health services were among the most common barriers to screening (Ansink, et al 2008).

Women are more probable to possess behavioral changes similar to seeking Pap smear tests if they be reminded by their family members or health care providers. The effect of cues on cervical cancer screening behavior among women has been underpinned by recent preceding evidences.
Ackerson has investigated the role of cues for obtaining Pap smear test and resulted that health care providers were significant cues for studied women by giving information regarding the importance of the test (Ackerson, 2010).

In earlier research commendations by general practitioners and health care providers, written and spoken information were regarded as cues to action for cervical cancer screening uptake (Abdullahi 2009). According to his study, many women had sought cervical cancer screening as for the first time as a result of their health service provider’s advice.

The essential responsibility of nurses in enlightening women regarding health preventive care, particularly the significance of scheduled and regular cervical cancer screening was emphasized in another study by Ackerson (2010). The study established that nurses are in a position to positively influence better health seeking behavior, so they are supposed to inform women about the purpose of the Pap smear test, while assessing the woman’s personal risk factors for cervical cancer, and her beliefs and perceptions regarding Pap smears. Many studies have acknowledged positive cues to cancer screening in Hispanic women. These comprise physician referrals, lay health workers, written materials, and media. A physician suggestion is one of the most significant cues to cancer screening. Physicians play a key responsibility in notifying women of the benefits of screening (O’Malley, 2001)
CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter focuses on the research process and presents an overview of the methods that was used in the study, namely, the research design, study population, eligibility criteria, sample size calculation, sampling procedures, data collection methods and tools, the data collection process, data processing and data analysis while also discussing relevant research ethics. The purpose of this chapter is to provide information on how this study was carried out from a methodological perspective.

3.1 Study Design

A cross sectional study design was used in order to provide a complete picture and understanding of cervical cancer screening uptake and its determinants among women of reproductive age in Hoima municipality. This design was chosen because it is a design for analytical epidemiology purposes, easy and inexpensive to conduct and is useful for investigation of exposures that are fixed characteristics such as age or educational level. A researcher records the information that emerges from a specific population at the same time without manipulating the variables.

Thirdly, with this design, a large amount of data is collected at one point, making the results more readily available (Brink et al., 2012). This design is used to identify and justify problems with current practice, measures all relevant variables objectively at a specific time and makes judgments. The cross-sectional study design provides a quick assessment of the strength of the relationship between a factor and a health outcome associated with the specific factor as the
relationship exists within a specified population at a particular time. The design incorporated both quantitative and qualitative data collection methods.

3.2 Study area

Hoima district located in the Mid-Western Region of Uganda. Its main town is Hoima, located about 200 kilometers from Kampala (the Capital city of Uganda). The district borders the districts of Kibaale to the south, Kiboga to the east, Masindi to the north and Lake Albert and the Democratic Republic of Congo to the west. The district is divided into two counties of Bugahya and Buhaguzi and they are sub divided into 11 sub counties, 2 Town Councils, 52 Parishes, 325 Villages and about 50,000 households.

Hoima is one of the districts with the highest maternal mortality ratio with 435 mothers out of every 100,000 dying while giving birth. The district has 14 Government dispensaries (II), 14 health centers (III) at county, 2 health Centre (IV) at sub-district and 1 hospital. More so, it has 5 private / NGO dispensaries, 17 clinics, 2 health centers and a Regional referral Hospital with 139 beds. Hoima municipality is comprised of four divisions namely; Bujumbura division, Busiisi division, Kahoorra division and Mparo division.

3.2 Study Population

A target population is defined as the entire group of people that is of interest to the researcher or in other words the entire group that meets the criteria the researcher is interested in studying (Burns and Grove, 2005). The target population in this study will include all women of childbearing age (15-49 years) because cervical cancers have their highest incidence in this group of women. The study population was women aged above 30 years who are residents of
Hoima municipality. This group was studied because according to the WHO guidelines women aged 30 and above are eligible for cervical cancer screening.

3.2.1 Eligibility criteria

The study included; Women within the aged 30 years and above, Women of reproductive age who will consent in writing to participate in the study and those who are Residents of Hoima municipality.

Women who did not consent to participate, Women who were found to be in either pain or discomfort by study time and women who were non-residents of Hoima municipality were duly excluded.

3.3 Sample size calculation

Given that the rate of cervical cancer screening uptake among women in Hoima district is not known but the number of women in the Municipal council is known, the minimum sample size was calculated using the formula by Krejcie & Morgan in their 1970 article “Determining Sample Size for Research Activities”.

This was;

\[
S = \frac{X^2NP (1− P)}{d^2 (N−1) + X^2P (1− P)}
\]

S = required sample size.
\( X^2 \) = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.8416).

\[ N = \text{the target population size} \]

\[ P = \text{the population proportion (assumed to be .50 since this would provide the maximum sample size).} \]

\[ d = \text{the degree of accuracy expressed as a proportion (.05).} \]

According to the national population census (2014) Bujumbura Division has 11,954 females; Busiisi Division has 9,750 females, Kahoora Division 19,244 females while Mparo Division has 12,125 females. Given that the study was done in two divisions, a mean population of 15,599 females in the municipality.

Therefore

\[ n = \frac{3.8416 \times 15,599 \times 0.5(1 - 0.5)}{0.05^2 (15,599 - 1) + 3.8416 \times 0.5 (1 - 0.5)} \]

\[ n = 375 \text{ women of the reproductive age group in Hoima} \]

3.4 Sampling procedures

Stage one: Study sites

Hoima municipality is made up of four divisions that is (a) Bujumbura Division (b) Busiisi Division (c) Kahoora Division and (d) Mparo Division. Simple random sampling was used to sample out two of the divisions. The process will involve writing the names of the three divisions on pieces of paper, folding them, and putting them in a container and vigorously shaking the
container after which one piece of paper was picked at a time without replacement until 2 divisions are selected.

In each of the sampled divisions, cluster sampling was used to map out the parishes; in this procedure the division was clustered into urban and periurban parishes. This was done in order to get an overall representation from both the urban residents and the periurban residents in the divisions. In each cluster, 2 parishes were sampled.

Systematic random sampling was used to select households with the eligible respondent who was a woman aged 30 years and above. The total number of households in each of the selected parishes was obtained from the Local Chairperson (LC-1) and the sampling interval was calculated for each parish through dividing the total number of households per parish by the number of households targeted for inclusion in each parish. The LC-1’s household was the starting point for sampling in each parish.

3.5 Study variables

There are three independent variables including:

**Socio demographic determinants**

Age, Religion, Marital status, Education level, Parity, Occupation, Household size, VCT use, Contraceptive use, and Income

**Knowledge determinants**

Health facility factors

These characteristics specifically include; Distance to screening sites, Education about cervical cancer screening by health workers, Referral for cervical cancer screening by health workers, Status of facility where screening can be done, and Ease of getting reproductive care.

Dependent variable;

Uptake of cervical cancer screening

3.6 Data collection techniques

Quantitative methods

Structured interviews with close-ended probing questions were used to collect precise data from the respondents. The interview questions were clearly stated and were structured according to a prepared protocol. This will make the process of hearing, adjusting, and linking ideas together based on the answers given easier. As can be deduced from its name, structured interviews are fully fixed and are perhaps best seen as not flexible” (O’Leary, 2004, p.164). These were used because they will enable collection of more focused information about topics and themes related to the overarching research question. During these interviews a question was read out to the respondent accompanied with response options from which the respondent chose what they deemed appropriate.

Qualitative

Key informant interviews (KIs) and IDIs were carried out with purposively selected respondents using interview guides that were customized to the different categories of respondents. Three
focus group discussions were held, two for women who have screened before and one for women who have never screened. For the women who had never been screened, the themes included knowledge about cervical cancer, need for screening, how often they should screen, and risk perception, among other issues. They were also asked directly why they have never screened and whether a provider has ever talked to them about screening. Those that had been screened at least once were also asked questions around knowledge and risk perception, schedule for screening, and they were asked directly about what inspired them to go for screening as well as hindrances to repeat screening.

Two Key informant interviews were held with the health care service provides in each of the sampled divisions in order to obtain technical views pertaining to the dynamics of cervical cancer screening in the municipality. The key informants were sampled from Hoima regional referral hospital as this offers most of the screening services in the area. They included the midwife in charge of family planning and cervical cancer screening and the head of the maternity wing of the hospital.

During the key informant interviews, the researcher asked open ended questions upon which the key informants responded in detail and during this process, notes as well as recordings were captured.

3.7 Data collection tools

Quantitative tools

A structured researcher - administered questionnaire with closed-ended questions was the instrument used to collect quantitative data. The questionnaire will designed with four sections
including section I having socio demographic characteristics, section II having cervical cancer screening uptake questions, Section III knowledge questions and Section IV will have health facility characteristics.

The knowledge was assessed using an 8 points scale. Each correct response was scored as 1 and incorrect as 0. A score 70% (≥6 correct responses) was considered as high. The categorical dependent variable rated yes or no was whether a woman has ever had cervical cancer screening. If the answer was yes, she was asked if the cervical cancer screening was done within the past three years.

**Qualitative tools**

Focus group discussion and key informant guides were used to collect qualitative data from the focus group discussions; these guides were designed with open ended questions. They were translated into Runyoro, the commonest local language for the study setting while the KI guides were administered in English. IDI and KI interviews were audio-recorded and transcribed verbatim.

**3.8 Quality control issues**

High quality of data is essential for a study to get the most representative results, therefore, to ensure a high quality of survey data efforts was made at three stages.

1. Training prior to data collection: Qualified researchers were assigned as trainers to conduct a comprehensive training for data collectors. During training, trainees were trained on different aspects of data collection process and the data collection tools were introduced to them. They were provided with the opportunity to exercise data collection in the class environment through
role playing and simulations. Trainees also participated in field exercises to apply their gained knowledge and skill.

During data collection: A supervisor was assigned for each team to supervise and monitor the data collection process in the field, including randomization and conducting interviews in order to ensure quality of data collection in the field. The assigned supervisors ensured that the surveyors were following the sampling method; the questionnaires were filled properly; and the collected data was accurate.

Data entry: To further ensure the quality of data for analysis, qualified data entry clerks was assigned and trained on the contents of questionnaire, coding and requirement of the survey, so that they was able to avoid making any mistake while entering the data into data set.

To ensure the quality of data, double entry of the data was carried out.

**Pilot Study**

A pilot study refers to a preliminary small-scale study that is conducted by the researcher prior to the main study. The purpose of a pilot study is to: determine whether the research process and the research instrument would produce the desired data. The study tools was pre-tested at Hoima referral hospital; the research assistants interviewed one client in each of the two categories (never screened, screened once) as well as one key informant to ensure appropriateness of the questionnaires to the targeted groups. The data for these pilot interviews was not included in this analysis. Daily meetings were held during data collection to address emerging issues. The data was manually analyzed using the content analysis method.
3.8.1 Validity of the data collection instrument

Validity refers to the ability of an instrument to measure the variable that it is intended to measure (Brink et al., 2012). According to De Vos et al. (2011), validity is the degree to which an instrument measures what it intends to measure, given the context in which it is applied. It is the extent to which a measurement could be trusted and it is also referred to as the closeness of a measurement towards a true finding. In this study, both the content and the face-value validity were assessed. The researcher established face-value validity by submitting the questionnaire to his supervisor, who evaluated the questions in relation to the objectives of the study. Content-related validity was achieved through an extensive literature search on factors associated cervical cancer screening uptake, to ensure that the data collection instrument had all the necessary questions for addressing the research questions.

3.8.2 Reliability of the data collection instrument part of quality control

De Vos et al. (2011) relates reliability to the accuracy and consistency of the information obtained in the study. In general, reliability refers to the extent to which the independent administration of the same instrument consistently yields the same results under comparable conditions. In order to ensure the reliability of the data collection instrument, the researcher conducted repeated interviews with women during the piloting phase. The use of face-to-face interviews by the researcher alone was also another method utilized to improve reliability in the study.

3.9 Data analysis plan

The following steps were taken during the data management phase of this study:
Data Entry

Collected data was entered into a database created using SPSS Inc 18 statistical software. Data entry was carried out by trained research assistant/data entry clerks.

Data Cleaning

Data was screened and inspected for missing data and potential errors. At this stage, the data was checked for quality through various methods, such as frequency counts and cross tabulations.

Initial Data Analysis and Data Preparation

During this stage, the variables were scanned in terms of measurement, scale, and categories. New variables, variable combinations, and composite scores were created. At this stage, data coding was also carried out.

Final Data Analysis

Data was entered into a Microsoft Excel 2003 spreadsheet and imported to SPSS 12.0.1 for Windows version for analysis. The analysis results of participants’ demographics and baseline outcome variables (both primary and secondary) were summarized using descriptive summary measures: expressed as mean (standard deviation) or median (minimum-maximum) for continuous variables and percentage for categorical variables. The chi-square test was used to find an association between categorical variables.

Binary logistical regression was carried out to find the significant predictor for doing a Pap smear test. All statistical tests were performed using two-sided tests at the 0.05 level of significance. For all regression models, the results was expressed as effect (or odds ratios for
binary outcomes), corresponding two-sided 95% confidence intervals and associated p-values. P-values was reported to three decimal places with values less than 0.001 reported as <0.001. A high score was considered 75% or more and a low score was considered as less than 75%.

**Qualitative analysis**

The interviews were recorded on a digital audio recorder and a few text notes were also taken. The researcher transcribed the recordings and the exchanges that had been conducted in the local language was translated and also made ready for analysis. This stage in analysis will help in familiarization of the data where key ideas, impressions of respondents was identified and written down and it also helped in checking the data quality (Terre Blanche &Durrheim, 2002). This was done within 24 hours of completion of specific interviews.

The data was then subjected to a thematic content analysis, where the transcripts were coded to classify the data systematically. The first step involved structuring the interview data into 15 tables where each interview was put in a separate table. Secondly, a theme codebook was developed that comprised of the descriptions of the main themes and the various sub themes under each theme.

Numerical codes were attached to each theme and sub theme and these codes were added into a separate column of each table. Thereafter categorization of data tables was done to find patterns and the process also allowed the researcher to perform a code authentication (Gifford, undated; Masom, 2010). This provided an extra check on possible divergent cases and confirmed the emerging themes.
3.9 Plan for dissemination

It is planned that copy of the study findings will first of all be given to the university for achieving, a copy was given to the district health office of Hoima and thirdly, efforts was made to publish the thesis in digital format on line.

3.10 Ethical issues

The following steps were taken to ensure that ethical issues were adhered to:

Permission

Approval to conduct the study was obtained from the International Health Sciences University research ethics Committee and permission was granted by municipal authorities.

Informed consent

Informed consent that included the identification of the researcher, purpose, objectives, methods, duration of the interview was written, explained, and handed to the respondents. The researcher also disclosed to the respondents the benefits of the study to the society. This interpretation of the consent form was also done in Runyoro, the language spoken by the majority of the respondents. The researcher will ensure that respondents understood the information provided and voluntarily agreed to participate in the study.

Respect for persons

Respondents was informed of their rights to decide whether or not to participate in a study without the risk of penalty, their right to withdraw from the study any time, to refuse to give information and to ask for clarification about the purpose of the study. Any form of coercion was avoided. In this study, respondents were selected by chance and their participation in the research
was completely voluntary. All the respondents was equally valued and respected as they were approached without any form of stigma or discrimination.

**Principle of fair treatment / justice**

This principle was ensured in the study because the study subjects was all selected for the reasons directly related to the research, and not because they was readily available or could be easily manipulated (Brink et al., 2012). In addition, all research subjects were asked similar questions in order to ensure the principle of justice. Any agreement that the researcher reached with the respondents was also respected. Since data collection was done in an interview form, the researcher tried to be punctual and terminated the process at the agreed time. Where necessary the interview duration was extended with the permission of the respondent.

**Anonymity**

In this study, the subjects were all assured of anonymity with regard to names, contact details, reports, and publications of the study. Le May and Holmes (2012) states that, anonymity is preserved by coding the data in a way that participants cannot be identified in any presentation of the findings. The worth and dignity of the subjects was protected at all times during the study. Instruments and methods used during the interviews were disclosed to the subjects. Their responses were anonymous and the information was treated with high confidentiality. Respondents cannot be identified as their names telephone numbers, and addresses was not mentioned or recorded during the interview. Instead, they were allocated unique identifiers (codes).
Protection from harm

The researcher has an ethical obligation to protect the respondents against any form of harm that could result from their participation in a study (De Vos at al., 2011). The researcher should take an active role in promoting good and preventing harm in the world around him / her, as well as in the research studies (Holloway & Wheeler, 2010). In this study, the researcher protected the respondents from discomfort and harm by ensuring that the benefits of the study outweigh the risks (Brink et al., 2012). Therefore, in this study the researcher did not conduct any medical or other physical experiments on respondents.

Privacy and confidentiality

All information of the study was kept at a place only accessible by the researcher as this has prevented unauthorized people from having contact with the study information. All respondents in the study were assured that the information and opinions they shared would be treated with strict confidentiality. They were informed that data would only be used for the stated purpose of the research and that no other person would have access to them. Data was stored in a secured place where only the researcher had access.

Deception of respondents

The researcher is guilty of deception when he or she provides information to another person that is not true (De Vos et al., 2011), even if this can sometimes be done unintentionally. To ensure respondents were not deceived, the researcher provided the respondents with all the information about the research, as well as an official letter from IHSU outlining the research topic of this study. The researcher did not mislead respondents either by withholding information or giving
incorrect information that influenced them to participate in the study. No false promises were 
made to anyone in the selected study sample.
CHAPTER FOUR

RESULTS

4.0 Introduction

The results of this study are presented in this chapter; they have been presented in chronology with the study objectives at univariate, bivariate and multivariate levels. Qualitative data has also been presented under the appropriate sub headings.

4.1 Socio demographic profiles of the respondents

Table 1a: Socio demographic profiles related to age, religion, marital status and education level

<table>
<thead>
<tr>
<th>Profile</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age bracket of respondent</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 – 35</td>
<td>234</td>
<td>62.4</td>
</tr>
<tr>
<td>36 – 41</td>
<td>76</td>
<td>20.3</td>
</tr>
<tr>
<td>42 – 47</td>
<td>39</td>
<td>10.4</td>
</tr>
<tr>
<td>More than 47 years</td>
<td>26</td>
<td>6.9</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>145</td>
<td>38.7</td>
</tr>
<tr>
<td>Anglican</td>
<td>124</td>
<td>33.1</td>
</tr>
<tr>
<td>Muslim</td>
<td>40</td>
<td>10.7</td>
</tr>
<tr>
<td>Born again</td>
<td>52</td>
<td>13.9</td>
</tr>
<tr>
<td>SDA</td>
<td>14</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>251</td>
<td>66.9</td>
</tr>
<tr>
<td>Single</td>
<td>75</td>
<td>20.0</td>
</tr>
<tr>
<td>Divorced / separated</td>
<td>49</td>
<td>13.1</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>24</td>
<td>6.4</td>
</tr>
<tr>
<td>Lower primary (p1 – p4)</td>
<td>33</td>
<td>8.8</td>
</tr>
<tr>
<td>Upper primary (P5 – P7)</td>
<td>90</td>
<td>24.0</td>
</tr>
<tr>
<td>Secondary</td>
<td>180</td>
<td>48.0</td>
</tr>
<tr>
<td>Tertiary level</td>
<td>48</td>
<td>12.8</td>
</tr>
</tbody>
</table>
Table 1a above shows part of the results obtained on the socio demographic characteristics of the women who were sampled. The results show that the study population was composed of mostly youthful women with ages ranging between 30 – 35 years (n = 234, 62.4%), most of the women were Catholics by faith (n = 145, 38.7%). Majority of the mothers reported to be married (n = 251, 66.9%), and most of them had been educated up to secondary level (n = 180, 48%).

Table 1b: Socio demographic profiles related to parity, occupation, household size, VCT, and residence

<table>
<thead>
<tr>
<th>Profile</th>
<th>Frequency n=375</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>161</td>
<td>42.9</td>
</tr>
<tr>
<td>Two</td>
<td>126</td>
<td>33.6</td>
</tr>
<tr>
<td>Three</td>
<td>60</td>
<td>16.0</td>
</tr>
<tr>
<td>Four</td>
<td>28</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>178</td>
<td>47.5</td>
</tr>
<tr>
<td>Business person</td>
<td>174</td>
<td>46.4</td>
</tr>
<tr>
<td>Civil servant</td>
<td>23</td>
<td>6.1</td>
</tr>
<tr>
<td><strong>Number of members in household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 5</td>
<td>281</td>
<td>74.9</td>
</tr>
<tr>
<td>6 – 10</td>
<td>93</td>
<td>24.8</td>
</tr>
<tr>
<td>More than 10</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Ever gone for voluntary counseling and testing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>222</td>
<td>59.2</td>
</tr>
<tr>
<td>No</td>
<td>153</td>
<td>40.8</td>
</tr>
<tr>
<td><strong>Ever used any form of contraception</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>260</td>
<td>69.3</td>
</tr>
<tr>
<td>No</td>
<td>115</td>
<td>30.7</td>
</tr>
<tr>
<td><strong>Description of residence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>6</td>
<td>1.6</td>
</tr>
<tr>
<td>Urban</td>
<td>291</td>
<td>77.6</td>
</tr>
<tr>
<td>Peri-urban</td>
<td>78</td>
<td>20.8</td>
</tr>
</tbody>
</table>
Table 1b above shows the other part of the results obtained on the socio demographic profiles of the women. It is shown that most of the women were of parity one by study time (n = 161, 42.9%), and were housewives (n = 178, 47.5%). The reported number of household members by majority of the women was between 1 - 5 (n = 281, 74.9%) with a mean number of 3.6 members. More than half of the women had ever gone for voluntary counseling and testing (n = 222, 59.2%), and had ever used a form of contraception (n = 260, 69.3%). More than three quarters of the women described their residencies as rural (n = 295, 77.6%).

4.2 The proportion of women of the reproductive age group that have screened for cervical cancer in Hoima municipality, Hoima district

![Figure 2: Cervical cancer screening uptake](image)

The women were asked whether they had gone for cervical cancer screening previously prior to the study, and it was found that only 17.6% (66) had gone for the screening, more than three quarters of them had not by study time 80.4% (309).
During the focus group discussions for screened women, they were asked why some women do not go for cervical cancer screening service, and this is what they had to say;

“It is very hard for them to do it sometimes they do not take it serious because they do not take any health issues serious like me before I went to do my Pap smear the doctor reminded me over and over and one day I sat down and said to myself this is important I do not know whether I am having cervical cancer or not so I needed to go” FGD participant, screened

Another one said;

“I highly doubt that a lot of women in Hoima go for Pap smear tests. Some people may also think it’s a sexual disease and culturally people do not talk about sex and they may not feel comfortable discussing issues like that” Screened woman

Some of the women related the low uptake of cervical cancer screening services on the busy schedules that they and other women have that they think stops them from up taking the services.

“Some of us know the importance of screening just that when you are busy especially with big family you are always busy and you cannot have time you want to focus on the family and you do not think about yourself that much so not that you don’t even get time to for screening” FGD participant non screened

The health workers views on the level of uptake of cervical cancer screening aligned with the quantitative results of this study, they also mentioned it was only a few women who were seeking the CCS services

“Most women in this municipality do not actually up take the services, I would estimate the level of uptake to be like 30% in this municipality if am to put it out of 100” Health worker HRRH
4.3 The socio demographic characteristics of women of the reproductive age group associated with cervical cancer screening uptake in Hoima municipality, Hoima district

Table 2a: The socio demographic characteristics of women of reproductive age associated with cervical cancer screening uptake in Hoima municipality, Hoima district

<table>
<thead>
<tr>
<th></th>
<th>Ever been screened for cervical cancer</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
<td>No (%)</td>
<td>X²</td>
<td>df</td>
</tr>
<tr>
<td><strong>Age bracket of respondent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 – 35</td>
<td>46 (19.7%)</td>
<td>188 (80.3%)</td>
<td>2.380</td>
<td>4</td>
</tr>
<tr>
<td>36 – 41</td>
<td>10 (13.2%)</td>
<td>66 (86.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42 – 47</td>
<td>7 (17.9%)</td>
<td>32 (82.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 47 years</td>
<td>3 (11.5%)</td>
<td>23 (88.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>26 (17.9%)</td>
<td>119 (82.1%)</td>
<td>5.447</td>
<td>4</td>
</tr>
<tr>
<td>Anglican</td>
<td>26 (21.0%)</td>
<td>98 (79.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muslim</td>
<td>8 (20.0%)</td>
<td>32 (80.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Born again</td>
<td>6 (11.5%)</td>
<td>46 (88.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDA</td>
<td>0 (0.0%)</td>
<td>14 (100.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>44 (17.5%)</td>
<td>207 (82.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>14 (18.7%)</td>
<td>61 (81.3%)</td>
<td>0.114</td>
<td>2</td>
</tr>
<tr>
<td>Divorced / separated</td>
<td>8 (16.3%)</td>
<td>41 (83.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>2 (8.3%)</td>
<td>22 (91.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower primary (p1 – p4)</td>
<td>4 (12.1%)</td>
<td>29 (87.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper primary (P5 – P7)</td>
<td>18 (20.0%)</td>
<td>72 (80.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>29 (16.1%)</td>
<td>151 (83.9%)</td>
<td>5.713</td>
<td>4</td>
</tr>
<tr>
<td>Tertiary level</td>
<td>13 (27.1%)</td>
<td>35 (72.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>37 (23.0%)</td>
<td>124 (77.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>17 (13.5%)</td>
<td>109 (86.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>5 (8.3%)</td>
<td>55 (91.7%)</td>
<td>9.291</td>
<td>3</td>
</tr>
<tr>
<td>Four</td>
<td>7 (25.0%)</td>
<td>21 (75.0%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results in the table above show the relationship between socio demographic characteristics of the women of the reproductive age group and cervical cancer screening uptake in Hoima municipality, Hoima district. It is shown that only one socio demographic characteristics had a significant association with cervical cancer screening uptake in Hoima municipality, Hoima district. This is the parity of the women with a Chi square value ($X^2$) of 9.291, and a p value of 0.026. Highest uptake of CCS was found to be among women of higher parity (4) (25%) according to the cross tabulations.

Table 2b: The socio demographic characteristics of women of the reproductive age group associated with cervical cancer screening uptake in Hoima municipality, Hoima district

<table>
<thead>
<tr>
<th></th>
<th>Ever been screened for cervical cancer</th>
<th></th>
<th>X$^2$</th>
<th>df</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>32(18.0%)</td>
<td>146(82.0%)</td>
<td>0.352</td>
<td>2</td>
<td>0.838</td>
</tr>
<tr>
<td>Business person</td>
<td>31(17.8%)</td>
<td>143(82.2%)</td>
<td>0.352</td>
<td>2</td>
<td>0.838</td>
</tr>
<tr>
<td>Civil servant</td>
<td>3(13.0%)</td>
<td>20(87.0%)</td>
<td>0.352</td>
<td>2</td>
<td>0.838</td>
</tr>
<tr>
<td>Number of members in household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 5</td>
<td>52(18.5%)</td>
<td>229(81.5%)</td>
<td>0.788</td>
<td>2</td>
<td>0.674</td>
</tr>
<tr>
<td>6 – 10</td>
<td>14(15.1%)</td>
<td>79(84.9%)</td>
<td>0.788</td>
<td>2</td>
<td>0.674</td>
</tr>
<tr>
<td>More than 10</td>
<td>0(0.00%)</td>
<td>1(100.0%)</td>
<td>0.788</td>
<td>2</td>
<td>0.674</td>
</tr>
<tr>
<td>Ever gone for voluntary counseling and testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>50(22.5%)</td>
<td>172(77.5%)</td>
<td>9.091</td>
<td>1</td>
<td>0.003</td>
</tr>
<tr>
<td>No</td>
<td>16(10.5%)</td>
<td>137(89.5%)</td>
<td>9.091</td>
<td>1</td>
<td>0.003</td>
</tr>
<tr>
<td>Ever used any form of contraception</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>53(20.4%)</td>
<td>207(79.6%)</td>
<td>4.533</td>
<td>1</td>
<td>0.033</td>
</tr>
<tr>
<td>No</td>
<td>13(11.3%)</td>
<td>102(88.7%)</td>
<td>4.533</td>
<td>1</td>
<td>0.033</td>
</tr>
<tr>
<td>Description your residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>2(33.3%)</td>
<td>4(66.7%)</td>
<td>7.394</td>
<td>2</td>
<td>0.025</td>
</tr>
<tr>
<td>Urban</td>
<td>58(19.9%)</td>
<td>233(80.1%)</td>
<td>7.394</td>
<td>2</td>
<td>0.025</td>
</tr>
</tbody>
</table>
The results in the table above show the relationship between more socio demographic characteristics of the women of the reproductive age group and cervical cancer screening uptake in Hoima municipality, Hoima district. It is shown that three socio demographic characteristics had a significant association with cervical cancer screening uptake in Hoima municipality, Hoima district.

These are ever going for voluntary counseling and testing with a Chi square value ($X^2$) of 9.091 and a p value of 0.003, ever using any form of contraception a Chi square value ($X^2$) of 4.533 and a p value of 0.033 and the residence of the women a Chi square value ($X^2$) of 7.394 and a p value of 0.025. It is further shown that, women who had ever gone for voluntary counseling and testing (22.5%), women who had ever used any form of contraception (20.4%) and women who were residing in rural areas (33.3%) had better uptakes of cervical cancer screening.

Focus group discussion were held with the women on issues regarding their socio demographic characteristics and how they think those characteristics influenced uptake of cervical cancer screening service uptake. The discussions with the women who had been screened revealed that to them they thought of a woman did not matter when it comes to seeking screening services. Most of them mentioned that just like younger women, older women, can also seek screening services because both of the age groups know the importance of preventing diseases;

“For me I do not think age can be a factor in seeking screening services uptake, I think whether you are young or old, it does not matter, the importance of disease prevention is known by all women” FGD participant
However, most women agreed that the setup of residence affected cervical cancer screening uptake, they mentioned that rural women were less likely to uptake screening services. According to them rural women stay far from the services compared to urban women and so that is the reason as to why rural women were less likely to be screened.

“I think women staying in rural areas do not even go for screening, I mean they stay so far from where the health centers like Hoima hospital are, so because of that, I think they find it hard to come to the towns” FGD woman screened

However three women differed from this viewpoint by mentioning that; “Rural women can be better users of screening because most of them are farmers who can get time to go to the health centers unlike us in town who are employed or do business, it can be hard to get time off for only screening”

Some of the key informants mentioned that some women were just shy and that according to them older women were less likely to go for screening;

“Basically when I was talking to some of them, some of them are very shy to show their private parts. Some of them are attached to the clinicians, they know that every other day they will be coming in and since you have screened…, they think that you can remember that so and so looked like this so that is one of the fears in our clients” (Health worker).

"It is difficult because the older age group believe that sex is a private thing and should not be talked about anywhere except in the bedroom with your own partner so discussing it openly out there, they get shy talking about it and they rather not talk about it at all. Sometimes they (older generation) feel intimidated talking about the subject thinking “why are they even talking about this, in our generation (older generation) you cannot talk about this but now everything has
changed” therefore to get them comfortable and to talk about it the youth must be
involved” Health worker KII

Table 2c; Binary logistic regression analysis for the socio demographic characteristics of
women of the reproductive age group associated with cervical cancer screening uptake in
Hoima municipality, Hoima district

<table>
<thead>
<tr>
<th>Profile</th>
<th>Sig</th>
<th>AOR</th>
<th>CI 95% for AOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>.816</td>
<td>1.117</td>
<td>.440 - 2.834</td>
</tr>
<tr>
<td>Two</td>
<td>.135</td>
<td>2.137</td>
<td>.789 - 5.789</td>
</tr>
<tr>
<td>Three</td>
<td>.042</td>
<td>3.667</td>
<td>1.047 - 12.836</td>
</tr>
<tr>
<td>Four</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ever gone for voluntary counseling and testing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>.003</td>
<td>1.402</td>
<td>1.219 - 3.736</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ever used any form of contraception</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>.036</td>
<td>.498</td>
<td>.260 - .955</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description your residence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>.063</td>
<td>1.167</td>
<td>1.025 - 4.104</td>
</tr>
<tr>
<td>Urban</td>
<td>.015</td>
<td>.335</td>
<td>.139 - .808</td>
</tr>
<tr>
<td>Peri-urban</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in the table above show that women of higher parity (3 and above) had 3 times higher
odds of up taking cervical cancer screening (OR = 3, CI = 1.047 - 12.836), women who had ever
gone for voluntary counseling and testing were more likely to uptake cervical cancer screening
(OR = 1.4, CI = 1.219 - 3.736). Women who had ever used any form of contraception by study
time were less likely to uptake cervical cancer screening (OR = 0.498, CI = .260 - .955) whereas
women who were rural residents were more likely to take cervical cancer screening (OR = 0.167, CI = 1.025 – 4.104).

4.4 Knowledge about cervical cancer

*Table 2a: Knowledge about cervical cancer*

<table>
<thead>
<tr>
<th>Awareness filters</th>
<th>Frequency n=375</th>
<th>% =100</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ever heard of cervical cancer screening</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>333</td>
<td>88.8</td>
</tr>
<tr>
<td>No</td>
<td>42</td>
<td>11.2</td>
</tr>
<tr>
<td><strong>Can cervical cancer be prevented</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>249</td>
<td>66.4</td>
</tr>
<tr>
<td>No</td>
<td>42</td>
<td>11.2</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>84</td>
<td>22.4</td>
</tr>
<tr>
<td><strong>Cervical cancer can be prevented through the following methods Please tick all that apply</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccination with HPV vaccine</td>
<td>178</td>
<td>47.5</td>
</tr>
<tr>
<td>Routine Screening</td>
<td>57</td>
<td>15.2</td>
</tr>
<tr>
<td>Limiting the number of sexual partners</td>
<td>63</td>
<td>16.8</td>
</tr>
<tr>
<td>Not smoking and avoiding secondhand smoke.</td>
<td>26</td>
<td>6.9</td>
</tr>
<tr>
<td>Using a condom if one is sexually active</td>
<td>37</td>
<td>9.9</td>
</tr>
<tr>
<td>Following up on abnormal screening results</td>
<td>14</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Heard about the cervical cancer vaccine</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>327</td>
<td>87.2</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
<td>12.8</td>
</tr>
<tr>
<td><strong>Where is cervical cancer screening done</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At the hospital</td>
<td>263</td>
<td>70.1</td>
</tr>
<tr>
<td>At the health center IV</td>
<td>59</td>
<td>15.7</td>
</tr>
<tr>
<td>At the health center III</td>
<td>36</td>
<td>9.6</td>
</tr>
<tr>
<td>At all health facilities</td>
<td>17</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Age of is cervical cancer screening started</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 20 years</td>
<td>313</td>
<td>83.5</td>
</tr>
<tr>
<td>At 30 years</td>
<td>59</td>
<td>15.7</td>
</tr>
<tr>
<td>At 40 years</td>
<td>3</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Majority of the women sampled had ever heard of cervical cancer screening (n = 333, 88.8%) and reportedly knew how cervical cancer be prevented (n = 249, 66.4%). Most of the women were aware that cervical cancer could be prevented through vaccination with HPV vaccine (n = 178, 47.5%). More than three quarters of the women had heard about the cervical cancer vaccine (n = 327, 87.2%), and according to majority of them cervical cancer screening was done at only hospitals (n = 263, 70.1%). Majority of the women stated that the age at which cervical cancer is screening started is below 20 years (n = 313, 83.5%).
<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Strongly disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The following may increase a woman’s chance of developing cervical cancer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection with Human Papillomavirus (HPV)</td>
<td>61(16.3%)</td>
<td>2(0.5%)</td>
<td>99(26.4%)</td>
<td>91(24.3%)</td>
<td>122(32.5%)</td>
</tr>
<tr>
<td>Smoking cigarettes</td>
<td>67(17.9%)</td>
<td>70(18.7%)</td>
<td>76(20.3%)</td>
<td>122(32.5%)</td>
<td>40(10.7%)</td>
</tr>
<tr>
<td>Having a weakened immune system (e.g. Having HIV, Transplant)</td>
<td>22(5.9%)</td>
<td>2(0.5%)</td>
<td>78(20.8%)</td>
<td>144(38.4%)</td>
<td>129(34.4%)</td>
</tr>
<tr>
<td>Long-term use of contraceptive pill</td>
<td>18(4.8%)</td>
<td>5(1.3%)</td>
<td>49(13.1%)</td>
<td>156(41.6%)</td>
<td>147(39.2%)</td>
</tr>
<tr>
<td>Infection with sexually transmitted infections</td>
<td>28(7.5%)</td>
<td>4(1.1%)</td>
<td>85(22.7%)</td>
<td>175(46.7%)</td>
<td>83(22.1%)</td>
</tr>
<tr>
<td>Having a sexual partner who is not circumcised</td>
<td>39(10.4%)</td>
<td>16(4.3%)</td>
<td>67(17.9%)</td>
<td>153(40.8%)</td>
<td>100(26.7%)</td>
</tr>
<tr>
<td>Starting to have sex at young age (before 17 years)</td>
<td>16(4.3%)</td>
<td>7(1.9%)</td>
<td>39(10.4%)</td>
<td>181(48.3%)</td>
<td>132(35.2%)</td>
</tr>
<tr>
<td>Having many sexual partners</td>
<td>26(6.9%)</td>
<td>7(1.9%)</td>
<td>78(20.8%)</td>
<td>175(46.7%)</td>
<td>89(23.7%)</td>
</tr>
<tr>
<td><strong>The following may be warning signs for cervical cancer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal bleeding between periods</td>
<td>30(8.0%)</td>
<td>10(2.7%)</td>
<td>94(25.1%)</td>
<td>169(45.1%)</td>
<td>72(19.2%)</td>
</tr>
<tr>
<td>Persistent lower back pain</td>
<td>42(11.2%)</td>
<td>14(3.7%)</td>
<td>136(36.3%)</td>
<td>142(37.9%)</td>
<td>41(10.9%)</td>
</tr>
<tr>
<td>A persistent vaginal discharge that smells unpleasant</td>
<td>35(9.3%)</td>
<td>9(2.4%)</td>
<td>96(25.6%)</td>
<td>174(46.4%)</td>
<td>61(16.3%)</td>
</tr>
<tr>
<td>Discomfort or pain during sex</td>
<td>44(11.7%)</td>
<td>6(1.6%)</td>
<td>117(31.2%)</td>
<td>168(44.8%)</td>
<td>40(10.7%)</td>
</tr>
<tr>
<td>Menstrual periods that are heavier or longer</td>
<td>33(8.8%)</td>
<td>0(0.0%)</td>
<td>99(26.4%)</td>
<td>181(48.3%)</td>
<td>62(16.5%)</td>
</tr>
<tr>
<td>Persistent diarrhea</td>
<td>67(17.9%)</td>
<td>13(3.5%)</td>
<td>131(34.9%)</td>
<td>133(35.5%)</td>
<td>31(8.3%)</td>
</tr>
<tr>
<td>Vaginal bleeding after the menopause</td>
<td>48(12.8%)</td>
<td>8(2.1%)</td>
<td>98(26.1%)</td>
<td>154(41.1%)</td>
<td>67(17.9%)</td>
</tr>
<tr>
<td>Vaginal bleeding during or after sex</td>
<td>35(9.3%)</td>
<td>4(1.1%)</td>
<td>99(26.4%)</td>
<td>154(41.1%)</td>
<td>83(22.1%)</td>
</tr>
<tr>
<td>Blood in the stool or urine</td>
<td>40(10.7%)</td>
<td>11(2.9%)</td>
<td>120(32.0%)</td>
<td>152(40.5%)</td>
<td>52(13.9%)</td>
</tr>
<tr>
<td>Unexplained weight loss</td>
<td>43(11.5%)</td>
<td>16(4.3%)</td>
<td>105(28.0%)</td>
<td>155(41.3%)</td>
<td>56(14.9%)</td>
</tr>
</tbody>
</table>

The women were asked what could increase a woman’s chance of developing cervical cancer and majority disagreed with starting to have sex at young age (before 17 years) (n = 313, 83.5%),
however most of the agreed to smoking as one that can increase a woman’s chance of developing cervical cancer (n = 137, 36.6%). When asked for the signs of cervical cancer, most of the women agreed to persistent diarrhea being a sign (n = 80, 21.4%).

*Figure 3: The level of knowledge on cervical cancer e among women of reproductive age group in Hoima municipality, Hoima district*

The results in tables in table 2a and 2b were computed to measure the level of knowledge about cervical cancer among the women. There were 8 questions each with a score of 1, a woman was regarded as highly knowledgeable if she got at least 6 questions (75%) correct. Using this scale, it was found that majority of the women had low knowledge about cervical cancer (n = 278, 74.1%).

All categories of women including those that had never screened had basic information about cervical cancer; they were aware of the disease and that it can be prevented and treated. Sixteen out of the eighteen women who were interviewed had heard about cervical screening and cervical cancer from the health education offered at the health centers.
“Yes I have ever heard that cervical cancer is one of the sexually transmitted diseases, so it is reasonable to screen for cervical cancer... if you test early enough...... it becomes easier to treat it. If they find that you don’t have it, they advise on what preventive measures you have to take.” (Client never screened)

All the women, including those who had ever screened and interacted with the health workers, lacked information on how the disease is treated.

“I don’t know how cancer of the cervix is treated, maybe they give tablets or maybe they give injection, or they just place them there, I really don’t know... they told me when I went for checking that if it is found that you have it, you will be given some drugs, but for me I don’t know anything about that drug, I don’t know how it is treated” (Client, screened once).

The following quotes help to demonstrate variable knowledge about signs and symptoms about cervical cancer.

“I know it affects the cervix, may be the signs, like when you have sex you bleed, it’s painful and I think....one of the things that causes it, is like when you have fibroids and you have fibroids, you don’t treat them, and let me say STDs you don’t treat them, they can develop into this” (34 year old business woman)

The two service providers also concurred with the clients that health education about cervical cancer was not adequate. “I would say it is not done on a regular basis depending on the number of health workers because not all health workers are well versed with information on this cancer so we cannot just pick anybody to come and speak about this... so when we are few health workers in the reproductive health then the health talks will not take place (Health worker)
“There are few health workers who were trained in cervical screening, but then there are some who trained but are not interested because of the nature of the work.... (Health worker)

“...I had pain in the back for such a long time and.... for many years, I got something that would come out in the vagina; that is why I decided to come here for screening” (Client, screened on schedule).

“I went for a checkup it is because I had started developing sign....” (Client, screened on schedule)

“I know that cervical cancer attacks the private parts of women and it is very dangerous and usually attacks women and it kills if you don’t get treatment. It attacks the inside of the private parts down and the breasts of women” (38 year old business woman)

“Cervical cancer is a disease of women and I hear that it catches women who have delivered and were not operated well. They are operated and some things remain inside, this can cause infection and then she gets cervical cancer” (43 year old woman)

**Table 3: The influence of knowledge about cervical cancer on cervical cancer screening uptake among women of reproductive age group in Hoima municipality, Hoima district**

<table>
<thead>
<tr>
<th>Level of knowledge</th>
<th>Ever been screened for cervical cancer</th>
<th>(X^2)</th>
<th>df</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>23(23.7%)</td>
<td>74(76.3%)</td>
<td>3.370</td>
<td>1</td>
</tr>
<tr>
<td>Low</td>
<td>43(15.5%)</td>
<td>235(84.5%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in the table above show that the level of knowledge did not have a statistically significant influence on the uptake of cervical cancer screening \((X^2 = 3.370, p = 0.066)\)
4.5 Health facility related factors

*Table 4: Health services related factors in Hoima municipality*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distance to nearest health facility in municipality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 km</td>
<td>168</td>
<td>44.8</td>
</tr>
<tr>
<td>1 – 3 km</td>
<td>207</td>
<td>55.2</td>
</tr>
<tr>
<td><strong>Presence of cervical cancer screening sites set up in this community</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>214</td>
<td>57.1</td>
</tr>
<tr>
<td>No</td>
<td>161</td>
<td>42.9</td>
</tr>
<tr>
<td><strong>Health workers educate you about cervical cancer screening</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>141</td>
<td>37.6</td>
</tr>
<tr>
<td>No</td>
<td>234</td>
<td>62.4</td>
</tr>
<tr>
<td><strong>Ever been referred for cervical cancer screening by health workers working in this municipality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>120</td>
<td>32.0</td>
</tr>
<tr>
<td>No</td>
<td>255</td>
<td>68.0</td>
</tr>
<tr>
<td><strong>Ease of getting maternal health services from the health services in this municipality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very easy</td>
<td>53</td>
<td>14.1</td>
</tr>
<tr>
<td>Easy</td>
<td>215</td>
<td>57.3</td>
</tr>
<tr>
<td>Not easy at all</td>
<td>107</td>
<td>28.5</td>
</tr>
<tr>
<td><strong>Health facilities in this municipal provide cervical screening services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>215</td>
<td>57.3</td>
</tr>
<tr>
<td>No</td>
<td>160</td>
<td>42.7</td>
</tr>
<tr>
<td><strong>Have health workers to this community to teach you about cervical cancer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>153</td>
<td>40.8</td>
</tr>
<tr>
<td>No</td>
<td>222</td>
<td>59.2</td>
</tr>
<tr>
<td><strong>Waiting time for maternal health services at any of the facilities in this municipality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30 minutes</td>
<td>70</td>
<td>18.7</td>
</tr>
<tr>
<td>30 minutes – 1 hour</td>
<td>155</td>
<td>41.3</td>
</tr>
<tr>
<td>More than 1 hour</td>
<td>150</td>
<td>40.0</td>
</tr>
</tbody>
</table>
The distance to the nearest health facility in the municipality was reported to be between 1 – 3 kilometers by more than half of the women (n = 207, 55.5%). The presence of cervical cancer screening sites set up in the community was acknowledged by more than half of the women (n = 213, 57.1%), whereas majority of the women denied being educated by health workers about cervical cancer screening (n = 234, 62.4%). Majority of the women denied ever being referred for cervical cancer screening by health workers working in the municipality (n = 255, 68%), and also mentioned rated the ease of getting maternal health services from the health services in the municipal as easy (n = 215, 57.3%). Health facilities in the municipal were reported to provide cervical screening services by slightly above half of the women (n = 215, 57.3%), while the almost the same proportion (n = 222, 59.2%) mentioned that health workers in the community never taught them about cervical cancer. The waiting time for maternal health services at any of the facilities in the municipality was mentioned to be between 30 minutes and 1 hour (n = 155, 41.3%).

When probed further, they noted that sometimes it was the long waiting time or complacency that made them postpone the screening.

“Sometimes the queue is long and yet you came from duty. The other issue it seems “bugayavu” (laziness). So you keep on postponing it” (Client, never screened).

Another one stated that;

“….. Sometimes you come when you need to go back quickly for work and yet at screening you have to wait for a long time. Sometimes the queue is long and yet you came from duty so you keep on postponing it, but it is still the issue of time” (Client, never screened).
Table 5a: The health services related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district

<table>
<thead>
<tr>
<th>Have you ever been screened for cervical cancer</th>
<th>Yes</th>
<th>No</th>
<th>X^2</th>
<th>df</th>
<th>pvalue</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distance to nearest health facility in municipality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 km</td>
<td>30(17.9%)</td>
<td>138(82.1%)</td>
<td>0.014</td>
<td>1</td>
<td>0.906</td>
</tr>
<tr>
<td>1 – 3 km</td>
<td>36(17.4%)</td>
<td>171(82.6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Presence of cervical cancer screening sites set up in this community</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>48(22.4%)</td>
<td>166(77.6%)</td>
<td>8.018</td>
<td>1</td>
<td>0.005</td>
</tr>
<tr>
<td>No</td>
<td>18(11.2%)</td>
<td>143(88.8%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Health workers educate you about cervical cancer screening</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>36(25.5%)</td>
<td>105(74.5%)</td>
<td>9.803</td>
<td>1</td>
<td>0.002</td>
</tr>
<tr>
<td>No</td>
<td>30(12.8%)</td>
<td>204(87.2%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ever been referred for cervical cancer screening by health workers working in this municipality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32(26.7%)</td>
<td>88(73.3%)</td>
<td>10.003</td>
<td>1</td>
<td>0.002</td>
</tr>
<tr>
<td>No</td>
<td>34(13.3%)</td>
<td>221(86.7%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ease of getting maternal health services from the health services in this municipality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very easy</td>
<td>17(32.1%)</td>
<td>36(67.9%)</td>
<td>10.252</td>
<td>2</td>
<td>0.006</td>
</tr>
<tr>
<td>Easy</td>
<td>29(13.5%)</td>
<td>186(86.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not easy at all</td>
<td>20(18.7%)</td>
<td>87(81.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Health facilities in this municipal provide cervical screening services</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47(21.9%)</td>
<td>168(78.1%)</td>
<td>6.307</td>
<td>1</td>
<td>0.012</td>
</tr>
<tr>
<td>No</td>
<td>19(11.9%)</td>
<td>141(88.1%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Have health workers to this community to teach you about cervical cancer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>66(17.6%)</td>
<td>309(82.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>36(23.5%)</td>
<td>117(76.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Waiting time for maternal health services at any of the facilities in this municipality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30 minutes</td>
<td>30(13.5%)</td>
<td>192(86.5%)</td>
<td>6.265</td>
<td>1</td>
<td>0.012</td>
</tr>
<tr>
<td>30 minutes – 1 hour</td>
<td>22(31.4%)</td>
<td>48(68.6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 1 hour</td>
<td>25(16.1%)</td>
<td>130(83.9%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 1 hour</td>
<td>19(12.7%)</td>
<td>131(87.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results in the table above show the results pertaining to the health facility related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district. It is shown that almost all the health facility related factors had a significant influence; they include the presence of cervical cancer screening sites set up in the community ($X^2 = 8.018$, $p = 0.005$), education about cervical cancer screening by health workers ($X^2 = 9.803$, $p = 0.002$), ever been referred for cervical cancer screening by health workers working in the municipality ($X^2 = 10.252$, $p = 0.006$), the ease of getting maternal health services from the health services in the municipal ($X^2 =6.307$, $p = 0.012$), provision of cervical screening services by health facilities in the municipal ($X^2 = 6.265$, $p = 0.012$), health workers to the community teaching about cervical cancer ($X^2 = 6.265$, $p = 0.012$), and waiting time for maternal health services at any of the facilities in this municipality ($X^2 = 11.979$, $p = 0.003$).
Table 5b: Binary logistic regression analysis for the health services related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district

<table>
<thead>
<tr>
<th>Factor</th>
<th>Sig</th>
<th>AOR</th>
<th>CI 95% for AOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of cervical cancer screening sites set up in this community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>.429</td>
<td>1.754</td>
<td>.374</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health workers educate you about cervical cancer screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>.705</td>
<td>.871</td>
<td>.424</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever been referred for cervical cancer screening by health workers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>working in this municipality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>.073</td>
<td>1.570</td>
<td>.308</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of getting maternal health services from the health services in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>this municipality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very easy</td>
<td>.492</td>
<td>.751</td>
<td>.332</td>
</tr>
<tr>
<td>Easy</td>
<td>.168</td>
<td>1.585</td>
<td>.823</td>
</tr>
<tr>
<td>Not easy at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health facilities in this municipality provide cervical screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>.503</td>
<td>1.782</td>
<td>.382</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have health workers come to community to teach about cervical cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>.689</td>
<td>2.872</td>
<td>.447</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiting time for maternal health services at any of the facilities in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>this municipality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30 minutes</td>
<td>.122</td>
<td>2.538</td>
<td>1.245</td>
</tr>
<tr>
<td>30 minutes – 1 hour</td>
<td>.570</td>
<td>.821</td>
<td>.416</td>
</tr>
<tr>
<td>More than 1 hour</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results in the table above show that women who were positive about the presence of cervical cancer screening sites set up in the community were 1.7 times more likely to uptake cervical cancer screening services (OR = 1.7, CI = 0.374 – 3.518). There were also higher odds of being screened among women who had ever been referred for cervical cancer screening by health workers working in the municipality (OR = 1.570, CI = 0.308 – 1.053), among women who said it was easy to get maternal health services from the health services in the municipal (OR = 1.585, CI = 0.823 - 3.052), women who reported that cervical screening services were being provided by health facilities in the municipal (OR = 1.782, CI = 0.382 – 3.603). Women who mentioned that health workers came to the community and taught about cervical cancer were twice more likely to uptake cervical cancer screening (OR = 2.872, CI = 0.447 – 6.704), and so were the women who waited for maternal health services for less than 30 minutes at any of the facilities in the municipality (OR = 2.538, CI = 1.245 – 6.180).
CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

A discussion of results has been done and presented in this chapter. The discussion presented in this chapter includes explanations for the findings obtained by the study and a comparative analysis of the results with the results of other studies.

5.1 The proportion of women of the reproductive age group that have screened for cervical cancer in Hoima municipality, Hoima district

The results of this study found that only 17.6% of respondents had ever screened for cervical cancer. This finding implies a low screening uptake level affirms a reinstatement by Moodley (2009) that, in reality women in developing countries usually attend health care for cervical smear when the disease is symptomatic and progressed to advanced stages. This low level of screening is higher but similar with the 5-year screening prevalence for developing countries estimated by WHO (5%) and in close agreement with a prevalence of 6% reported by a Kenyan (Sudenga, 2013) and Tanzanian study (Cunningham, 2015), and 7% by a Ugandan study (Twinomujuni, 2015). Other studies in East Africa have reported almost similar proportions ranging from 12% to 27% (Were, 2011; Gichangi, 2003; Mutyaba, 2006).

A similar study in Botswana found that only 40% of study participants had ever had Pap smear tests (McFarland, 2003). This finding of low participation of cervical cancer screening and low follow-up of screening is consistent with most other studies done in less developed countries which reported a participation rate of 23% and follow-up rates of 46% within three years (Carey,
1993). However, these findings though reported to be low were higher than the level of cervical cancer screening uptake shown in the current study (17.6%). The major difference between the results of the current study and those of other studies where a higher uptake was found is because which many of those previous studies were conducted in health care settings except the Tanzanian studies.

The finding that only approximately 2 out of ten women up took the CCS services is symbolic of a significant public health challenge of low disease prevention practices among women in Hoima district. The results imply that either the women who are eligible for cervical cancer screening in Hoima district (above 30 years) are not aware that they are eligible, they have not heard about cervical cancer screening services or have a number of barriers that hinder their health seeking behaviors at individual and even at health facility level.

5.2 The socio demographic characteristics of women of the reproductive age group associated with cervical cancer screening uptake in Hoima municipality, Hoima district

The results of this study show that parity had a significant association with the uptake of cervical cancer screening services among women in Hoima municipality. It was shown that higher parity was associated with increased uptake of cervical cancer screening. This is similar to a study by Nene et al.’s (2007) who also found that increased parity had a significant association with the increased likelihood of using cervical cancer screening services. Consequently, previous studies seem to provide contradictory results about the correlation between women’s parity and their likelihood of using cervical cancer screening services Tsu and Levin (2008).

With increased parity comes an increased frequency of contact with health care personnel during antenatal, delivery and postnatal care, which increases chances of exposure to health education
and counseling from the health workers. This can bring about gradual behavioral change among the women, which increases chances of going for screening.

The results of this study also show that there were two almost similar characteristics which significantly positively influenced uptake of cervical cancer screening among women in Hoima district. They were a history of seeking voluntary testing and counseling services and use of contraceptives, women who had sought those two services happened to have higher Cervical Cancer Screening (CCS) service uptake. This is because, seeking of any of the two services involves a one on one encounter with a health worker who usually offers counseling services geared to perpetuating behavior change among the women. So it is probable that the issues of Cervical Cancer Screening are hinted on during these sessions. Secondly, in public health centers in Uganda, it is a common structural set up that family planning services are provided in the same room as cervical cancer screening and therefore it is likely that when women went for contraceptive services, they were also advised about taking a cervical cancer screening test as well by the family planning service providers.

Reports by Nwankwo, et al. (2011), also indicated family planning health professionals recommending cervical screening to rural and urban African women in Nigeria. The study further reported that all the women who had accessed screening services had done so because of a recommendation from a health professional (Nwankwo, et al., 2011), indicating that opportunistic cervical screening is common among women from Africa. This suggests that women from such backgrounds may be more familiar with opportunistic cervical screening and less aware of organized cervical screening. Similarly, evidence from ethnically diverse black women in New Jersey, USA indicated that women were more motivated to screen when doctors recommend the test (opportunistic screening) (Brown, et al., 2011). Some of the women in this
current study could have been motivated and complied with the testing procedures when health professionals recommended the test. Similar predictors for cervical cancer screening have been reported in previous studies. Indeed, studies carried out in Uganda (Cunningham, 2015), Jamaica (Lyimo, 2012) and the United States (Twinomujuni, 2015) found that women who had been recommended for screening by a health worker were more likely to be screened. Other studies found an association between awareness of cervical cancer services and undergoing screening (Lyimo, 2012; Hatcher, 2009).

The results of this study further showed that women who were residents of rural areas had higher likelihood of up taking Cervical Cancer Screening services. This is different from the results of Mupepi et al. (2011) who contrasted the screening behaviors of women living in urban areas with those of women living in rural areas of Zimbabwe and showed that about 91% of the women from rural areas had never in their lifetime participated in cervical cancer screening programs, and only 4.5% were likely to undergo screening in the future. In Mupepis’s study, women who lived in very remote rural areas were about 96% less likely to participate in screening than those who lived in the urban areas. The difference between Mupepis’ study and the current study is that for Mupepi, the study was done in a setting were the largest portion was very remote and so his results were so skewed towards the rural women as opposed to the current study which was in more of un urban setting were even the rural areas were in close proximity to the municipality.

The finding that rural women Hoima were more likely to up take the services is because of the more time that women in rural areas usually have that they can use to seek health services whether sick or not compared to urban women who are most times engaged in formal employment or work, that inhibits them to go to a health facility more so at free will just for check as in the case of cervical cancer screening.
5.3 The level of knowledge on cervical cancer among women of reproductive age group in Hoima municipality, Hoima district

The level of knowledge was found to be low in this study, only a quarter of respondents (25.9%) were knowledgeable about carcinoma of the cervix screening, its risk factors and prevention practices. In developed countries the level of knowledge was found to be high. In studies done in Kuwait (Sairaf, 2009) and London (Yu, 1998), 52% and 76% of respondents were knowledgeable respectively. However, in Dar-es Salaam, Ilala District, awareness was found to be high as three quarters of the respondents were aware of carcinoma of the cervix (Chande, 2010). This can be explained by the fact that Ilala is more of an urban area where people are much more exposed to health facilities, screening services and varieties of news media and hence causing the difference of awareness between this area and where the study was done, which is an upcountry area.

Similar to the findings of the current study, a study conducted among female teachers in Nigeria by Adamu, et al. (2012) and another study conducted by Ndukwe, et al. (2013), among African-born immigrant women living in Washington D. C Metropolitan area in the USA observed low levels of knowledge about cervical cancer and the Pap smear test. For instance Adamu, et al. (2012), reported that only 10.1% of 89 female tertiary teachers were reported to have adequate knowledge about cervical cancer, while 3.4% had adequate knowledge about the Pap smear test. This single-method quantitative study, however, did not explain the knowledge content of the participants in terms of what they were able to recall about cervical cancer or the Pap smear test.

In our study, 88.8% women had "heard" about cervical cancer and screening. Similar results were reported by Tran et al. and Shrestha et al. in Korea and Nepal respectively (Tran, 2011) and
findings are similar to studies done in Cameroon by Tebeu et al. (Tebeu, 2008) and in Ethiopia by Yifru and Asheber (2008).

The risk factors to acquire carcinoma of the cervix were known by only a few of the respondents. The most common risk factor mentioned was smoking cigarettes. This finding is different from the finding in a study done in Ilala Municipality, Dares Salaam where the most common mentioned risk factors were early marriage and multiparity (Myriam, 2006). In a Niger survey, twenty two percent of the respondents could not list any risk factor for cervical carcinoma (Any, 2005), while in a study done in Ghana (Peter, 2009), the commonly mentioned risk factor by half of the respondents was multiple sexual partners, similarly to what was found in my study. The knowledge on risk factors is an important element in the prevention of cervical carcinoma. Knowing the risk factors can make someone avoid them and hence prevent herself from acquiring the disease. Knowledge on Risk factors was poor in this study and hence education on this important part with respect to prevention should be provided. Most of the women in this study mentioned cigarettes as the most the risk factor for cervical cancer. This means that the women associated cervical cancer to lung cancer, whose major risk factor is cigarette smoking an indicator of low knowledge about cervical cancer.

However, the findings of this study show that there was no significant association between knowledge about cervical cancer and the uptake of cervical cancer screening. Contrary to this finding, Mupepi, et al. (2011), surveyed Zimbabwean-born women and found that women who had knowledge about the Pap smear test were more likely to access cervical screening compared to those who had no knowledge of the test. Knowledge about cervical screening guidelines was also found to be a significant predictor of Pap smear testing among Korean-American women living in Maryland, USA (Juon, et al., 2003).
Like this study, some previous studies are also testament that knowledge may not necessarily result in to practice (Gharoro, 2006; Ayinde, 2003) as intermediary factors like attitudes may play an important role in formulating behavior (Waller, 2004). This means the level of knowledge about cervical cancer among women in Hoima district did not affect the way they sought cervical cancer screening services because their health seeking behavior could have been impacted by other factors like the perceptions of severity of cervical cancer, susceptibility to cervical cancer or benefits of going for screening.

5.4 The health service related factors influencing the uptake of cervical cancer screening among women of the reproductive age in Hoima municipality, Hoima district

The findings of this study show that health service related determinants had a very significant influence on the uptake of cervical cancer screening services as almost all other were significantly related to the uptake of the services. It has already been cited in literature that institutional factors have also been shown by different studies to be influencing uptake of cervical cancer screening. According to International Agency for Research on cancer Organization (2003), uptake of screening is increased when the governments ensure that there is an organized screening program in place.

The results show that women who were positive about the presence of cervical cancer screening sites set up in the community were 1.7 times more likely to uptake cervical cancer screening services. It was further found that women who reported that cervical screening services were being provided by health facilities in the municipal and women who mentioned that health workers came to the community and taught about cervical cancer and women who said it was easy to get maternal health services from the health services in the municipal more likely to
uptake cervical cancer screening. These findings combined opine the issue of availability and accessibility of cervical cancer screening services.

As mentioned earlier, community outreach activities are some of the most practiced and implemented health promotion activities in developing countries, and almost certainly the most effectual strategies employed by health care workers, researchers, and health promotion officers. Community outreach programs comprise the use of suitable language resources (brochures, placards, charts etc.), involvement of a multitude of health workers, and holding of demonstrations at community and workplace place level. Several studies report that the involvement of the community is successful in the growth, preparation, and deliverance of the cervical cancer screening service programs (Eng et al., 1997, Zavertnik, 1993). Therefore without community outreaches, a mother cannot appreciate the presence or even the significance of a service and therefore they end up not using that service. This explains why women in whose communities CCS service outreaches were not organized were less likely to use the services.

The results of this study showed that there were higher odds of being screened among women who had ever been referred for cervical cancer screening by health workers working in the municipality. This is similar to a study by by Ndlovu (2013) were: being recommended for screening by a health worker, was related to higher uptake of screening. Indeed, studies carried out in Uganda Cunningham, (2015), Jamaica (Lyimo, 2012) and the United States (Twinomujuni, 2015) found that women who had been recommended for screening by a health worker were more likely to be screened. This is because women like all other patients put their trust in what their health service providers tell them and therefore, being referred by a health worker for screening would be taken with utmost seriousness and such a referred woman who without hesitation go for screening. Secondly, before referral, it is normal practice that a health
worker educates the woman and then gives her the reasons for referral, this also creates more assurance.

The women who waited for maternal health services for less than 30 minutes at any of the facilities in the municipality were found to be better up takers of maternal health services. This is similar to the findings of Nene (2007) and Ncube (2015). Waiting time has always been pointed out as a barrier to health services utilization because long waiting times in a queue or in a waiting area at a health center is considered as discomforting especially for health services that are perceived as non-mandatory like cervical cancer screening. Therefore, if a woman perceives that she will have to spend more than an hour waiting to see a health worker, they can reconsider and decide not to go there until an urgency emerges, hence low uptake.
CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This final chapter shows the conclusions made on each key finding for every objective, and also the recommendations still based on these key findings.

6.2 Conclusion

Cervical cancer screening uptake among women in Hoima municipality is very low, with only 2 out every ten women up taking the screening.

Four socio demographic characteristics are significantly associated with cervical cancer screening uptake among women in Hoima municipality, they include; parity of the women, ever going for voluntary counseling and testing, ever using any form of contraception and the residence of the women.

Majority of the women in Hoima municipality have low knowledge about cervical cancer. However, the level of knowledge about cervical cancer does not have a statistically significant influence on the uptake of cervical cancer screening.

Almost all the health facility related factors have a significant influence on cervical cancer screening up take; they include the presence of cervical cancer screening sites set up in the community, education about cervical cancer screening by health workers, ever been referred for cervical cancer screening by health workers working in the municipality, the ease of getting maternal health services from the health services in the municipal, provision of cervical
screening services by health facilities in the municipal, health workers to the community teaching about cervical cancer, and waiting time for maternal health services at any of the facilities in this municipality.

6.3 Recommendations

i. The community outreach programs for cervical cancer screening should be strengthened by the district health office as these have been found to increase uptake of screening services.

ii. Cervical cancer screening education and counseling by health workers should be made a fundamental component of every interaction between clients (women) and health service providers at every given opportunity for example consultation or reviews. This can be done through asking the eligible female patients about their cervical cancer screening history, and thereafter giving them with more information and support, and recommending them to access cervical cancer screening services.

iii. Efforts by health workers to promote cervical cancer screening among women should focus on informing women of their susceptibility to cervical cancer and encouraging a belief that active and regular screening can detect the pre-cancerous stage, hence enabling early treatment and prevention of cancer development.

iv. Some of the women in this current study could have been motivated and complied with the testing procedures when health professionals recommended the test. In this context, opportunistic cervical screening could be integrated into other aspects of healthcare delivery services for communities in Hoima municipality, in order to broaden information outlets and increase participants’ access to information and testing.
v. It is also recommended that for health care facilities where cervical cancer screening services are unavailable, either permanently or temporarily, the health care workers in those health facilities in such facilities should endeavor to refer any cervical cancer screening service seeking woman to another center which offers such services.

vi. Waiting time came out as one of the barriers to cervical cancer screening service uptake, to reduce on the waiting therefore, it is recommended that the district health office through the ministry of health recruits more staff providing screening services are recruited and deployed at health facilities in Hoima municipality. This will increase the health worker to female patients ratio and increase the speed at which service delivery is done hence reducing waiting time. Secondly, at the respective cervical cancer screening services providing health centers, the service outlets could be increased from one to at least two or three service provision points; this will also reduce waiting time.
REFERENCES


AGAM B BANSAL, ABHIJIT P PAKHARE, NEELKAMAL KAPOOR, RAGINI MEHROTAR, ARUN MAHADEO KOKANE (2015). Knowledge, attitude, and practices related to cervical cancer among adult women: A hospital-based cross-sectional study. Department of Community and Family Medicine, All India Institute of Medical Sciences, Bhopal University, Bhopal, Madhya Pradesh, India


operational and clinical aspects according to HIV status. BMC Public Health. Retrieved from http://www.biomedcentral.com/1471-2458/12/237 [PMC free article]


Carey P, Gjerdingen DK. Follow-up of abnormal Papanicolaou smears among women of different races J Fam Prac 1993; 37: 583-587


Gynaecological Oncology. 1, pp. 11-13.


http://www.cdc.gov/cancer/cervical/


MOSUNMOLA ADEYEMI .(2013). Factors Affecting Cervical Cancer Screening Among African Women Living in the United States. Walden University College of Health Sciences


NDLOVU BEAUTY HLENGIWE (2011). Awareness, knowledge and experiences of women regarding cervical cancer in rural kwazulu-natal, South Africa. Stellenbosch University


http://dx.doi.org/10.2471/BLT.06.031195


Peter N. Abotchie, MPhil and Navkiran K. Shoka, Cervical Cancer Screening Among College Students in Ghana: Knowledge and Health Beliefs, Int J Gynecol Cancer. 2009 April; 19(3): 412–416


TEBEU PM, MAJOR AL, RAPITI E, PETIGNAT P, BOUCHARDY C, SANDO Z, ET AL. The attitude and knowledge of cervical cancer by Cameroonian women; a clinical survey conducted in Maroua, the capital of Far North Province of Cameroon. Int J Gynecol Cancer 2008;18:761-5.


APPENDIX I: CONSENT FORM

Research Title: Determinants of cervical cancer screening uptake among women of reproductive age in Hoima municipality – Hoima district

Principal Investigator: Ramathan Nsubuga

Organization: International Health Sciences University

Supervisor: Alima Kyomuhangi

Introduction

I am Ramathan Nsubuga, a Masters student at the International Health Sciences University. I am doing a research on determinants of cervical cancer screening uptake among women in Hoima municipality. I am going to give you information related to the survey and invite you to be part of this research. You do not have to confirm your participation today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

There are words that you may not understand. Please let me know by asking me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask me.

Purpose of the research

The purpose of this study is to determine the factors that influence knowledge and uptake of cervical cancer screening among women. The findings will be used by the policy makers to make decisions regarding cervical cancer prevention and treatment among women in Hoima and Uganda.
**Type of Research Intervention**

This is a cross-sectional survey and will involve use of a questionnaire which will be administered by the investigator and the research assistants.

**Participant selection**

You were selected at random to participate in the study. Other participants were also selected randomly and they are women who reside in Hoima municipality.

**Voluntary Participation**

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. You may change your mind later and stop participating even if you agreed earlier.

**Confidentiality**

We will protect information that you provide about you and your decision to take part in the research to the best of our ability. A code will be used on the questionnaire and your name will not appear anywhere in the reports. After data collection all questionnaires will be securely stored and access will be to the research team only.

**Sharing the Results**

The results of this research will be shared with you through feedback meetings before it is made available to other people. Confidential information will not be shared.

**Possible Risk and Benefits**

There are no known risks that you will be exposed to by participating in this study. There will be no direct benefits to the participants. However, the findings will be communicated to
keystakeholders in the county to be able to make key decisions in regards to cervical cancer prevention and early detection.

**Right to Withdraw**

You do not have to take part in this research if you do not wish to do so. You may also stop the interview at any point if you so wish to. It is your choice and all of your rights will still be respected.

**Who to contact**

This research has been reviewed and approved by International Health Sciences University Ethics Review Committee, which is a committee mandated to make sure that research participants are protected from harm.

Do you have any questions?
INFORMED CONSENT FORM

I confirm that the information above was read and explained to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction.

I hereby consent to participate as a participant in this research.

Name of Participant_________________

Signature of Participant/Thumb print _________________

Date ___________________________

Day/month/year
APPENDIX II: QUESTIONNAIRE

Part 1: Socio demographic characteristics of the respondents

1. In which age bracket do you belong?
   
   1. 18 – 25
   2. 26 – 33
   3. 34 – 41
   4. 42 – 49
   5. More than 49 years

2. What is your Religion?
   
   1. Catholic
   2. Anglican
   3. Muslim
   4. Born again
   5. SDA
   6. Others

3. What is your marital status?
   
   1. Married
   2. Single
   3. Divorced / separated

4. What is your Education level?
   
   1. No formal education
2. Lower primary (P1 – P4)
3. Upper primary (P5 – P7)
4. Secondary
5. Tertiary level

5. What is your parity?

1. One
2. Two
3. Three
4. Four
5. More than four

6. What is your occupation?

1. Housewife
2. Business person
3. Civil servant
4. Other ...........................................................

7. How many members do you have in your household?

1. 1 – 5
2. 6 – 10
3. More than 10

8. Have you ever gone for voluntary counseling and testing?

1. Yes
9. Have you ever used any form of contraception?
   1. Yes
   2. No

10. How would you describe your residence?
   1. Rural
   2. Urban
   3. Peri urban

**Part 2: Cervical cancer screening uptake**

11. Have you ever been screened for cervical cancer?
   1. Yes
   2. No

**Part 3: Awareness about cervical cancer**

12. Have you ever heard of cervical cancer screening?
   1. Yes
   2. No

13. Can cervical cancer be prevented?
   1. Yes
   2. No
3. Don’t Know

14. Cervical cancer can be prevented through the following methods. Please tick all that apply

1. Vaccination with HPV vaccine
2. Routine Screening
3. Limiting the number of sexual partners
4. Not smoking and avoiding secondhand smoke.
5. Using a condom if one is sexually active
6. Following up on abnormal screening results

15. Have you heard about the cervical cancer vaccine?

   1. Yes
   2. No

16. Where is cervical cancer screening done?

   1. At the hospital
   2. At the health center IV
   3. At the health center III
   4. At all health facilities

17. At what age of is cervical cancer screening started?

   1. Below 20 years
   2. At 30 years
   3. At 40 years
   4. Others………………………………………………….
<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Strongly disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The following may increase a woman’s chance of developing cervical cancer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection with Human Papillomavirus (HPV)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking cigarettes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having a weakened immune system (e.g. Having HIV, Transplant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term use of contraceptive pill</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection with sexually transmitted infections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having a sexual partner who is not circumcised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting to have sex at young age (before 17 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having many sexual partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The following may be warning signs for cervical cancer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal bleeding between periods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persistent lower back pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A persistent vaginal discharge that smells unpleasant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discomfort or pain during sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menstrual periods that are heavier or</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part 4: Health facility determinants

18. What distance do you have to travel in order to reach the nearest health facility in this municipality?

1. < 1 km
2. 1 – 3 km
3. 4 – 6 km
4. More than 6 km

19. Have there been cervical cancer screening sites set up in this community by Hoima hospital?

1. Yes
2. No

20. When you go to any of the health facilities in this area for services, do the health workers educate you about cervical cancer screening?

1. Yes
2. No
21. Have you ever been referred for cervical cancer screening by health workers working in this municipality?
   1. Yes
   2. No

22. How easy is it to get maternal health services from the health services in this municipality?
   1. Very easy
   2. Easy
   3. Not easy at all

23. Do the health facilities in this municipality provide cervical screening services?
   1. Yes
   2. No

24. Have health workers to this community to teach you about cervical cancer?
   1. Yes
   2. No

25. For how long does a woman have to wait for maternal health services at any of the facilities in this municipality?
   1. Less than 30 minutes
   2. 30 minutes – 1 hour
   3. More than 1 hour
APPENDIX III: CORRESPONDENCE LETTER

To: Lee Mpao &
Bujumbura Division

Dear Sir/Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.

This is to introduce to you Nsubuga Ramathan Reg No. 2014-MPH-WKND-002 who is a student of our University. As part of the requirements for the award of a Masters’ Degree of Public Health, the student is required to carry out field research for the submission of a Research Dissertation

Ramathan would like to carry out research on issues related to: Determinants of Cervical Cancer Uptake Among Women of Reproductive Age in Hoima Municipality Hoima District.

I therefore request you to render the student such assistance as may be necessary for research.

I, and indeed the entire University are thanking you in anticipation for the assistance you will render to the student.

Sincerely Yours,

Alege John Bosco
Dean, Institute of Public Health and Management