CHALLENGES TO VISUAL CERVICAL CANCER SCREENING SERVICE INTERGRATION AND UTILIZATION IN IMENTI SOUTH SUB-COUNTY REPRODUCTIVE HEALTH CARE SYSTEM, MERU COUNTY, KENYA

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Q139/22979/2011

A RESEARCH THESIS SUBMITTED FOR THE DEGREE OF MASTER OF SCIENCE (REPRODUCTIVE HEALTH) IN THE SCHOOL OF PUBLIC HEALTH OF KENYATTA UNIVERSITY.

JUNE 2016.
DECLARATION
This thesis is my original work and has not been presented for a degree or other award in any other university.

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SUPERVISORS APPROVAL
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DEDICATION
The success of this work was born through the inspiration of the departed soul of my beloved sister Naomi Karimi, may her soul rest in eternal peace. This work is dedicated to all people who, in one way or the other spend their time working towards eliminating reproductive tract cancers among women.
ACKNOWLEDGEMENT

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TABLE OF CONTENTS

COVER PAGE ................................................................. i
DECLARATION ........................................................................ ii
DEDICATION ...................................................................... iii
ACKNOWLEDGEMENT ................................................................ iv
TABLE OF CONTENTS ............................................................... v
LIST OF TABLES .................................................................. ix
LIST OF FIGURES .................................................................... x
ABBREVIATION AND ACRONYMS ................................................ xi
DEFINITION OF TERMS ............................................................ xiii
ABSTRACT ........................................................................... xv

CHAPTER ONE: INTRODUCTION ......................................................... 1
1.1 Background of the Study ....................................................... 1
1.2 Problem Statement ............................................................. 2
1.3 Justification of the Study ....................................................... 3
1.4: Research Questions ........................................................... 3
1.5: Null Hypothesis .................................................................. 3
1.6: Study Objectives ............................................................... 4
1.6.1: Broad Objective .......................................................... 4
1.6.2: Specific Objectives ....................................................... 4
1.7 Scope of the Study ............................................................. 4
1.8 Study Limitations ............................................................... 4
1.9 Study Assumptions ............................................................ 5
1.10 Conceptual Framework ...................................................... 5

CHAPTER TWO: LITERATURE REVIEW ........................................... 6
2.1 Overview of Cervical Cancer .................................................. 6
2.2 Overview of Cervical Cancer Screening Procedures ....................... 7
2.2.1 HPV-DNA Testing ......................................................... 7
4.3 Proportion of study population utilizing visual cervical cancer screening service in Imenti South sub-county. ................................................................. 25

4.4 Influence of respondents’ socio-demographic characteristics and RH factors on utilization of visual cervical cancer screening service ........................................... 25

4.4.1 Association of Respondents’ demographic characteristics and utilization of cervical cancer visual screening service ........................................................... 25

4.4.2 Respondents’ reproductive health factors influence on utilization of cervical cancer visual screening service .................................................................................. 26

4.4.3 Influence of Respondents’ partner on visual cervical cancer screening service utilization ........................................................................................................... 28

4.5 Influence of facility based factors on utilization of visual cervical cancer screening service ........................................................................................................... 29

4.6 Assessment of visual cervical cancer screening service Integration in Imenti South Sub-County ............................................................................................................. 30

4.6.1 Available visual cervical cancer screening resources at the RH clinics ............... 31

4.6.2 Cervical cancer screening and treatment methods available in the six sampled Health facilities ....................................................................................................... 31

4.6.3 Proportion of health care providers skilled to provide VCCS service ................. 32

4.7 Hypothesis Testing ............................................................................................... 32

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS ........................................................................................................ 33

5.1 DISCUSSION ........................................................................................................ 33

5.1.2 Respondents’ demographic characteristics ....................................................... 33

5.1.3 The influence of respondents’ socio-demographic factors on utilization of VCCS service ........................................................................................................... 34

5.1.4 The proportion of respondents utilizing visual cervical cancer screening service ... 36

5.1.5 The influence of respondents’ reproductive health factors on utilization of VCCS service ........................................................................................................... 37

5.1.6 The influence of health facility factors on utilization and integration of VCCS service ........................................................................................................... 40

5.2 CONCLUSION ...................................................................................................... 45
5.3 RECOMMENDATIONS .................................................................................................46
5.4 Further Research ........................................................................................................47
REFERENCES ..................................................................................................................48
APPENDICES ....................................................................................................................52
APPENDIX I:  CONSENT FORM ......................................................................................52
APPENDIX II: RESPONDENTS QUESTIONNAIRE .........................................................53
APPENDIX III: FOCUSED GROUP DISCUSSION QUESTIONNAIRE ..............................57
APPENDIX IV: A CHECK LIST FOR AVAILABLE RECOMMENDED RESOURCES FOR VISUAL CERVICAL CANCER SCREENING .........................................................59
APPENDIX V: MAP OF IMENTI SOUTH SUB-COUNTY ..................................................60
APPENDIX VI: NATURAL HISTORY OF CERVICAL CANCER ......................................61
APPENDIX VII: INTERPRETING VISUAL CERVICAL CANCER SCREENING RESULTS AS WHETHER POSITIVE OR NEGATIVE (RESULTS FOR VIA AND VILI) ..........................................................62
APPENDIX VIII: VILI RESULTS INTERPRETATION CHART ......................................63
APPENDIX IX: RESEARCH AUTHORIZATION FORM ...................................................66
APPENDIX X: KENYATTA UNIVERSITY ETHICAL REVIEW COMMITTEE PERMIT ........................................................................................................67
APPENDIX XI: NATIONAL COMMISSION FOR SCIENCE TECHNOLOGY AND INNOVATION PERMIT ........................................................................................................68
LIST OF TABLES

Table 3.1: Independent variables .................................................................17

Table 3.2: Strata of health care facilities according to administrative divisions.................................................................19

Table 3.3: Sampled health facilities from each stratum, average number of clients attending reproductive health clinics per month and sample of respondents per facility..................................................................................20

Table 4.1: Socio-demographic characteristics of the study respondents ...............24

Table 4.2: Respondents’ demographic characteristics and utilization of visual cervical cancer screening service ..................................................................................................................26

Table 4.3: Significant Respondents’ reproductive health factors that influence utilization of visual cervical cancer screening service .................................................................28

Table 4.4: Respondents’ partner influence on visual cervical cancer screening service utilization .....................................................................................................................................29

Table 4.5: Influence of Reproductive health system factors on utilization of visual cervical cancer screening service ..........................................................................................................................30

Table 4.6: The extent to which VCCS service is integrated in RH clinics ............31
LIST OF FIGURES

Figure 1.1: Conceptual framework.................................................................5
Figure 4.1: Proportion Study population utilizing visual cervical cancer screening service in Imenti South sub-county .................................................................25

Figure 4.2: The influence of Respondents’ reproductive health factors on utilization of visual cervical cancer screening service .................................................................27

Figure 4.3: total number of health care providers verses Number of health care providers trained on visual cancer screening in the sampled RH clinics .........................32
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCP</td>
<td>Alliance for Cervical Cancer Prevention</td>
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<tr>
<td>AVSC</td>
<td>Access to Voluntary and Safe Contraception</td>
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<tr>
<td>CECAP</td>
<td>Cervical Cancer Prevention</td>
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<td>CIN</td>
<td>Cervical Intraepithelial Neoplasia</td>
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<td>COPE</td>
<td>Client Oriented Provider Efficient</td>
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<td>DNA</td>
<td>Deoxyribo - Nucleic Acid</td>
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<tr>
<td>DRH</td>
<td>Division of Reproductive Health</td>
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<tr>
<td>ECSA</td>
<td>East Central and South Africa</td>
</tr>
<tr>
<td>FIGO</td>
<td>International Federation of Gynaecology and Obstetrics</td>
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<tr>
<td>HIV</td>
<td>Human Immune Deficiency Virus</td>
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<td>HPV</td>
<td>Human Papilloma Virus</td>
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<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
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<td>KDHS</td>
<td>Kenya Demographic Health Survey</td>
</tr>
<tr>
<td>KII</td>
<td>Key Informant Interview</td>
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<tr>
<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
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<tr>
<td>MCH/FP</td>
<td>Maternal Child Health and Family Planning</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<td>MOMS</td>
<td>Ministry of Medical Services</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>MOPHS</td>
<td>Ministry of Public Health and Sanitation</td>
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<td>NCCPSP</td>
<td>National Cervical Cancer Prevention Strategic Plan</td>
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<td>PAHO</td>
<td>The Pan American Health Organization</td>
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<tr>
<td>PATH</td>
<td>Program for Appropriate Technology in Health</td>
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<td>RH</td>
<td>Reproductive Health</td>
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<tr>
<td>SD</td>
<td>Standard Deviation</td>
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<td>SIL</td>
<td>Squamous Intraepithelial Lesions</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Studies</td>
</tr>
<tr>
<td>STI</td>
<td>Sexually Transmitted Illnesses.</td>
</tr>
<tr>
<td>VCCS</td>
<td>Visual Cervical Cancer Screening</td>
</tr>
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<td>VIA</td>
<td>Visual Inspection with Acetic Acid</td>
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<td>VILI</td>
<td>Visual Inspection with Lugos Iodine</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>WHS</td>
<td>World Health Survey</td>
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<td>WKCCPP</td>
<td>Western Kenya Cervical Cancer Prevention Program</td>
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<td>HIMS</td>
<td>Health Information Management System</td>
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DEFINITION OF TERMS

Cervical cancer: This is a disease in which the cells of the cervix become abnormal and start to grow uncontrollably forming tumours (Invasive cancer).

Cervical cancer visual screening tests: These are screening tests that are employed to identify abnormal changes on the cells of the cervix. They rely on use of naked eyes after application of certain reagents on the cervix to note colour change on the surface of the cervix that is suggestive of either pre cancer lesions or invasive cancer or no change depending on the colour change on the cervix.

Challenge: Factors that cause difficulty or trouble in achieving a positive result or tends to produce a negative result; an impendent. In this study, this has been used to mean those factors that impend full integration and utilization of cervical visual screening (VIA/VILI) in all primary health facilities.

Client: Means a person or group of persons that use professional advice or services. In this study, this will be used to mean women attending reproductive health clinics to seek services offered at the clinic.

Facility: Something designed or installed for a specific purpose. In this study, this will be used to mean primary health care facilities that operate with the government of Kenya guidelines and have a functional reproductive health department.

Integration: Means combining parts so that they work together as one. Also means bringing services under one roof to ensure they are provided together. In this study, this has been used to mean including VIA/VILI cervical cancer screening tests in the reproductive health clinics to ensure it is offered routinely to clients together with other services offered at the clinic.
Reproductive health (RH) clinic: This is a department within the health care system that offers a range of reproductive health services to include; family planning, antenatal care, child welfare, post natal care and other obstetric and gynaecologic services. In Kenya, until recently, it has been known as maternal child health and family planning department (MCH/FP).

Screening: A strategy used in a population to detect a disease in individuals without signs or symptoms of that disease. It identifies those who have the characteristic of interest from those without. It is usually a simple test performed on a large number of people to identify those who have or are likely to have the disease of interest.

For the purpose of this study, this will be used to refer to cervical cancer visual inspection screening test by use of VIA/VILI to identify clients with pre-cancerous cells for treatment before it advances to invasive cervical cancer disease.

Utilization: means the act of using. In this study, this will be used to mean using visual cervical cancer screening (VIA/VILI) test by women attending reproductive health clinics.
ABSTRACT

Cancer is among the leading causes of morbidity and mortality worldwide with approximately fourteen million new cases and eight million cancer related deaths annually with an approximated 60 per cent of these new cases and 70 percent of these deaths occurring in Africa and other developing countries. Cervical cancer in particular has contributed a fair share of this burden. In Kenya, cervical cancer incidence and prevalence is second to breast cancer and leading cause of cancer related deaths among Kenyan women with most cases being diagnosed when it is too late for any interventions. The solution lies in early screening of women, with visual cervical cancer screening approach being the most feasible for low resource settings in developing countries. Kenya, in recognition of this piloted and adopted this screening approach in the year 2002 in efforts to integrate the screening approach in all the reproductive health clinics through formation of national cervical cancer prevention strategic plan with an aim of raising screening coverage to over 70 per cent. Despite this effort, the population of women screened remains alarmingly low with an estimated screening prevalence of only 3.2 per cent nationally. This cross-sectional study sought to identify challenges to visual cervical cancer screening service integration and utilization in Imenti South Sub-County, Kenya with the specific objectives of determining the proportion of respondents utilizing visual cervical cancer screening service, how respondents socio-demographic and reproductive health factors, facility based and system based factors influence integration and utilization of visual cervical cancer screening service. Six reproductive clinics were sampled for the study out of the nineteen in the Sub-County and a total of 354 respondents visiting the sampled reproductive health clinics. Questionnaires, checklist and key informant interviews were used to collect data. Chi-square and Fisher exact test were used to test significant associations with a $P \leq 0.05$ being considered significant while qualitative data was analyzed and discussed in key thematic areas. The sampled reproductive health clinics had the required screening resources, however only 20 per cent of the respondents had ever been screened for cervical cancer at the time of this study. The opportunistic screening approach, Low level of awareness, inexistence of a functional referral system, poor reporting, monitoring and supervision on visual screening were key screening challenges among others. The study concluded that, establishing clinical services alone will not achieve the desired screening target unless critical components are put in place to address the observed challenges in this study.
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Cancer is among the leading cause of death worldwide with an estimated 14 million new cases and 8 million cancer related deaths annually. More than 4 in 10 cancer cases occurring worldwide are in low and middle income countries (Ferlay et al, 2012). The number of new cases is expected to rise by 70 per cent over the next two decades (Mathers et al, 2011). In Kenya, cancer is ranks third cause of death after infectious and cardiovascular diseases with 7 per cent of total annual mortality (KEMRI, 2006).

Cervical cancer is second commonest cancer among women after breast cancer with prevalence ratio of 34:100,000 for breast cancer and Cervical 25:100,000 for cervical cancer. Over 90 per cent of cervical cancer burden occurs in developing countries (Bruni et al, 2015). Cervical cancer is leading in case mortality rate among cancer in women in developing countries.

Kenya has an incidence of 4,802 and 2451 deaths from cervical cancer annually. It is projected that by the year 2025, the annual incidence and mortality will have doubled if no measures are put in place to reverse the current trend (Bruni et al, 2015). Secondary prevention and early diagnosis remains the only feasible approach to reverse the incidence and mortality trends. The challenge has been late diagnosis when the disease had already advanced and possibly spread to other parts of the body. Screening programmes have proved effective in developed countries resulting to a significant fall in cervical cancer incidence and mortality. While developed countries have employed cytology based screening approach, developing countries lack the capacity to implement and sustain cytology based screening approach that is resource
demanding (Sankaranarayanan et al., 2001). A new screening initiative through the visual approach that is less resource demanding has given a breakthrough in cervical cancer screening in developing countries. The visual cervical cancer screening approach has a high sensitivity decreasing the chances for false negative results. The approach has been recommended for implementation in low resource settings where health care cannot sustain cytology based screening approach (Sankaranarayanan et al., 2001). Kenya piloted and adopted the visual cervical cancer screening (VCCS) approach in the year 2004 with an aim of integrating the screening approach in all the reproductive health (RH) clinics to raise the screening prevalence to over 70 percent through setting up a national cervical cancer prevention programme. The integration of screening in RH clinics implies that, as women seek other services in the clinic, they also get the opportunity to be screened for cervical cancer within the same clinic (PATH, 2002). The current estimated Kenya national cervical cancer screening prevalence is at 3.2 per cent (MOH, 2012).

1.2 Problem Statement
Despite the existence of Kenya National Cervical Cancer Prevention Strategic Plan – NCCPSP for over ten years, implementation of the national screening program is still low and haphazard. The screening prevalence is still very low with an estimated population of eligible women screened by 2012 at only 3.2 per cent. The reason why the screening program has failed to raise the screening to the expected target of 70 percent has not been established and lack substantial scientific explanation.
1.3 Justification of the Study
There is insignificant achievement in integrating visual screening in all RH clinics and raising screening coverage of screened women despite having a running cervical cancer prevention program for over 10 years. The 2012-2015 national cervical cancer prevention strategic plan was rolled out without any effort to establish the challenges experienced by previous strategic plans between 2002-2012. This study sought to establish the existing challenges within the reproductive health care system that impede screening of women at risk of cervical cancer with an aim of laying basis for an approach to address the challenges thus raising the screening coverage to the intended over 70 percent.

1.4: Research Questions
1. What proportion of the Women is utilizing visual cervical cancer screening service in Imenti south sub-county?

2. What influence do the client’s demographic and reproductive health factors have on utilization of visual cervical cancer screening service?

3. What facility based challenges influence utilization of visual cervical cancer screening service in Imenti south sub-county?

4. What RH care system challenges influence integration of visual cervical cancer screening service into the existing RH care system in Imenti south sub-county?

1.5: Null Hypothesis
There are no existing challenges to facility integration and client utilization of cervical cancer visual inspection screening test in Imenti south sub-county.
1.6: Study Objectives

1.6.1: Broad Objective
To establish the existing challenges within the reproductive health care system and among clients utilizing reproductive health services in Imenti south sub-county that influence integration and utilization of visual cervical cancer screening service.

1.6.2: Specific Objectives
1. To determine the proportion of the women utilizing visual cervical cancer screening service in Imenti South Sub-County.

2. To determine the influence of client’s demographic and reproductive health factors on utilization of visual cervical cancer screening service.

3. To determine the facility based challenges that influence utilization of visual cervical cancer screening service in Imenti south sub-county.

4. To examine the RH care system challenges that influence integration of visual cervical cancer screening service into the existing RH care system in Imenti south sub-county.

1.7 Scope of the Study
The scope of this study was to be limited to integration and utilization of only visual cervical cancer of screening.

1.8 Study Limitations
Lack of centralised data of women attending reproductive health clinics by age; the available data at the sub-county health information management system (HIMS) office was cumulative as per service hence impossible to categorize service users by age.
Since the study involved the entire sub-county, a lot of money was spent to meet the expenses incurred and a lot of time was required to ensure that, the study completed without compromising its reliability.

1.9 Study Assumptions
This study assumed that, all reproductive health clinics in Imenti south sub-county had integrated the screening services and that the service was being utilized by the clients attending reproductive health clinics as per the strategy.

1.10 Conceptual Framework
Reproductive health service delivery and utilization is largely influenced by three main components; health care delivery system, service users’ factors, and health care provider and facility factors. The service must first be integrated within the health care system, then demand created among the service users and finally the service delivery approach must be attractive, affordable, accessible and efficient.

![Conceptual Framework Diagram]

(Constructed from literature review)
CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of Cervical Cancer

The cervix is the lower part of the uterus, sometimes called the uterine cervix. It connects the body of the uterus with the vagina. The cervix has two parts; the endocervix (The part proximal to the uterus) mainly made up of glandular cells also referred to as the columnar epithelium and the exocervix (the part proximal to vagina) mainly made up of squamous cells also referred to as squamous epithelium. The junction where endocervix and exocervix meet is known as squamocolumnar junction. This forms an area known as transformation zone where cell dysplasia and cancer development occur before spreading to other parts as it advances (Kumar et al., 2010). Normal cells lining the cervix do not suddenly change into cancerous cells. Instead, the normal cells of the cervix first gradually develop into pre-cancerous cells (cervical intraepithelial neoplasia (CIN) or squamous intraepithelial lesions (SIL)) before progressing to true invasive cancer. Therefore, visual cervical cancer screening tests aims at identifying CIN before developing to true invasive cancer. CIN is not cancer and is usually curable (Apgar et al., 2009).
2.2 Overview of Cervical Cancer Screening Procedures

2.2.1 HPV-DNA Testing
Studies suggest that the HPV test detects more true-positive pre-cancer cases among women in their 30s and 40s than the Pap smear and could potentially serve as a better primary screening method (IARC, 2004). At the same time, performing the HPV test requires fairly sophisticated and expensive laboratory technology, including a special computer. The process takes about six hours and uses molecular techniques to detect the presence of HPV in cell samples. These requirements currently make the use of HPV screening test too costly and difficult to implement in most low-resource settings (FIGO, 2009).

2.2.2 Papanicoloau (Pap) Smear
The procedure involves gently scraping cells from the cervix onto a glass slide and sending it to a laboratory where technicians have been trained to analyze cell structure. Results of the analysis usually are communicated to women within several weeks (although in many settings it takes longer or women never receive their results). Women with low-grade abnormalities are told to return for periodic follow-up smears. For women with severe abnormalities, clinicians may examine the cervix with a special magnifying scope called a colposcope, obtain a tissue sample so a diagnosis can be made and then remove, or destroy abnormal tissue on the cervix (Blumenthal et al., 2007).

2.2.3 Visual Cervical Cancer Screening Approaches
Visual screening relies only on the naked eye of a trained clinician and some basic clinic supplies. These visual methods are mainly the VIA and VILI methods which in most times are combined (Sankaranarayanan et al., 2005).
Visual inspection with acetic acid (VIA) involves swabbing the cervix with an acetic acid (vinegar) solution and visual examination by a trained health provider. Precancerous cells have different structure and absorption rates than normal cells, making the abnormal cells temporarily turn white when exposed to this solution. In an effort to increase the accuracy of visual screening, some approaches have used an iodine solution to stain abnormal cells. Visual inspection with Lugol’s iodine (VILI) is also known as Schiller’s test because it is similar in approach to the Schiller’s iodine test that was advocated and widely used in the 1930s before the development of Pap smears. Applying iodine to the cervix makes precancerous lesions appear as well defined, thick, yellow- or brown-shaded areas.

Recent data show that visual screening with Lugol’s iodine may have higher accuracy than screening with acetic acid (Sankaranarayanan et al., 2008). Both of these visual approaches, using vinegar or iodine solutions, have important advantages in low-resource settings. Both approaches are relatively simple and low-cost, and rely on little infrastructure. Non physicians can perform the procedures, provided that they receive adequate training and supervision. Furthermore, results of the procedures are available immediately, making it possible, in principle, to offer treatment or referral options during the same visit (Bradley et al., 2004).

2.3 Overview of Cervical Cancer in Developed and Developing Countries
Of all the cancers, cervical cancer has been identified as the second most common among women with an annual incidence of 529,000 case (Ferlay et al., 2012). In fact, among annual cancer mortality among women, cervical cancer is the leading cause with 300,000 annual deaths from all the cases diagnosed (Ferlay et al., 2010).
Evidence shows that, over 80% of all these cases and mortality occur in low and middle income countries (Ferlay et al., 2010). In developing countries, about 300,000 deaths from cervical cancer occur each year compared to less than 40,000 deaths from the same cause in developed countries (Ferlay et al., 2010). The rates of the disease are highest in Mexico, sub-Saharan Africa, and Melanesia (IARC., 2004).

An important reason for the sharply higher incidence of cervical cancer in developing countries is the lack of effective screening programs to detect precancerous conditions and treat them before they progress to cancer (Sankaranarayanan et al., 2005).

### 2.4 Overview of Visual Cervical Cancer Screening in Kenya

Despite the overwhelming evidence that visual inspection approaches are the most feasible for low resource settings, the prevalence of women screened in developed countries continue to be far below expected coverage. In Kenya alone, it is estimated that less than 3.6% of women have been screened (WHO, 2010).

This comes at a time when cervical cancer incidence in the country is on the rise with approximately 2,454 cases diagnosed annually with over 80% of these cases diagnosed at an advanced stage of the disease. Out of these diagnosed cases, about 1,676 (approximately 70%) of them die within the same year (WHO, 2010).

The worrying fact is that, the diagnosed cases are just a tip of the iceberg since this represents only those cases that present at the health facilities after experiencing signs and symptoms of the disease and those opportunistically diagnosed while seeking other cervices (WHO, 2010).
Kenya, with a population at risk of developing cervical cancer standing at more than 10 million women (KNBS, 2009), and a projected incidence of over 4,261 annually by the year 2025 (WHO, 2010), immediate action is imperative to raise the screening prevalence from the current 3.6% to match that of developed countries.

To address the integration of visual approaches challenge, PATH, in its western Kenya cervical cancer prevention program (WKCCPP) developed a model in Busia district to establish the best practice approach of integrating visual cervical cancer screening approaches (VIA/VILI) in all the public and faith based health care facilities operating under the ministry of health guidelines. The model was very successful and found it very feasible to integrate VIA/VILI in the already existing reproductive health (RH) clinics (WKCCPP/PATH., 2002).

Following the overwhelming evidence of feasibility of VIA/VILI integration in existing RH clinics, the government of Kenya through the ministries of health has made numerous efforts to integrate the service in all the facilities without success (MOH, 2005). One of these efforts was, following the recommendations from WKCCPP, the ministry of health developed a National cervical cancer prevention strategic plan (NCCPSP 2002-2006) with the sole goal of integrating VIA/VILI in all primary health care facilities with additional diagnostic and treatment options in higher level facilities (MOPHS/MMS., 2009). Despite the existence of this NCCPSP for close to 10 years now, VIA/VILI integration and screening program still remain very low and haphazard with very few facilities in disjointed sites having integrated the service rather than a fully fledged national level program. This explains why screening coverage is still negligible (NCCPP, 2012).
Having attempted the same effort and failed previously, it is clear that there are existing challenges that hinder integration and utilization of VIA/VILI screening approach. It is only by identifying and addressing these challenges will the government succeed in its currently rolled out NCCPSP 2012-2015.

2.5 Overcoming Visual Cervical Cancer Screening Challenges in Kenya
A good visual cervical cancer screening program for cervical cancer must reach a significant proportion of women at risk of the disease, effectively test these women, treat or manage those who test positive, ensure they are followed up, and monitor and evaluate program impact (WKCCPP, 2002 /PATH, 2002/ MOH., 2005). In any setting, however, research and experience show that several key elements contribute to visual cervical cancer screening program success. These elements include; ensuring a minimum level of service delivery, integrating visual screening approaches with existing services, training providers, reviewing screening policies, meeting women needs, involving communities having information systems in place, monitoring and evaluation of screening programs and finally advocacy (ACCP, 2004/ PATH., 2000).

2.6 Overview of Challenges to Client Utilization of Visual Cervical Cancer Screening Services in Developing Countries
Strategies for introducing or strengthening cervical cancer screening/prevention programs by use of visual inspection approaches must focus on ensuring that appropriate, cost-effective services are available and that women who most need the services, in fact, use them (PATH., 2006).
2.6.1 Utilization Challenges Related to Socio-cultural Norms
Various studies have shown that, beliefs and attitudes towards the concept of disease screening and prevention influence service utilization. Utilization of preventive or screening services like visual cervical cancer screening service in settings where people tend to seek allopathic health care as a last resort and where understanding of prevention is sometimes limited like in most developing world countries has proved to be one of the biggest challenges for preventive services (Bingham *et al.*, 2001). Health promotion messages in prescreening counseling sessions, and outreach and awareness-raising activities among women and communities that provide culturally appropriate discussions about a woman’s anatomy and the concept of prevention and screening have been widely recommended to address these challenges (Engenderhealth., 2002).

Beliefs that cervical screening is related to sexually transmitted infections (STI) diagnosis as also been found to influence screening service utilization. Many women and their male partners, especially in rural areas, have a limited understanding of female reproductive organs and associated diseases. In many situations, women sometimes erroneously believe that cervical screening tests also are used to detect STIs or HIV, and thus, may decide not to get screened (EngenderHealth, 2002).

Studies have found that fears stemming from negative images of cancer and gynaecological care would also influence utilization of visual cervical cancer screening. Women in a variety of countries report to have powerful and quite frightening images of cancer. These fears may contribute to a woman’s reluctance to get screened. Images are associated with words such as “devour or eating”, “putridity”, or “plague” (PAHO., 2002).
Studies done in low resource settings have suggested the need for social support in visual cervical cancer screening programs. ACCP research to date suggests that women are more likely to be screened (and treated if needed) when services are offered through face-to-face visits by community health workers or when they hear about services through a women’s or church group (Agurto et al, 2001/PAHO., 2002).

Another key factor in a woman’s decision to participate in cervical cancer prevention services is her husband’s positive emotional and, if needed, financial support (PATH, 2002).

2.6.2 Utilization Challenges Related to the Service Delivery System
The reproductive health care system factors would also influence the utilization of visual cervical cancer screening service. The location of the service facility is an important determinant of participation (PATH, 2002) and the structure of the service delivery system. Cervical cancer prevention efforts around the world have for a long time required multiple visits for screening, confirmatory diagnosis, treatment, and follow-up, compounding both financial and opportunity costs to women and contributing to high attrition rates (PAHO, 2002/ACCP, 2004). A cost effective, safe and efficient approach that minimises the number of visits and where possible screening and treatment offered in the same visit has been recommended to overcome this challenge (ACCP, 2004/Agurto et al 2004).

In most developing countries, functioning tracking systems that ensure clients continue with treatment or additional visits are rare, and attrition is high. This results to very few women eligible for screening missing the screening and most of those screened and require treatment are lost on follow up (sankaranarayanan et al., 2003).
Need for information on cost of services and related costs influence a woman’s decision to be screened. Women often do not receive accurate information about the actual costs of services. Informing women on the cost of screening and where possible providing it for free improves utilization of screening services (ACCP, 2002).

2.6.3 Challenges Related to Quality of Care
Studies have showed the need for women-centered quality services as an important aspect to success of cervical cancer screening programs. Client-centered, high-quality services greatly improve utilization of screening services (Bingham et al., 2003). Such services result in satisfied women, who, in turn, are strong promoters of screening. These women also provide needed support to those having difficulty deciding whether to participate or whose male partners are unwilling to provide support (Agurto et al., 2001 / PAHO, 2002). The client-provider relationship greatly affects client satisfaction.

One-on-one communication between women and their providers is a critical dimension of quality care that often is overlooked (PATH., 2002). Studies have indicated that most women are generally reluctant to openly ask questions during group counseling sessions (EngenderHealth, 2002.) Most prefer individual time with the provider to ask potentially embarrassing questions about the procedures, address additional fears about adverse effects, and seek advice on how to talk to their spouses (EngenderHealth, 2002).

Other important dimensions of quality of care are the physical aspects of the facility, such as the appearance and cleanliness of the clinic and provider, and arrangements to assure maximum privacy during the examination (Gatune and Nyamongo, 2005).
Women in several settings also suggest improving privacy by minimizing the number of people coming into the examination room, having a dead bolt on a door, or having a privacy screen set up during the examination (Engender Health/PATH, 2002).

2.7 Summary of Gaps
Many studies have been carried out on the most effective screening approach for low resource settings and numerous recommendations have been made supporting feasibility of visual cervical cancer screening approaches in low resource settings. As a consequence, over the last decade, numerous efforts have been made to roll out visual cervical cancer screening programs seeking to raise screening coverage of women at risk of cervical cancer in low resource settings. However, despite the efforts, the screening coverage has remained constantly low. Little efforts have been made to evaluate the already implemented programs that failed to raise the coverage. With more and more programs being rolled out with no success, the challenges to why the programs have failed to raise the coverage need first to be established and addressed before more resources can be channelled into such programs.
CHAPTER THREE: METHODS AND MATERIALS

3.1 Research Design
This was an observational cross-sectional study. The study generated both qualitative and quantitative data. A preliminary survey was conducted to establish the administrative divisions in the sub-county and the number of health care facilities with reproductive health clinics operating under ministry of health guidelines and the respective divisions each facility falls. The preliminary survey also sought to establish the total number of women at risk of developing cervical cancer and eligible for screening within Imenti south sub-county and the average number of clients attending reproductive health clinics in a month per facility within the sub-county and the number of clients screened for cervical cancer using visual inspection within the sub-county per month. The purpose of the preliminary survey was because such information was nonexistent at the time the study was being conducted.

3.2 Study Variables

3.2.1 Dependent Variable
The dependent variables for this study were visual cervical cancer screening integration and utilization. Integration aspect comprised components recommended in the national cervical cancer screening strategic plan 2012 – 2015 as mandatory for screening service to be regarded as an integrated service. These components includes; Availability of the recommended Visual screening human and non-human resources, routine screening for all eligible women as they utilize other services within the RH clinics, functional referral and follow – up mechanism, functional monitoring and supervision of the program and functional screening reporting system.
3.2.2 Independent Variables

The independent variables were as shown on table 3.1:-

Table 3.1: Study Independent Variables

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Demographic characteristics</td>
<td>Age, Education level, Marital status, Monthly income levels,</td>
</tr>
<tr>
<td>Respondent Reproductive Health factors</td>
<td>Number of RH clinic visits within 3yrs, Awareness of existence of VCCS services, Self risk perception for cervical cancer, Partner influence</td>
</tr>
<tr>
<td>Proportion utilizing VCCS service</td>
<td>Respondent cervical cancer screening status</td>
</tr>
<tr>
<td>Facility based Factors</td>
<td>Privacy during RH procedures, Gender of VCCS service provider, Cost of VCCS service, availability of skilled VCCS service provider, availability of VCCS screening resources, mode of VCCS service delivery.</td>
</tr>
<tr>
<td>RH system Factors</td>
<td>Availability of VCCS policy guidelines, availability of functional referral system, availability of functional VCCS upward Reporting system, availability of a functional monitoring, evaluation and supervision system</td>
</tr>
</tbody>
</table>

3.3 Location of the Study

This study was carried out in Imenti south sub-county, Meru County. Meru County falls in the former Eastern province, around 250 kilometres from the capital city Nairobi. The sub-county is divided into six functional administrative divisions namely; Nkuene, Mitunguu, Abogeta East, Abogeta West, Igoji East, and Igoji west. The sub-county has a total population of 179, 604 persons with 90, 291 males and 89,313 females. Out of the total 89, 313 female populations in the sub-county, the total population of women between age 25-49 years is 29,419 women (33% of total women population in the sub-county.)
Out of the total 89,313 female population in the sub-county, 82,722 (92.62% of total female population in the sub-county) live in the rural set up and only 6,591 (7.38% of the total sub-county female population) live in urban setup (KNBS, 2009). Imenti South sub-county was purposively selected due to its large population of women aged 25 years to 49 years eligible for cervical cancer screening (33% of total women population), with largest population living in rural setting (92%) who are the prime target for the visual cervical cancer screening approach.

3.4 Study Population
This consisted women of reproductive age eligible for screening according to the national guidelines (from age 25-49 years) attending reproductive health clinics. Therefore, the study respondents were recruited from women attending antenatal care clinics, family planning clinics, postnatal clinics, gynaecology clinic and women bringing children to child welfare clinics, which constitute the departments within the reproductive health clinic. The sub-county monthly reproductive health clinic attendance was 7,563 clients.

3.5 Inclusion Criteria
Women of reproductive age attending reproductive health clinics from age 25-49 years and were willing to participate in the study and consented.

3.6 Exclusion Criteria
Those excluded in the study consisted women not willing to participate in the study, women already diagnosed with cervical cancer, women diagnosed with mental illness due to unreliability of interview responses and women requiring emergency medical attention at the reproductive health clinic.
3.7 Sampling Techniques
Probability sampling technique was employed in this study which included stratified random sampling for the administrative divisions and simple random sampling for health facilities in each stratum and systematic random sampling for respondents in each health facility sampled was employed to recruit study respondents. The total number of health facilities with a functional reproductive health clinic in the six Sub-County administrative divisions were 19 as shown on table 3.2.

Table 3.2 Strata of Health Care Facilities According to Administrative Divisions

<table>
<thead>
<tr>
<th>Administrative division</th>
<th>Health Facilities with RH clinics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nkuene</td>
<td>1. Mikumbune Sub-district hospital</td>
</tr>
<tr>
<td></td>
<td>2. Consolata Mission hospital</td>
</tr>
<tr>
<td></td>
<td>3. Uruku Health centre</td>
</tr>
<tr>
<td></td>
<td>4. Nkubu dispensary</td>
</tr>
<tr>
<td>Mitunguu</td>
<td>1. Mitunguu Dispensary</td>
</tr>
<tr>
<td></td>
<td>2. Mitunguu Hospital</td>
</tr>
<tr>
<td>Igoji East</td>
<td>1. St. Ann Hospital</td>
</tr>
<tr>
<td></td>
<td>2. Kathigu Health centre</td>
</tr>
<tr>
<td></td>
<td>3. Gitine Health centre</td>
</tr>
<tr>
<td></td>
<td>4. Mweru Dispensary</td>
</tr>
<tr>
<td>Igoji West</td>
<td>1. Kinoro Sub-district Hospital</td>
</tr>
<tr>
<td></td>
<td>2. Karia Dispensary</td>
</tr>
<tr>
<td>Abogeta East</td>
<td>1. Kanyakine Sub-county Hospital</td>
</tr>
<tr>
<td></td>
<td>2. Kithatu Dispensary</td>
</tr>
<tr>
<td></td>
<td>3. Kirogine Dispensary</td>
</tr>
<tr>
<td>Abogeta West</td>
<td>1. Ithimbari Dispensary</td>
</tr>
<tr>
<td></td>
<td>2. Kionyo Dispensary</td>
</tr>
</tbody>
</table>
A third of the total nineteen health facilities were sampled in Imenti South Sub – County (Kothari et al, 2006). Simple random sampling was used to select facilities from each of the six strata created along the sub-county administrative divisions.

**Table 3.3 Sampled Health Facilities and Respondents from each Stratum**

<table>
<thead>
<tr>
<th>Sampled facility from each Administrative Division</th>
<th>Average number of clients attending RH clinic per month</th>
<th>Proportion sample of respondents per facility RH clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td>731</td>
<td>86</td>
</tr>
<tr>
<td>Facility 2</td>
<td>367</td>
<td>43</td>
</tr>
<tr>
<td>Facility 3</td>
<td>413</td>
<td>48</td>
</tr>
<tr>
<td>Facility 4</td>
<td>603</td>
<td>70</td>
</tr>
<tr>
<td>Facility 5</td>
<td>681</td>
<td>80</td>
</tr>
<tr>
<td>Facility 6</td>
<td>243</td>
<td>28</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,038</strong></td>
<td><strong>355</strong></td>
</tr>
</tbody>
</table>

**3.8 Sample Size Determination**

The minimum sample size was determined using Watson formulae for sample size determination as applied below:-

\[
\text{n} = \frac{x(1-x)}{A^2 X(1-X)} \left( \frac{1}{N} \right)
\]  

(Watson, 2001)

Where:-

\(n\) = Base sample size.

\(N\) = Target population
X = Level of variability (population proportion) variability of 50% (or 0.5 in decimals)

Z = the standard normal deviate at the required confidence interval. In this case, it's considered to be 95% (1.96).

A = margin of error Or Degree of precision. In this case, 5% (0.05) was set.

RR = Response rate. In this case 96% was used (0.96)

\[ f_n = \frac{n}{RR} \]

Therefore:

\[ n = \frac{0.5(1 - 0.5)}{0.05^2 + \frac{0.5(1 - 0.5)}{1.96^2 + \frac{3038}{3038}}} \]

Base sample size = 341

Final sample size = \( f_n = \frac{n}{RR} \) which is 341/0.96 = 355 respondents

### 3.9 Data Collection Tools

Various methods of data collection were used due to the various type of data required in this study. These tools included respondent questionnaires that were used to collect data from sampled respondents attending reproductive health clinics. This was a semi structured researcher administered questionnaire.

Key informant interview schedules were used to collect data from the sub-county health offices for the sub-county medical officer of health and the head of the sub-county HIMS. Also an interview schedule for facility head of reproductive health clinics was used, and checklist at the reproductive health clinics for checking available screening resources was used.
3.10 Validity and reliability of tools
Before the actual data collection, the tools were pre-tested. This was purposely done to check for any ambiguity of the tools, any irrelevant questions or important questions omitted. After the pre-testing, necessary adjustments were made on the tools in readiness for the actual data collection. The pre-testing was done in a facility that was not among the sampled facilities for actual data collection. In this case, pretesting was done at Mikumbune sub-district hospital. To facilitate data collection, research assistants were trained and orientated on the tools in advance. The researcher utilized three assistants who had prior experience in interviewing patients/clients for familiarity purposes.

3.11 Data management and analysis
Cleaning and editing was done after every day of data collection. Storing and coding was done at the end of data collection from each facility. Data was collected from each facility at a time. At the end of data collection from all the six strataums, all the data was first entered and verified in Microsoft excel spreadsheet before being exported to SPSS for analysis. Chi-square ($x^2$) using 95% confidence level and Fisher exact Test was calculated to test for statistical significance of associations. Qualitative data was analysed in key thematic areas. Descriptive statistical analysis such as percentages was also used for analysis. Bar charts, pie charts and tables were used in data presentation.
3.12 Ethical consideration
Permission to undertake this study was sought from Kenyatta University ethical review committee, Ministry of higher education through national council of science and technology, Imenti south deputy county commissioner’s office, and Imenti south district health ethical committee.

Informed consent was sought from respondents and only those willing to freely participate were interviewed. The tools for data collection also did not bear any respondents details for confidentiality purposes.
CHAPTER FOUR: RESULTS

4.1 Introduction
This data was collected between August 2014 and January 2015 in six health facilities sampled within Imenti south sub-county. 320 out of 355 questionnaires were sufficiently completed and data subsequently analyzed while 35 out of 355 questionnaires could not be analyzed due to either missing information or contradicting information making a response rate of 90.14%.

4.2 Respondents’ Socio-demographic Characteristics
Table 4.1 shows majority of the respondents were aged ≤ 29 years (47%), secondary level of education (41%), married or had a sexual partner (92%), Self-employment was the main source of income (57%) with average monthly income for majority of the respondents was ksh 5000 – 10000 (49%).

Table 4.1: Socio-demographic Characteristics of the Study Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency(N=320)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&lt;29 years</td>
<td>150</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>30 -39 yrs</td>
<td>123</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>40 - 49 yrs</td>
<td>47</td>
<td>15</td>
</tr>
<tr>
<td>Level of education</td>
<td>≤ Primary</td>
<td>121</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>132</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Post-Secondary</td>
<td>67</td>
<td>21</td>
</tr>
<tr>
<td>Marital status</td>
<td>Married</td>
<td>234</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Partner but not married</td>
<td>60</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Source of income</td>
<td>Formal employment</td>
<td>60</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Self employed</td>
<td>182</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>78</td>
<td>24</td>
</tr>
<tr>
<td>Average monthly income</td>
<td>&lt;5000</td>
<td>52</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>5000 – 10000</td>
<td>158</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>&gt;10000</td>
<td>110</td>
<td>34</td>
</tr>
</tbody>
</table>
4.3 Proportion of study population utilizing visual cervical cancer screening service in Imenti South sub-county.

Figure 4.1 shows respondents’ cervical cancer screening status at the time of data collection was observed. (20%) of the respondents reported screening for cervical cancer in the past three years while the majority 80% had never been screened in their lifetime.

![Graph showing cervical cancer screening status](image)

Figure 4.1: Proportion Study population utilizing visual cervical cancer screening service in Imenti South sub-county

4.4 Influence of respondents’ socio-demographic characteristics and RH factors on utilization of visual cervical cancer screening service

The respondents’ socio-demographic and reproductive health factors were explored on their potential influence on utilization of visual cervical cancer screening service utilization and the following was observed.

4.4.1 Association of Respondents’ demographic characteristics and utilization of cervical cancer visual screening service

Table 4.2 presents the association of respondents’ socio-economic characteristics and utilization of visual cervical cancer services.
The respondents’ age, marital status, level of education, source of income and average monthly income were all significantly associated with utilization of visual cervical cancer screening service.

**Table 4.2: Respondents’ demographic characteristics and utilization of visual cervical cancer screening service**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency Screened or not screened (N=320)</th>
<th>chi2</th>
<th>Pvalue</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of respondent in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤29 years</td>
<td></td>
<td>yes (n=65)</td>
<td>no (n=255)</td>
<td>59.61</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>30 -39 yrs</td>
<td></td>
<td>16</td>
<td>134</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 - 49yrs</td>
<td></td>
<td>20</td>
<td>103</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤Primary</td>
<td></td>
<td>yes (n=65)</td>
<td>no (n=255)</td>
<td>27.77</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td>17</td>
<td>105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-secondary</td>
<td></td>
<td>19</td>
<td>112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>yes (n=65)</td>
<td>no (n=255)</td>
<td>10.70</td>
<td>0.005</td>
</tr>
<tr>
<td>Partner but not married</td>
<td></td>
<td>44</td>
<td>190</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>10</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>11</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source of income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>formal employment</td>
<td></td>
<td>yes (n=65)</td>
<td>no (n=255)</td>
<td>21.70</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Self employed</td>
<td></td>
<td>25</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>31</td>
<td>151</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>10</td>
<td>68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average monthly income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 5000</td>
<td></td>
<td>yes (n=65)</td>
<td>no (n=255)</td>
<td>16.48</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>5000 – 10000</td>
<td></td>
<td>9</td>
<td>43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;10000</td>
<td></td>
<td>20</td>
<td>138</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>36</td>
<td>74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.2 Respondents’ reproductive health factors influence on utilization of cervical cancer visual screening service

**Figure 4.2** shows that, majority of women (92%) had visited RH clinic more than once in three years with only 20% of them having utilized VCCS service representing a high missed opportunity for cervical cancer screening (78%).
Majority of women were unaware (56%) of existence of VCCS service within the reproductive health clinics. A significant proportion of women (44%) perceived no self risk for developing cervical cancer.

Only a small proportion with partners had previously discussed cervical cancer screening with their partner (13%) and majority willing to consider screening if partner requested them to screen (76%).

Figure 4.2: The influence of Respondents’ reproductive health factors on utilization of visual cervical cancer screening service
As shown in **Table 4.3**, all explored respondent RH factors, other than the number of times a woman visited reproductive health clinic in three years were significantly associated with utilization of visual cervical cancer screening service.

**Table 4.3: Significant Respondents’ reproductive health factors that influence utilization of visual cervical cancer screening service**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency Screened or not screened (N=320)</th>
<th>Fisher Exact Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of times respondent had visited RH clinic in 3 years</td>
<td>1st visit</td>
<td>yes (n=65)</td>
<td>0.037</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>≥ 2 visits</td>
<td>yes (n=65)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td></td>
</tr>
<tr>
<td>Respondent’s awareness on availability of VCCS service in RH clinic</td>
<td>Yes</td>
<td>yes (n=65)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td></td>
</tr>
<tr>
<td>Self Risk perception on development of cervical cancer</td>
<td>Yes</td>
<td>yes (n=65)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td></td>
</tr>
<tr>
<td>Willingness to utilize VCCS service in the current visit</td>
<td>Willing</td>
<td>yes (n=65)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>unwilling</td>
<td>yes (n=65)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td></td>
</tr>
</tbody>
</table>

**4.4.3 Influence of Respondents’ partner on visual cervical cancer screening service utilization**

As shown in **Table 4.4**, 92% of the respondents who were either married or had a partner, when asked whether they had ever discussed about cervical cancer screening with their partners, overall, 87% had never discussed cervical cancer screening with their partners. When asked for reactions if partner requested them to have a cervical cancer screening test, overall, 76% felt they would seriously consider the screening test if their partners requested while 22% felt it wouldn’t change anything.
Table 4.4 Respondents’ partner influence on visual cervical cancer screening service utilization

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency Screened or not screened (n= 294)</th>
<th>Fisher Exact Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Discussion with partner on utilizing VCCS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>24 (n=54)</td>
<td>13 (n=240)</td>
</tr>
<tr>
<td>Yes</td>
<td>30 (n=54)</td>
<td>227 (n=240)</td>
</tr>
<tr>
<td>Willingness to utilize VCCS if requested by partner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47 (n=54)</td>
<td>177 (n=240)</td>
</tr>
<tr>
<td>No</td>
<td>7 (n=54)</td>
<td>63 (n=240)</td>
</tr>
</tbody>
</table>

4.5 Influence of facility based factors on utilization of visual cervical cancer screening service

As shown of table 4.5, the reproductive health care system factors were explored for their association on women decision to take the screening. All factors were significantly associated with cervical cancer screening except the number of health workers in the room. Respondents reported to be satisfied with the privacy offered in the clinics with 72% of the respondents reporting to be satisfied.

The gender of the health care provider providing the screening service was reported to influence the decision of a woman to take the cervical cancer screening with 39% preferring female provider while 52% however was comfortable with either gender.

Over 94% of the respondents reported that, the number of providers in the screening room would influence the decision to screen with majority (65%) preferring at most two providers at any given time. Respondents also felt that, the cost of screening service would influence their decision to take up the screening with 69% reporting that, screening decision would depend on whether it is free or charged.
Table 4.5: influence of Reproductive health system factors on utilization of visual cervical cancer screening service

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency Screened or not screened (N=320)</th>
<th>chi²</th>
<th>Pvalue</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfortable with privacy in the clinic</td>
<td>No</td>
<td>yes (n=65)</td>
<td>80</td>
<td>10</td>
<td>6.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td>10</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>55</td>
<td>174</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCW Gender influence decision to be screened</td>
<td>No</td>
<td>yes (n=65)</td>
<td>122</td>
<td>44</td>
<td>8.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td>44</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>21</td>
<td>132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred gender of HCW</td>
<td>Male</td>
<td>yes (n=65)</td>
<td>21</td>
<td>7</td>
<td>10.70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td>21</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>yes (n=65)</td>
<td>111</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td>111</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any can do</td>
<td>yes (n=65)</td>
<td>122</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td>122</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Number of HCW’s in room influence decision</td>
<td>No</td>
<td>yes (n=65)</td>
<td>8</td>
<td>6</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>244</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whether Cost influence decision</td>
<td>No</td>
<td>yes (n=65)</td>
<td>167</td>
<td>54</td>
<td>8.71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no (n=255)</td>
<td>167</td>
<td>54</td>
<td></td>
</tr>
</tbody>
</table>

4.6 Assessment of visual cervical cancer screening service Integration in Imenti South Sub-County

Qualitative data was collected by use of key informant interview (KII) and check list to assess the extent to which the sampled health facilities had integrated VCCS service. This was assessed against the recommended requirements for RH clinics offering VCCS service in the NCCPSP 2012 – 2015 which included:- Availability of trained health care provider on VCCS, screening equipments and other utilities, functional follow – up and referral system, functional monitoring, supervision and reporting system and a one on one screening approach to all eligible clients.
Table 4.6 summarizes the situation of VCCS service integration in Imenti south sub-county based on data collected through Key informant interview and check list. The data collected was grouped in six key thematic areas addressing the integration aspect.

Table 4.6: The extent to which VCCS service is integrated in RH clinics

<table>
<thead>
<tr>
<th>Thematic area</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of VCCS Resources at RH clinics (skilled provider, equipments and supplies)</td>
<td>Available</td>
</tr>
<tr>
<td>One on one approach to all VCCS eligible clients at RH clinics</td>
<td>Inexistent</td>
</tr>
<tr>
<td>Functional client follow-up mechanism</td>
<td>Inexistent</td>
</tr>
<tr>
<td>Functional referral system</td>
<td>Inexistent</td>
</tr>
<tr>
<td>Functional VCCS service delivery monitoring and Supervision mechanism</td>
<td>Inexistent</td>
</tr>
<tr>
<td>Functional reporting system for VCCS service (data base)</td>
<td>Inexistent</td>
</tr>
</tbody>
</table>

4.6.1 Available visual cervical cancer screening resources at the RH clinics

All the six RH clinics had at least a screening room, an examination couch, a functional examination lamp, a sterilization machine, a sterilizing drum, a roll of cotton wool, the two screening reagents, clean gloves, decontamination buckets, decontamination detergents, screening register, Reusable speculums and referral forms. 3/6 RH clinics did not have couch screens, all the six RH clinics did not have disposable speculum, 5/6 did not have sterile gloves at the time of data collection while 3/6 did not have any screening posters at the clinic (checklist).

4.6.2 Cervical cancer screening and treatment methods available in the six sampled Health facilities

In the six health facilities in the sub-county, all their RH clinics were offering visual cervical cancer screening (VIA/VILI). However, none of the six was offering any other cervical screening method. There was also no treatment method offered in the selected facilities.
### 4.6.3 Proportion of health care providers skilled to provide VCCS service

The ratio of the total number of health care providers eligible to be trained on visual cervical cancer screening (nurses, clinical officers and doctors) and those who had actually been trained on the same was in the ratio of 1:2 or more with two of the six facilities having all trained. **See figure 4.4.**

![Figure 4.3: total number of health care providers verses Number of health care providers trained on visual cancer screening in the sampled RH clinics (N=6)](image)

### 4.7 Hypothesis Testing

The null hypothesis had postulated that, there are no challenges to visual cervical cancer screening service integration and utilization in Imenti South sub-county. The results however show significant challenges leading to rejection of the null hypothesis.
CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 DISCUSSION
Following the analysis of the data generated in this study, an in-depth discussion of the finding was done to establish the meaning of the results and their consistency with the currently available information regarding visual cervical cancer screening tests.

Reliable demographic data are absolutely necessary for health planning. Understanding a respondent's demographic characteristics is an essential tool in determining current and future health needs. This information is useful for understanding the factors that influence reproductive behavior as they provide a context for interpretation of demographic and health indices.

5.1.2 Respondents’ demographic characteristics
The age distribution of the respondents in this study showed a generally similar pattern as expected in Kenya’s age structure as observed in the previous population studies where populations in each age category decline with increasing age. Age was found to be a significant factor in utilization of visual cervical cancer screening ($p < 0.001$). The population distribution in this sample was consistent with the current trends of fertility in Kenya. As observed in the Kenya demographic health survey of 2014, most women utilizing reproductive health services were in their 20’s in rural areas. Very few in the 40’s were visiting RH clinics. This can be attributed to the fact that fertility rates declined as clients’ age increased and most RH services focus majorly on services targeting women at the prime of their fertility that is; the pregnant women, those with children under five years or those utilizing contraception services, which majority of these fall in their 20’s and 30’s (KDHS, 2014).
Despite those in their 40’s forming the least of the sampled population (only 15%) they represented the highest proportion of respondents previously screened for cervical cancer. Out of the 65 respondents (20%) screened previously, 45% were in their 40’s while 25% and 31% were in their 20’s and 30’s respectively. Those in their 20’s represented the lowest screening prevalence. This observation corresponded with a similar study carried out in Moi teaching and referral hospital Kenya between May 2005 and January 2006 on integration of visual cervical cancer screening in the MCH/FP clinic observed that younger women were less likely to have previously been screened compared to over 30 years old women. (Were et al, 2010).

5.1.2 The influence of respondents’ socio-demographic factors on utilization of VCCS service

The proportion of respondents’ screened previously for cervical cancer showed an increasing trend with increase in level of education. The level of education was a significant factor to visual cervical cancer screening utilization ($p<0.001$). Level of education and health seeking behavior has, in many population studies shown an association between education level and reproductive health trends with the 2014 Kenya demographic health survey showing a similar trend on level of education and fertility differentials among women of reproductive age (KDHS, 2014). A similar association of strong relationship between level of education and utilization of cervical cancer screening services was also established in a study investigating determinants of cervical cancer screening uptake in Kisumu Kenya (Morema et al., 2014).

Marital status was found to be a significant factor to a woman’s decision to utilize cervical cancer screening ($p<0.001$) with 92% of the study population reporting to be either married or had a sexual partner.
Population studies in Kenya have observed that majority of Kenyan women are either married or if not married have a sexual partner (KDHS, 2014/ KNBS, 2009/ Staci et al., 2013). Sexual partner influence on cervical cancer screening utilization is key. Despite 92% of the study respondents being either married or had a sexual partner, 87% of them had never discussed cervical cancer screening with their partners with 76% of them reporting they would consider taking up screening if their partners requested them, a significant determinant for VCCS service utilization (<0.001). Male involvement has been found in various studies to be significantly associated with utilization of reproductive health services all over the world for the last decade. A study on factors influencing uptake of cervical cancer in India reviewed that, male partner non-involvement was key to low screening uptake (Singh et al., 2012). Moreover, studies and reports from clients and service providers show that most women want men to become more involved in the health care decisions that affect their families’ lives (Muia et al., 2010).

Women socio-economic status was observed to be a factor in deciding whether to utilize the service or not (p<0.001). This has been observed in other studies done on visual cervical cancer screening utilization. Five studies conducted by ACCP partners in South Africa, Peru, Kenya, and India investigated the determinants of screening participation indicated that women in India and South Africa who had lower socioeconomic status, and had less contact with the health care system were least likely to participate in screening.
The unemployed or working in the informal sector, living in non permanent dwellings without a partner, not familiar with other women who had undergone screening, and were not regular clients of health care or family-planning services was is associated with poor cervical cancer screening service utilization (Bradley et al, 2004).

This study reviewed that the national estimates for cervical cancer screening prevalence of 3.2% was not consistent with the current observed prevalence of screened women. The WHO summary report of September 2010 on cervical cancer screening practices in Kenya estimated that only 3.2% of all Kenyan women aged 18-69 years are screened every three years with 4.0% being the urban and 2.6% being the rural women (WHO, 2010).

5.1.3 The proportion of respondents utilizing visual cervical cancer screening service

Despite studies showing that the national screening coverage is far below the expected prevalence of 70% (Gakidou et al, 2008/ MOPHS, MOMS 2012), the prevalence is higher than is currently estimated (3.2%). In this study, 20% of the study respondents had previously utilized cervical cancer screening service, just as observed in other recent studies across counties in Kenya. Kisumu estimated at 6% (Staci et al., 2013), Eldoret 12.3% (Were et al., 2010) and Embu 25% (Anne, 2014).

Other reproductive health service utilization determinants were explored for their association to utilization of visual cervical cancer screening tests. These factors included; the number of times the respondent had visited a reproductive health clinic in her life, Respondents’ level of awareness on availability of visual cervical cancer screening tests, respondents’ self-risk perception for cervical cancer, respondents’ sexual partner influence on utilizing screening tests and willingness to be screened during the time of this study.
5.1.4 The influence of respondents’ reproductive health factors on utilization of VCCS service

With the exemption of the number of times the respondent has attended the reproductive clinic all the other reproductive factors explored were significantly associated with cervical cancer visual screening.

While the number of times a respondent had attended a reproductive health clinic showing no significant association to utilization of VCCS, the study revealed that, there was a very high missed opportunity for screening with 93% of respondents having visited RH clinic at least two times and only 22% of them were screened representing a 78% missed opportunity for screening among eligible women. With the Kenya national cervical cancer prevention strategic plan main goal of utilizing the RH care system to reach eligible women as they utilize RH services to benefit from visual cervical cancer screening, it is apparent that, most eligible women are missing out the advantage of being screened as they utilize other RH services. The study further observed that, screening in the sampled RH clinics was being offered opportunistically rather than the recommended routine screening for all eligible women. Studies have showed that, women seem to utilize RH services more during pregnancy post natal period, during family planning clinics and during child immunization which attendance are inverse to their age which services targeting such women should take earliest opportunities possible to minimise missed opportunities (Chizoma et al., 2012).

The level of awareness on availability of visual cervical cancer screening tests was found to be significant (p<0.001) with 56% of the total respondents unaware of existence of VCCS.
Studies done in Kenya have consistently reviewed that, awareness of women on availability of cost effective screening approaches is still low (Staci et al., 2013/Caroline et al., 2010/ Carr et al., 2004/ Wong et al., 2009 Singh et al., 2012). The MOH in its national cervical cancer prevention strategic plan 2012-2015 appreciates that the main challenges to increasing access to and improving the quality of cervical cancer screening in Kenya includes among them, low level of community awareness of the importance of screening coupled with low knowledge on common symptoms of cervical cancer (MOH, 2012). It was also observed to be the case in a study done among women in Ibadan, Nigeria on awareness, perceptions and factors affecting utilization of cervical cancer screening services reviewed that, many women seemed unaware of existence of such services (Chizoma et al., 2012).

A one on one approach between a woman and the health care provider provides the best opportunity for awareness creation on the available service and what it entails and other implications. The study observed that, respondents expressed fear for the screening procedure but despite that, when women were requested if they were willing to have a visual cervical cancer screening test during that visit (when interview was being conducted), 63% of the respondents were willing to be screened during that RH clinic visit when the service was explained to them. This was statistically found to be a significant association to uptake of screening service (p<0.001). This demonstrates the effect awareness creation would have if women were explained to the procedure for screening every time they visited an RH clinic visits.
The study observed that, health education, counselling and awareness creation was not done to every eligible client as they sought other services in the RH clinic nor were there specified time for group health education at the clinic (KII). This has been observed in other studies to be a key factor in creating demand and awareness for cervical cancer screening services. Screened women in Peru, Kenya, Mexico and South Africa highlighted the importance of providers taking time to converse with them, answering questions, explaining procedures, and giving encouragement (Bingham, 200 / PATH, 2002 / Buskens, 2002/ Morema et al., 2014/ Joelle et al., 2014).

On respondents’ self-risk perception for suffering from cervical cancer it observed to be was significantly associated with utilization of cervical cancer screening tests with p<0.001. The health belief model explains that the individuals view of own vulnerability to illness is key to seeking health care services. If an individual does not see himself or herself as being at risk of any problem, he or she will not seek care (Glanz et al., 2010). This is clearly reflected in this study with majority of those who dint perceive self-risk for cervical cancer being those who had never been screened before. The consequence is that, women a risk of cervical cancer will at the end fail to utilize cervical cancer screening service by virtue of perceiving self not at risk of developing the disease, (Bingham et al, 2002/ Kenya cancer registry, 2010).

For visual cervical cancer integration to be successful, the screening resources must not only be available but adequate and sustainable. These resources include both human and non-human resources.
By the time the division of reproductive health in Kenya was developing the 2012-2015 cervical cancer prevention strategic plan, the evidence on the ground indicated that one key impediment to a fully-fledged national cervical cancer prevention plan was inadequate trained health care providers to provide the screening coupled with inadequate screening resources.” (MOPS, 2012). In the pilot project carried out between 2000-2004 in western Kenya (WKCCPP) attributed the major factor to low screening coverage to unavailability of sufficient staff in health facilities such that clients were either turned away or asked to wait for longer periods while acute care was provided first. This was recounted by participants as a major factor that dampened the interest of women in attending (PATH, 2004). This study reviews the impact the strategic plan has had so far on human resource capacity building on VCCS.

5.1.5 The influence of health facility factors on utilization and integration of VCCS service
The available resources were in the context of visual cervical cancer screening were sufficient to offer screening though not adequate to ensure no missed opportunities for screening. Most significant was the absence of sterile glove and few numbers of reusable speculums as observed by use of a check list. The absence of sterile gloves raises the question of sterility considering that visual cervical cancer screening is a sterile procedure.

The few number of disposable speculum, though practically possible to provide the service, would cause unnecessary delay as the clients await the speculums to be sterilized.
The absence of couch screens though compromises the extent to which privacy is guaranteed would largely not affect the screening if other factors for privacy would be explored including lockable doors, windows and number of providers in the room.

A situation analysis for cervical cancer diagnosis and treatment in five East, Central and Southern African countries (ECSA) (Kenya included) with the main objective of determining the factors that influence cervical cancer diagnosis and treatment in these countries found out that, although 95% of institutions at all health care levels in ECSA had the basic infrastructure to carry out cervical cancer screening but only a small percentage of women were screened or were being screened (Chirenje et al., 2001).

5.1.6 The influence of sub-county reproductive health care system on utilization and integration of VCCS service

This study reviewed that, reproductive health care system has an influence on how screening services are utilized. In this study, privacy, number of health care providers in the room, gender of the health care provider, how the visual screening services were offered and the cost of screening service were explored for their association to service utilization, all but the number of health care providers in the room were significantly associated with service utilization. The health facility factors play a key role in woman’s decision to utilize the screening service. If there were to be more than one health care provider in the room then the privacy of the client would be violated. The gender of the health care provider was a significant factor with majority in this category preferring a female provider. A similar study in Kenya and Peru observed that, client satisfaction on how RH services are provided was key in cervical cancer
screening utilization with screening coverage directly proportional with level of satisfaction (Bingham et al., 2001/Bingham et al., 2003/ PATH, 2002).

Cost of any service largely influences whether a client decides to take the service or not especially preventive services which clients at that given moment appear “healthy”. When asked if cost would be a problem before they could be screened, 69% felt it was a determining factor with 87% of these saying it all depended on how much was to be charged and the rest either saying they would come back when they have money or could not afford at all.

The cost of screening would not any way be compared to cost of treatment for cervical cancer disease. The burden cervical cancer diseases gives to the health system would in itself be a sufficient reason why the screening service should be offered free of charge. It’s evident in this study that cost would turn away potential eligible clients for screening and could be a reason why the screening up take is still very low in the sub-county. Majority of women were willing to be screened during that visit but that depended largely on whether they could afford the cost of screening, a situation replicated in other studies on cervical cancer screening service utilization in Nigeria and Kenya respectively (Bernard et al., 2013/ Staci et al., 2013).

Through the Key informant interviews conducted in the six sampled facilities, all the six facilities had the capacity to provide visual cervical cancer screening. Screening however was only offered opportunistically other than routinely as it ought to be as provided in the strategic plan. Contrary, previous studies in Kenya (WKCCPP), a major factor in the low coverage was the general unavailability of sufficient staff in health facilities such that clients were forced either to wait for long hours or come
back for the screening at a later date which contributed to missed opportunity for screening (PATH; 2002).

Treatment for women who screened positive was however unavailable in the Sub-county meaning, the screening program would still suffer deficiencies in terms of referring women who screened positive on VCCS.

Screening in this study was more opportunistic than a routine practice (KII). This was the case in the ECSA situation analysis that observed that the few women who had been screened during that study were screened more by chance (Chirenje et al, 2001).

While this study has revealed that majority of the health facilities had the capacity to offer visual screening (6/6 sampled facilities had the capacity to offer) screening was still haphazard and opportunistic with routine screening for all eligible clients yet to be established.

Imenti south sub-county lacked necessary capacity to handle visual cervical cancer screen positives diagnosed at the facility or even referred from its referring facilities. The facility lacked personnel and equipment to manage clients who screened positive on visual screening (KII). All the six sampled health facilities reported to refer clients who screened positive to facilities outside the sub-county. They also lacked a referral strategy and none of the facilities had a clear outline of how they make follow-up of patients referred for further management or even for future treatment for those who screen negative. This presents mass loss of follow-up and unknown outcomes for referred clients (KII).
The MOH/DRH had observed that a major challenge for managing screen positives was lack of treatment facilities when there is pre-cancer or cancer diagnosis (MOPS/DRH, 2012). This was observed before the ministry had rolled out the current prevention program.

The ministry had further indicated in the strategy that, a single visit was difficult due to decreased availability of Cryotherapy equipment and indicated that plans were underway to procure more Cryotherapy equipments across the country in order to avail both screening and treatment at lower levels of care and further strengthen referral systems for cervical cancer prevention program (MOPS/DRH, 2012).

The key reason for screening is to diagnose cervical cancer lesions early and treat the client before the disease itself establishes or if already established treat it early before it spreads to the rest of the body. With the absence referral and follow-up mechanisms within the health care facilities, Screening only cannot address the cervical cancer disease. In a demonstration project in Peru on cervical cancer prevention, it was observed that follow-up care for abnormal screens was poor with unusually long delays between screening and treatment in most times treatment being inaccessible (ACCP, 2004). The sub-county’s visual cervical cancer monitoring and evaluation was inefficient (KII). The visual screening was given less attention compared to other RH services provided at the clinics (KII). While all the facilities had the required reporting tools, it was observed that at the sub-county’s health information system office that, there was no data captured on visual cervical cancer screening at the time of data collection.
There had been no follow-up on screening data from the facilities (KII). This represents the low attention given to information on cervical cancer reporting.

Without proper recording and channelling of the cervical cancer screening to a central point, it’s very difficult to know the number of eligible clients screened in the sub-county monthly or annually making it even more difficult to estimate coverage and also plan for resources and also affects monitoring and evaluation of the screening program, a problem that had already been identified in the WKCCPP and recommended to be addressed before the first programme (PATH, 2004).

5.2 CONCLUSION
The observation is, more emphasis has been put on facility based VCCS resource mobilization; personnel, equipment and supplies and very little effort on key important system and client based factors that determine screening program success which includes; Low level of awareness on availability VCCS service and Low self-risk perception, VCCS service delivery approach where RH clinics employ opportunistic screening as opposed to recommended routine screening for all eligible women and the screening service charge, all resulting to high missed opportunity for screening eligible women visiting RH clinics. Male involvement in advocacy for screening remains an unexploited avenue for raising screening utilization. The Inexistence of functional referral, follow-up, monitoring, supervision and reporting systems within the Sub-county further compromises the success of cervical cancer screening program. Addressing VCCS clinical service alone will not achieve the desired screening target of over 70% unless the key system and client based challenges observed are addressed.
5.3 RECOMMENDATIONS

Based on observed challenges to facility integration and client utilization of visual cervical screening tests, this study therefore recommends the following:-

1. Addressing the low level of awareness and demand on visual cervical cancer screening through; establishing an in-reach strategy to capture clients visiting the RH clinics. This will require individualized one-on-one approach to all eligible clients attending the RH clinic coupled with routine group health talks at the clinic which will aim at addressing the issue of the large proportion of screening missed opportunity. establishment of an outreach strategy to reach the eligible women in the community. This will be through training the existing community health workers on the component of women education on cervical cancer screening and mobilizing eligible women to visit RH clinics for screening, targeting women groups, men groups, youth groups, school health programs, religious groups, and the local media to create awareness on visual cervical cancer screening. Creation of divisional health committees in each of the six divisions within the sub-county that shall comprise political and religious leaders, male and female cervical cancer screening champions and community health workers who will coordinate community cervical cancer screening awareness in liaison with the sub-county health administrators and the non-governmental organizations within the sub-county.
2. Partner involvement: This is through encouraging women to discuss with their partners about cervical cancer screening, reaching men through local media on importance of having their female partners screened, through men organizations and through religious groups which have a direct influence on men.

3. Establishing functional referral and follow-up mechanism within the sub-county: With health being a devolved function within the county government, the sub-county health administration needs to set up a functional referral centre within the sub-count referral hospital which should equip the facility with treatment resources most importantly a Cryotherapy machine and also trained personnel to offer treatment.

These services should be offered consistently with a functional linkage with all the referring RH clinics to allow communication for booking client prior to avoid inconveniences and treatment fallouts.

4. Strengthening supervision, reporting, monitoring and evaluation: Just like other RH services are strictly supervised by the health administrators, visual cervical cancer screening should have proper documentation of all clients screened and monthly reports complied and submitted to the sub-county health information system together with the other RH services. Supervision for this is key in ensuring accountability and quality of services offered.

5.4 Further Research
The study observed that, most of the health care providers working in the RH clinics had received some basic training on visual cervical cancer training. However, none of the RH clinics was offering screening routinely as expected. This study recommends
further research on establishing competency in screening among those trained on visual cervical screening to establish level of competency in screening.

REFERENCES


APPENDICES

APPENDIX I: CONSENT FORM

My name is Jeremy Murithi Njiru, a master’s student at Kenyatta University pursuing a Master of Science degree in reproductive health (MSc.RH). I am carrying out a study on challenges to facility integration and client utilization of visual cervical cancer screening tests within the sub-county. (For the purpose of this study, visual screening tests will be limited to the ones used locally only, the VIA/VILI).

The current prevalence of women screened in Kenya is estimated at 3.6% despite the existence of the Kenya cervical cancer prevention program since 2002 that intended to raise the prevalence of screened women to over 70%. The researcher intends to establish the challenge health facilities experience in integrating visual screening tests in the reproductive health clinics and the challenges client experience that influence utilization of the visual screening tests. This study with involve collection of information from clients visiting reproductive health clinics, key informants who will comprise heads of reproductive health clinics, the district public health nurse or the district medical officer of health.

Your participation in this study is entirely voluntary. You do not have to take part in this study if you do not wish to do so. You may also stop participating in the study at any time you choose. It is your choice and all of your rights will still be respected. This research will observe your rights to privacy and confidentiality. The information you give will not be disclosed or your name required anywhere during this study.

This study has been reviewed and approved by the university ethical review committee, ministry of higher education and the sub-county’s health ethical committee.

Do you have any questions concerning this study before proceeding?

I have read the foregoing information, or it has been read 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 consent voluntarily to participate as a participant in this research.

Sign: ____________________  Date of interview: ______________
APPENDIX II: RESPONDENTS QUESTIONNAIRE.

PART A: DEMOGRAPHIC CHARACTERISTICS

1. What is your age?
   (a) 25 - 29 years  (b) Between 30-and 39 years  (c) Between 40 and 49 years

2. What is your level of education?
   (a) Never went to school  (b) Primary level  (c) Secondary level  (d) Post secondary level

3. What is your marital status?
   (a) Single  (b) Married  (c) Not married but have a sexual partner  (d) Divorced  (e) Widowed

4. What is your religion?
   (a) None  (b) Christian  (c) Muslim  (d) others
   (specify)..........................................

5. What is your source of income?
   (a) Formal employment  (b) self employed  (c) casual jobs  (d) others
   (specify).........................

6. What is your average monthly income?
   (a) Below 5,000 Ksh  (b) Between 5,000 and 10,000 Ksh  (c) Above 10,000 Ksh

PART B: PROPORTION OF CLIENTS THAT HAVE UTILIZED VIA/VILI CERVICAL CANCER SCREENING TEST

1. How many times have you visited a reproductive health clinic in the last three years?
   (a) This is my first time  (b) this is my second time  (c) More than two times
2. Have you ever been screened for cervical cancer?
(a) Yes  (b) No

3. If YES in (II) above, how many times?
(a) Once  (b) Twice  (c) others (specify).................................

4. If YES in (II) above, which screening test did you take?
   a. The one you come to collect results at a later date (Pap smear)
   b. The one you get results on the spot (VIA/VILI)
   c. I can’t tell which one it was

PART C: AWARENESS OF AVAILABILITY OF VIA/VILI SCREENING TEST

1. Has someone ever talked to you about a cervical cancer screening test that takes an average of ten minutes and one receives results in the same visit (VIA/VILI)?
   (a) Yes  (b) No

2. What is your reaction about the above test?
   (a) I have heard about it before  (b) it is the first time i am hearing about it
   (c) Others (specify)............................

PART D: CHALLENGES TO UTILIZATION OF VIA/VILI CERVICAL CANCER SCREENING TEST

1. Clients perception of suffering cervical cancer

   i. According to you, which type of women do you think are at risk of developing cancer of the cervix? (client can give more than one response)
      (a) Young women  (b) Old women  (c) Women with multiple partners
      (d) All women have equal risk  (e) No idea  (f) others
      (specify)............................

   ii. Do you perceive yourself as being at risk of developing cancer of the cervix?
      (a) Yes  (b) No  (c) i don’t know
2. **Clients perception of the procedure of carrying the test**
   
i. **Do you know what VIA/VILI screening procedure entails?**
   
   a. I have no idea
   
   b. Involves being positioned on the coach and your private part exposed to visualize the cervix for screening to be done
   
   c. Others (specify).................................................................................................
   
   ii. **If you were to be told the procedure entails (b) above, what would be your reaction? (Client can give more than one response).**
   
   (a) Fear the procedure  (b) Find it embarrassing   (c) Perceive it to be painful
   
   (d) Find it uncomfortable  (e) find it ok   (f) others
   (specify).................................
   
   iii. **If you were to be requested to have the test done on you in this visit, what would be your response?**
   
   (a) Yes am ready to have it done  (b) will come another day for the test
   
   (c) Don’t want the test at all  (d) others
   (specify)......................................................

3. **Clients level of satisfaction with the privacy at the clinic**
   
i. **Are you comfortable with the level of privacy given to you at this clinic during procedures?**
   
   (a) Yes  (b) No
   
   ii. **Do you think the following would influence your decision to consider undergoing the procedure?**
   
   A. Gender of the health service provider.
   
   (a) Yes  (b) No
   
   Which one would you prefer?
(a) Male  (b) Female  (c) Any can do

B. Number of health service providers on the room.
(a) Yes  (b) No

Which one would you prefer?
(a) One health care provider  (b) At most two  (c) Others
(specify)........................................

C. Cost of the service.
(a) Yes  (b) No

If you were told there is a fee charged for the service what would be your reaction?
(a) I have no problem with the charge  (b) Depends on how much  
(c) Will come back when I have that money  (d) Cannot afford at all

4. Partner influence on service utilization
i. Has your partner ever discussed with you about taking a cervical cancer screening?
(a) Yes  (b) No

ii. If your partner requested you to have the screening done (those with a partner) what would be your reaction?
(a) I would seriously consider that  (b) It wouldn’t change anything  (c) Others
(specify).........................

iii. Does your partner (if any) support you in any way when attending reproductive health clinic?
(a) Yes  (b) No

THANK YOU VERY MUCH FOR YOUR TIME AND YOUR HONEST RESPONSES
APPENDIX III: FOCUSED GROUP DISCUSSION QUESTIONNAIRE

PART ONE: FACILITY DEMOGRAPHIC INFORMATION

1. FACILITY NAME
2. TYPE OF FACILITY
3. NO. OF HEALTH CARE PROVIDERS IN RH CLINIC (DOCTORS, CLINICAL OFFICERS NURSES)
4. NUMBER OF HEALTH WORKERS TRAINED ON VISUAL SCREENING (VIA/VILI)

PART TWO: FACILITY STATE OF VISUAL SCREENING

1. DOES YOUR FACILITY OFFER THE FOLLOWING?
   a. VIA/VILI (YES) (NO)
   b. Pap smear (YES) (NO)
   c. Cryotherapy (YES) (NO)

2. If VIA/VILI is offered in this reproductive clinic, how is it done?
3. If VIA/VILI is not offered in this clinic, what are the reasons why it’s not offered?

PART THREE: CLIENT HEALTH EDUCATION AND AWARENESS

Do you remember to talk about cervical cancer screening to all your eligible clients?

1. How often do you offer group health education on cervical cancer screening at this clinic?
2. Does the facility offer routine community cervical cancer screening outreaches

PART FOUR: FOLLOW–UP AND REFERRAL SYSTEM

1. Do you know of a facility within the sub-county that manages screen positives by either Cryotherapy, or any other mode of treatment?
2. Where does your facility refer the screen positives?
3. Does your facility have a follow-up mechanism for clients who screen negative for future subsequent screening?
4. If patients are referred outside your facility for further management, does the facility have a follow-up mechanism to check on outcomes?

PART FIVE: REPORTING TOOLS AND SCREENING POLICY

AWARENESS

1. Does your facility have a copy of the Kenya cervical cancer prevention strategic plan 2012-2015?
2. Has any one of you ever read the policy?
3. Which other policies on VIA.VILI cervical cancer screening do we have?
4. Which reporting tools for VIA/VILI cervical cancer screening have you come across?

PART SIX CERVICAL CANCER SCREENING SUPERVISION

1. How do you find the sub-county VIA/VILI cervical cancer screening supervision?
2. Compared to other services offered at the reproductive health clinic, do you think cervical cancer screening is given equal attention by the health supervisors?

PART SEVEN: CLIENTS DEMAND FOR VISUAL SCREENING

1. Do you get clients coming to request for visual screening at your facility?
2. How can you describe the demand for visual screening by clients

PART EIGHT: SCREENING COMMODITIES SUPPLY

1. Where do your visual cervical cancer screening commodities come from?
2. How can you describe the supply?

PART NINE: CERVICAL CANCER SCREENING CONTINUED MEDICAL EDUCATION

1. How often does your sub-county organize for refresher course on VIA/VILI screening?
2. Does your clinic train more staff on VIA/VILI screening on the job?

PART TEN: OTHER VIA/VILI SCREENING CHALLENGES AT THE REPRODUCTIVE HEALTH CLINICS
1. What other challenges do you face that interfere with VIA/VILI cervical cancer screening?

APPENDIX IV: A CHECK LIST FOR AVAILABLE RECOMMENDED RESOURCES FOR VISUAL CERVICAL CANCER SCREENING

**FACILITY NAME: …………………………………………………………………………...**

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>NUMBER</th>
<th>CONDITION</th>
<th>ADEQUATE</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>FUNCTIONAL</td>
<td>NON-FUNCTIONAL</td>
</tr>
<tr>
<td>Screening room</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examination coach</td>
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<td>Screens</td>
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<td>Examination head lamp</td>
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<td>Sterilization machine</td>
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<tr>
<td>Re-usable</td>
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<td>Reagents:- Lugo’s iodide</td>
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<tr>
<td>Acetic acid</td>
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<td></td>
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<tr>
<td>Gloves:- Sterile Clean</td>
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<td>Decontamination buckets</td>
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<tr>
<td>Detergent for decontamination</td>
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<td>Screening register</td>
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<tr>
<td>Referral forms</td>
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<td>Screening posters in</td>
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</table>
APPENDIX V: MAP OF IMENTI SOUTH SUB-COUNTY
APPENDIX VI: NATURAL HISTORY OF CERVICAL CANCER

![Diagram showing the natural history of cervical cancer progression from CIN 1 to CIN 2 to CIN 3 to invasive cancer.]

CIN 1 → CIN 2 → CIN 3 → Invasive Cancer

10–15 years?

Basement Membrane

CIN 2

CIN 3

Invasive Cancer

Low-grade

High-grade

CIN 1

CIN 2

CIN 3

Invasive cancer
APPENDIX VII: INTERPRETING VISUAL CERVICAL CANCER SCREENING RESULTS AS WHETHER POSITIVE OR NEGATIVE (RESULTS FOR VIA AND VILI)

VIA NEGATIVE RESULTS

VIA POSITIVE RESULTS

VILI NEGATIVE RESULTS

VILI POSITIVE RESULTS
APPENDIX VIII: VILI RESULTS INTERPRETATION CHART

VILI

VILI negative

VILI positive

Source: Reprinted from Sankaranarayanan and Wesley