CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING NAIVASHA COUNTY REFERRAL HOSPITAL

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Cervical cancer screening uptake among women Attending Naivasha County Referral Hospital

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DECLARATION

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

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This thesis has been submitted for examination with our approval as the University Supervisors.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACCP	Alliance for Cervical Cancer Prevention
AIDS	Acquired immunodeficiency syndrome
CCCs	Comprehensive Care Clinics
CIN	Cervical intraepithelial neoplasia
CSC	Centre Scientific Committee
EDA	Exploratory data analysis
ERC	Ethical Review Committee
FGD	Focus group discussion
FP	Family planning
FPAK	Family Planning Association of Kenya
HIV	Human immunodeficiency virus
HPV	Human papillomavirus
HSIL	High-grade squamous intraepithelial lesions
ICO	Institut Catalad'Oncologia
ITROMID	Institute of Tropical Medicine and Infectious Diseases
IUD	Intrauterine device
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KEMRI	Kenya Medical Research Institute

KEPH	Kenya Essential Package for Health
KII	Key informant interview
KMTC	Kenya Medical Training College
LEEP	Loop electrosurgical excision procedure
LMIC	Low-and middle income countries
MCH	Maternal child health
MOMS	Ministry of Medical Health Services
MOPHS	Ministry of Public Health and Sanitation
NCCPP	National Cervical Cancer Prevention Program
NCCPPSP	National cervical cancer prevention program strategic plan
NCCS	National cancer control strategy
NGO	Non-governmental organisation
NHIS	National health interview survey
OC	Oral contraceptives
PAP SMEAR	Papanicolaou test
PEPFAR	President's Emergency Plan for AIDS Relief
RH	Reproductive health
SES	Socio-economic status
SCJ	Squamocolumnar junction

SI	Standardized index
SPSS	Statistical Package for Social Sciences
SSC	Scientific Steering Committee
STD	Sexually transmitted disease
STI	Sexually transmitted infection
TV	Television
VIA	Visual inspection with acetic acid
VILI	Visual inspection with Lugol's iodine
WHO	World Health Organization
WHS	World Health Survey

ABSTRACT

Cancer has become a major source of morbidity and mortality globally. About 86% of the cases of cervical cancer occur in developing countries. Kenya has a population of 10.32 million women 15 years and older who are at risk of developing cervical cancer. In Kenya, cervical cancer represents 21% of all cancers in women. Cervical cancer has a long development period taking as long as 10 years making it possible to control through screening and treatment. With the overall burden of cervical cancer projected to continue rising over the next 10 years, several projects in reproductive health and Human Immunodeficiency Virus (HIV) offer cervical cancer screening using visual inspection with acetic acid or visual inspection with Lugol's iodine (VIA/VILI). Naivasha County Referral Hospital is located in a cosmopolitan area. The hospital offers VIA/VILI services in the family planning clinic. Family planning counselling programs are a good opportunity to discuss the benefits of cervical cancer screening with gynaecological examination more easily accepted during a reproductive health consultation. The objective of this study was to determine the factors that influence uptake of cervical cancer screening among women attending the family planning clinic at Naivasha County Referral Hospital. The study took place from June to July 2014. This study was a concurrent triangulation mixed method study with descriptive cross sectional design, key informant interviews and focus group discussions. A total of 384 women aged 18 – 49 years were enrolled through systematic sampling for the cross sectional study. Data were collected through semi-structured questionnaires. After purposive sampling seven key informant interviews and two focus group discussions were conducted using interview guides among women treated at the family planning clinic. Descriptive cross sectional data were analysed for descriptive statistics, bivariate and multivariate analysis. Qualitative data were analysed manually using themes. Participants who had been screened for cervical cancer were 15.4%. Some factors were found to be associated with cervical cancer screening uptake. These were employment status ($p=0.023$), usual treatment centre ($p=0.041$), risk of cervical cancer ($p=0.028$), having heard of cervical cancer ($p=0.006$) and knowing someone who had been screened ($p<0.001$). Common barriers that were identified were large

number of clients, inadequate screening rooms, inadequate information and misconception of facts on cervical cancer screening. Hospital talks were the most preferred source to get information related to cervical cancer. Of those who reported having been screened, 2.3% were screened during the study period and 44.4% of them had positive VIA/VILI results. In conclusion, the availability of screening services at clinics that clients normally attend and where gynaecological examination is expected to be easily accepted did not translate into high proportions in cervical cancer screening uptake due to the various barriers. However, targeted screening resulted in more positive cases being reported. A comprehensive strategy by policy makers which includes programs in health facilities and outreaches should be considered to ensure those reached are well informed. Healthcare providers should generate a systematic sensitization program on cervical cancer that includes details on causes and need for screening. There is also need to increase the number of healthcare workers trained and provision of more resources for screening to make it more accessible. This will lead to an increase in cervical cancer screening uptake.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Cancer has become a major source of morbidity and mortality globally. Worldwide, breast and cervical cancers represent 33% of the new cancer cases in females. Cervical cancer is the second most common cancer among women worldwide and the tenth most common cancer in developed regions. About 86% of the cases occur in developing countries. This represents 13% of female cancers. High-risk regions include Eastern and Western Africa (Ferlay *et al*., 2010; WHO/ICO, 2010).

In Kenya, breast cancer represents 22% of all the cancers while cervical cancer represents 21%. Cancer of the breast and cervix uteri were the two most common cancers (Nairobi Cancer Registry, 2012). In Kenya, 10.32 million women 15 years and over are at risk of developing cervical cancer (WHO/ICO, 2010).

Human papillomavirus (HPV) infection is a well-established cause of cervical cancer and though it is a necessary cause, it is not sufficient. Sexual intercourse is the primary route of transmission of genital HPV infection. Over 70% of all cervical cancer cases are caused by HPV types 16 and 18. An additional 20% of cervical cancer is caused by HPV types 31, 33, 35, 45, 52 and 58. Infection with one or more of the high-risk oncogenic types leads to invasive cervical cancer after around 10 years. About 38.8% of women in the general population are estimated to harbour cervical HPV infection at a given time (WHO/ICO, 2010).

Other cofactors associated with the progression from cervical HPV infection to cancer include tobacco smoking, high parity, age at first sexual intercourse and co-infection with HIV (WHO/ICO, 2010). In low-and middle income countries (LMIC), a major issue is co-infection with HIV and HPV with 20% of HIV women screened for cervical cancer (Sahasrabuddhe *et al*., 2011; Sneden *et al*., 2012). There is a high correlation between HIV infection and HPV infection. HIV weakens the immune system decreasing the ability to fight infections therefore making it more likely for

HPV infections to persist. Indeed, women infected with HIV are five times more likely to develop cervical cancer (CancerQuest, 2013).

Cervical cancer screening can reduce the incidence of cancer by early detection and treatment. However, there are barriers to cervical cancer screening uptake in developing countries and these include: absence of knowledge about the disease, lack of familiarity with the concept of preventive health care, geographic inaccessibility of services, lack of support from families and communities and fear of the speculum exam (Huchko *et al*., 2011; ACCP, 2004; NCCPPSP, 2012).

In an effort to reduce the incidence, morbidity and mortality associated with cervical cancer, the Kenyan government has placed greater emphasis on the need for system strengthening to facilitate provision of primary prevention, screening, early detection, diagnosis and appropriate management of precancer and cancers (NCCPPSP, 2012). Visual inspection with Acetic Acid (VIA) and Visual Inspection with Lugol's Iodine (VILI) are used in low-resource settings. In Kenya, several projects in reproductive health and HIV have been offering cervical cancer screening using visual inspection methods. Family planning and contraceptive methods are offered at family planning clinics. In addition, the clinics offers VIA/VILI screening services. Despite this service being offered, not all clients take up cervical cancer screening (NCCPPSP, 2012).

There are six levels of health care delivery in Kenya (Kenya Essential Package for Health-KEPH). The first level offers services at the community level with the level of specialised care offered increasing with each level until level 6 where sophisticated diagnostic, therapeutic and rehabilitative services are offered. District and sub-district hospitals are in Level 4. They are the first referral hospitals and form an integral part of the district health system (Luoma *et al*., 2010). The family planning clinic offers the right setting and opportunity for health providers to add value to the visit of a woman through cervical cancer screening (Were *et al*., 2010). Screening through VIA/VILI is commonly used in Kenyan government health facilities like Naivasha County Referral Hospital. Though easily preventable, the cervical cancer screening coverage is low with some studies showing that cervical

cancer screening uptake lower than 30% (NCCPPSP, 2012; Eze *et al*.,2012; Lyimo *et al*., 2012).

Since most cervical cancer cases are diagnosed late, the scope for successful treatment is limited and very expensive and consequently the mortality rate is high among the affected patients. Cervical cancer thus claims the lives of women in the prime of their life when they may be raising children, caring for the family, and contributing to the social and economic life of their community. It has been estimated that the average life years lost due to cancer of the cervix is 25.3 years (NCCPPSP, 2012). Hence the target of the NCCPPSP is to ensure that women have access to cervical cancer prevention and control services through family planning clinics. This is anticipated to lead to a reduction of incidence of cervical cancer and have a positive impact on health and development (NCCPPSP, 2012).

1.2 Statement of the Problem

Cervical cancer is the second most common cancer among women and has the highest mortality yet it is preventable and easily controlled by screening and treatment of precancer and more recently by vaccination (NCCS 2011; WHO 2006). The overall burden of cervical cancer is projected to continue rising over the next ten years in Kenya (WHO/ICO, 2010). The reasons for this include a lack of cervical cancer awareness among the population at risk, low uptake of cervical cancer screening, limited access to health care services, lack of familiarity with the concept of preventive health care, fear of pain during the screening or of the test results and HIV infections (ACCP 2004; NCCPPSP, 2012). Kenya has realised this burden and hence started a cervical cancer screening program. This includes level 4 hospitals, but the proportion of cervical cancer screening uptake and VIA/VILI positive results among those screened in family planning clinics have not been well documented. Studies done in parts of low-income countries have shown that the screening uptake is usually less than 50% (Eze *et al*., 2012; Lyimo *et al*., 2012). Most studies focus on women not seeking health care mainly for reasons like cultural ones and do not distinguish those using the healthcare system, but not receiving appropriate preventive care because women avoid cervical examinations (Rigal *et al*., 2011). A

study by Were *et al*., (2011) stated that limitations to its findings related to women who accepted to participate and then undergo screening using visual inspection. Thus there was a likelihood that the women that did not accept screening were significantly different.

1.3 Justification

The Kenya National Cancer Control Strategy 2011 – 2016 aims at building strong cancer prevention and control capacities through creating cancer awareness, surveillance and research among others strategies. Among its objectives is to promote cancer prevention and early detection (NCCS, 2011). To achieve these, it collaborates with non-governmental organisations like President's Emergency Plan for AIDS Relief (PEPFAR) and John Hopkins Program for International Education in Gynaecology and Obstetrics (Jhpiego) to increase public awareness, research and technical assistance to establish and scale up cervical cancer prevention programs (Jhpiego, 2012). Some of the strategies recommended by cancer guidelines are one-on-one and group education targeting patients attending health facilities. In order for screening and prevention to have an impact on the incidence of cancer there is a need to screen many people. The target population of 75% to be screened has not been reached even with active promotion of cervical cancer screening through VIA/VILI (National Cancer Guidelines, 2012). Studies such as Were *et al*., (2011), show that VIA/VILI has been practiced within the last five years. Naivasha County Referral Hospital is located in a highly populated cosmopolitan area with people from different parts of the country. Therefore there is a need for studies like this to answer questions on current cervical cancer screening uptake, results of the screening and why targets have not been reached. Information about the barriers women face in seeking cervical cancer prevention services can be used to guide implementation of new services and improvements in currently available services (ACCP, 2004). This study aimed to identify the factors influencing women to participate in cervical cancer screening.

The generated information can be applied in policy making and strengthen outreach programs. This will then assist programs in tailoring their services to reach women and increase coverage rates.

1.4 Research Questions

1. What is the proportion of women undergoing cervical cancer screening among those attending the family planning clinic at the Naivasha County Referral Hospital?
2. What is the proportion of positive visual inspection with acetic acid/visual inspection with Lugol's iodine results among those screened at the family planning clinic at the Naivasha County Referral Hospital?
3. What factors influence cervical cancer screening uptake among women attending the family planning clinic at the Naivasha County Referral Hospital?

1.5 General Objective

To determine the uptake and factors associated with uptake of cervical cancer screening among women attending the family planning clinic at the Naivasha County Referral Hospital.

1.5.1 Specific Objectives

1) To determine the proportion of women who undergo cervical cancer screening at the family planning clinic at the Naivasha County Referral Hospital.
2) To determine the proportion of positive visual inspection with acetic acid/visual inspection with Lugol's iodine positive results among those screened at the family planning clinic at the Naivasha County Referral Hospital.
3) To determine and explore factors associated with cervical cancer screening uptake among women attending the family planning clinic at the Naivasha County Referral Hospital.

CHAPTER TWO

LITERATURE REVIEW

2.1 Cervical Cancer

Cervical cancer has a development period as long as ten years. Due to this long development period and easy accessibility of the cervix, there is adequate time for screening and providing early management to prevent progression of precancerous lesions to cancer (Cervical Cancer Prevention Alliance, 2008). Recommended target ages and frequency of cervical cancer screening depends on various factors. For example, high risk HPV is most common in women under 25 years of age and considering the long developmental period to cervical cancer, if a woman can be screened once in her life time, the best age is between 35 – 45 years (WHO, 2006).

Countries with resources have a shorter screening cycle like Italy offers triennial cervical screening (Napoli *et al*., 2011). The recommended screening cycle for Kenya program is every 5 years, except for HIV positive women. For HIV positive women the screening cycle is at diagnosis, 6 months in the first year and then yearly if normal. HIV weakens the immune system decreasing the ability to fight infection making HPV more likely to persist. This increases the risk of developing cervical cancer therefore the need for frequent screening (NCCPPSP, 2012; CancerQuest, 2013).

2.2 The Cervix and Progression to Cervical Cancer

The cervix is the lower one-third of the uterus and is composed of dense fibromuscular tissue lined with two types of epithelium: squamous epithelium and columnar epithelium. These two meet at the squamocolumnar junction. The cervical transformation zone is the area between the original and the new squamocolumnar junction (SCJ), where the columnar epithelium is being replaced by squamous epithelium. It is this area where the great majority of cancers arise. When there is persistent HPV infection and other cofactors, the metaplastic squamous cells of the transformation zone take on an abnormal appearance known as cervical squamous

precancer or dysplasia. These cells later multiply in a disorderly manner typical of cancerous change to produce squamous cell carcinoma (WHO, 2006; IARC, 2013).

People with immunodeficiency, for example resulting from HIV infection, have more persistent HPV infections and a more rapid progression to precancer and cancer. The HPV infection is a necessary, but not a sufficient cause of cervical cancer. 60% or more cases of dysplasia resolve spontaneously and only about 10% progress to moderate or severe dysplasia. Less than 50% of cases of severe dysplasia progress to invasive carcinoma (WHO, 2006). Urgent action is required or deaths due to cervical cancer are projected to rise by about 25% over the next 10 years (NCCS, 2011; WHO, 2006).

2.3 Cervical Cancer Screening

Screening is a public intervention used on a population at risk or target population. It is taken, not to diagnose, but to identify individuals with a high probability of having or developing a disease. Recommended initial service entry points in Kenya include: Maternal child health (MCH)/FP clinics, Comprehensive care clinics (CCCs), Obstetrics and gynaecology wards/clinic, and outreach/in reach for mass screening campaigns. Cervical cancer screening occurs in a few selected sites that include level 4 hospitals. There is reduced availability of cervical cancer screening at the primary health care level where about 80% of the people live (NCCPPSP, 2012). Family planning counselling programs are a good opportunity to discuss the benefits of cervical cancer screening with gynaecological examination more easily accepted during a reproductive health consultation. It results in value added to the visit for women through cervical cancer screening (Were *et al*., 2010).

The screening methods are Pap smear, HPV test and visual screening methods. In Pap smear test, a sample of cells is taken from the transformation zone and taken to the laboratory for examination. The HPV DNA (deoxyribonucleic acid) test is based on the detection of high-risk HPV DNA in cervical smears. It also requires a laboratory for processing. Visual screening methods can be through visual inspection with acetic acid (VIA) or visual inspection with Lugol's iodine (VILI). In research,

VIA has been shown to have an average sensitivity and specificity of 77% and 86% respectively while VILI has been shown to have an average sensitivity and specificity of 92% and 85% respectively of detecting precancer or cancer (WHO, 2006). VIA/VILI is commonly used in Kenyan health facilities like Naivasha County Referral Hospital. VIA and VILI are used to inspect the cervix without magnification for abnormalities. As a result they are used where resources are limited as they do not require laboratory services. The number of precancerous lesions or screening abnormalities found in a population depends on: the frequency of screening; the age group screened and; prevalence of HIV in the screened (WHO, 2006).

2.4 Cervical Cancer Control

There are four components of cervical cancer control. These include avoiding HPV infection by behaviour change or getting vaccinated; early detection via increased awareness and screening in asymptomatic populations at risk; early diagnosis of cancer in symptomatic populations and; palliative care for advanced disease to improve the quality of life of patients and their families (NCCS, 2011; WHO, 2006).

2.5 Public Health Awareness

Health education, primary prevention and counselling are three strategies necessary in health promotion. They include messages of creating awareness on behaviour change and administration of vaccines to reduce HPV harmful effects. Family planning clinics are evolving from previously being distributers of family planning methods to providing a wide range of services including cervical cancer awareness and screening (Claeys *et al*., 2003). In Naivasha County Referral Hospital, similar information is given to patients in the MCH-FP.

A number of countries have implemented cervical cancer control programmes in recent decades with some producing significant decreases in incidence and mortality (WHO, 2006). In Kenya, the main challenges to increasing access to and improving the quality of cervical cancer screening services include low level of community awareness on the importance of screening, attitude and beliefs. This may be due to

perception that cancer is untreatable and eventually leads to death (NCCPPSP, 2012; WHO, 2006).

2.6 Screening Outcomes

Various studies have reported cervical cancer screening outcomes. A survey done on clients visiting the clinics of Family Planning Association of Kenya (FPAK) in 1999-2003 found 4.5% of Pap smears were abnormal (Claeys *et al*., 2003). The Gatune *et al*., (2005) Limuru study reported 4.3% of the Pap smears were abnormal.

Were *et al*., (2010) study found the test positivity rate was 13.9% (VIA) and 16.9% (VILI) among women attending the family planning clinic at the Moi Teaching and Referral Hospital. Another study was done on women who underwent VIA in HIV care and treatment clinics in Kenya from October 2007 to October 2010 to evaluate outcomes of cervical cancer screening. Among the women offered screening, uptake was 87% and 15% of them had a positive or unsatisfactory VIA (Huchko *et al*., 2011).

2.7 Factors Associated with Cervical Cancer Screening

A United States study on cervical cancer screening in women 18 years and older found that some characteristics associated with lower rates of Pap test uptake were; lacking a usual source of care (a place where they usually go when they are sick), low family income, low educational attainment and being unmarried (Hewitt *et al*., 2004).

In 2009, 75% of women were contacted in the Napoli *et al*., (2011) Italian study. Uptake was low and varied between regions. The study found that only 65% of women regularly undergo pap testing. A significant association was found between low-income and lack of pap testing and between a low level of education and knowledge of HPV vaccine (Napoli *et al*., 2011).

In a study in Paris, general practitioners enrolled every woman 50 – 69 years in an observational cross sectional study from December 2004 to October 2006. The study

concluded that there are marked social inequalities that included financial difficulties among the women accessing cervical cancer screening (Rigal *et al*., 2011).

A cross sectional household survey conducted among women in Petaling Jaya city in 2007 analysed association of a woman's perception to her being at risk of cervical cancer and screening practice. Knowledge of signs and symptoms, number of pregnancies, marital status, educational level and religion were found to be significant correlates of Pap smear screening. Those who were never married, no education or primary education were less likely to have a Pap smear. Only 14% of the respondents had ever heard of HPV. Pap smear screening was viewed as an unnecessary diagnostic procedure by Malaysian women who perceive themselves as healthy which could explain why it is not regular (Wong *et al*., 2013).

It is estimated that around 95% of women in developing countries have never been screened for cervical cancer (WHO 2006). A study was done to assess the influence of household socio-economic status (SES) and health care access on breast and cervical cancer screening among women in low income countries. Results showed that 4.1% of women ages 18 – 69 years had received cervical cancer screening in the past three years. Significant determinants of cancer screening included household SES and health care access (Akinyemiju, 2012).

Studies on the barriers and benefits of cervical cancer screening from the perspective of women, men and health providers in five Latin American countries were compared to other findings from the literature. The main barriers identified by all participants were accessibility and availability of quality services, facilities that lack comfort and privacy, costs and courtesy of providers. Others were inconvenient clinic schedules, unavailability of female providers and poor counselling. Cervical cancer was not perceived as preventable (Agurto *et al*., 2004). A descriptive cross sectional study to assess the awareness of cervical cancer in South-east Nigeria found the awareness to be 37.5%, its preventable nature at 31.9%, cervical screening uptake at 0.6% (Eze *et al*., 2012).

In Moshi Rural District in Tanzania, a cross-sectional study found that 22.6% of the participants had ever been screened for cervical cancer. Husband's approval of cervical cancer screening, women's level of education, women's knowledge of cervical cancer and its prevention, women's concerns about embarrassment and pain of screening, women's preference for the sex of health provider and distance to cervical cancer screening services were significant in relation to uptake of cervical cancer screening service (Lyimo *et al*., 2012).

Other barriers to cervical cancer screening uptake in developing countries include absence of knowledge about the disease, lack of familiarity with the concept of preventive health care, inconvenient appointment schedules, lack of support from families and communities. A woman's ability to make an informed decision and act on it is influenced by existing social networks and institution or community in addition to her own beliefs and behavioural patterns. Social networks include a woman's partner, family, friends, neighbours, members of women's groups or religious groups with which she may be affiliated. Other barriers included shyness, embarrassment, fear of pain or the test results (ACCP, 2004).

The place where Kenyan women first heard the screening message also had some effect on the likelihood that they would go for screening. Women who heard about cervical cancer screening at a health centre were most likely to be screened. It was also noted that women satisfied with the services they received were more likely to describe their experience to family members and friends (ACCP, 2004).

A cross sectional survey in Eldoret, Kenya on perception on cervical cancer risk, barriers to screening and previous screening found that 12.3% of the participants had been screened before. Around 22% felt that they were at risk of cervical cancer while 65% wished to be screened. The perception of being at risk was significantly associated with a felt need for screening. Fear of abnormal results and lack of finances were the most common barriers to screening (Were *et al*., 2011).

Claeys *et al*., (2003) in-depth interviews showed a positive view on screening by patients and staff in Kenya. Nurses declared promoting Pap smears to their clients.

Lack of awareness and knowledge were considered by service providers as the main barriers to screening.

An ethnographic study was done among rural women in Limuru, Kenya found that about 40% knew of cervical cancer. The most common source of information was friends (73.4%), radio (21.9%), books and magazines (20.3%), educational talks at the hospital (18.8%), Television (7.8%), seminars/conferences (6.3%) and experience or knowledge with someone who had suffered from disease (6.3%). About 70% preferred education on cervical cancer and its prevention to be in places frequented by women (Gatune *et al*., 2005).

A retrospective cohort study was done using patient chart data from HIV-infected women enrolled at the Coptic Hope Centre in Nairobi. The results indicated that 44% accepted cervical cancer screening (McKenzie *et al*., 2007).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study Site

The study was carried out at Naivasha County Referral Hospital, a level four referral hospital located in a major catchment area bordering highly populated areas. The hospital is in Naivasha District in Nakuru County which lies northwest of Nairobi (Appendix 1). The hospital has a family planning (FP) clinic that serves approximately 600 women a month and offers cervical cancer screening services using VIA/VILI. Naivasha District's main industry is agriculture especially horticulture. It is also a popular tourist destination. The hospital was selected on the basis of Naivasha being cosmopolitan with many people migrating there in search of work. The poverty rate is at 40% and the urban population at 45.8% (KNBS, 2009; CRA, 2012). Naivasha District has a population of 376,243 with the number of females at 186,160. It is assumed that this is the catchment population of Naivasha County Referral Hospital (KNBS, 2009; CRA, 2012).

3.2 Study Population

These were clients who seek services at the family planning clinic at the Naivasha County Referral Hospital. They were the participants for both the cross sectional study and the focus group discussions (FGD). Medical doctors and nurses from the hospital were the study participants for the key informant interviews (KII).

3.3 Study Design

The study used both a quantitative method and qualitative methods. This was a descriptive cross sectional study design for the quantitative method and KII and FGD for the qualitative methods. This was a concurrent triangulation mixed method study carried out from June to July 2014. It was a hospital-based study with the family planning clinic providing the entry point. Data were obtained through semi-structured questionnaires for the study participants for the quantitative part of the

study and guides for the qualitative part of the study. Quantitative method was used for objectives 1 and 2. The mixed method provided a better understanding of specific objective 3. Key informant interviews and the FGDs enabled an exploration of factors that affect cervical cancer screening uptake that cannot be captured using quantitative methods.

3.4 Sample Size

For the cross-sectional study, the sample size used was the Cochran formula, 1977 (Bartlett *et al.,* 2001).

$$n = \frac{Z^2 * p(1-p)}{d^2}$$

p = 50% (level of cervical cancer screening uptake assumed at 50% as not known)

d = 5% (level of precision)

Z = 1.96 (at 95% confidence level)

n = **384** (A sample size of 384 women attending family planning clinic)

The cervical cancer screening uptake in a family planning clinic for level 4 hospitals is not known and therefore 50% was assumed. To be able to estimate the true cervical cancer screening uptake with 95% confidence to within 5% points, a minimum sample of 384 participants was required as obtained from the tables by Lemeshow *et al.,* (1990).

For the qualitative methods, seven (7) KII were carried out. There were also two (2) FGDs carried out. Each FGD group had minimum of five (5) and a maximum of six (6) participants (Dawson *et al.,* 1993).

3.5 Sampling Method

Systematic sampling was used to choose the study participants for cross sectional study. The facility had a client base of 1200 clients for the two months that were

taken for the study. Therefore the expected number of women for the cross sectional study was 1200.

The sampling interval (k) = $\frac{1200}{384} = 3$

The first participant was chosen randomly from number 1 to 3 and subsequent clients chosen by adding the sampling interval of 3 to the previous chosen number (Lemeshow *et al.,* 1990). For the qualitative methods, purposive sampling was used to select seven study participants for the KII and the five to six study participants for each of the two FGDs. The participants were selected based on being able to provide the best information (Dawson *et al.,* 1993).

3.6 Recruitment Process

Permission to collect data for the study was obtained from the District Medical Officer of Health (DMOH), the Medical superintendent of Naivasha County Referral Hospital and the head of the FP clinic. An introduction about the study was given to the clients. After being attended to by the healthcare providers, the participants chosen were referred to the interview area. Recruitment was on a one to one basis in interview places that ensured privacy. Informed consent was requested for after the study was explained to the participants. The clients willing to participate signed the consent form. The questionnaires were administered by the researcher with the help of a research assistant on those who gave their consent.

The key informant interview participants were recruited on the basis of having first-hand knowledge on cervical cancer screening. They included medical doctors and nurses within the hospital. Participants for the focus group discussions were chosen from the clients at the family planning clinic. The focus groups discussions were held at the hospital.

3.7 Eligibility Criteria

3.71 Inclusion Criteria

- Women aged 18-49 years,
- Willing to give consent and participate.

3.72 Exclusion Criteria

- Women below 18 or above 49 years of age,
- Requires emergency care,
- Declines to participate in the study.

3.8 Ethical Considerations

Approval to conduct the study was sought from the Kenya Medical and Research Institute (KEMRI) Ethical and Research Committee and the Scientific Steering Committee (see appendices 9 and 10). Permission to collect data was obtained from the DMOH, Medical Superintendent of Naivasha County Referral Hospital and the head of the FP clinic.

Recruitment Strategy

An introduction about the study was given to the clients. After being attended to by the healthcare providers, the participants chosen as per systematic sampling were referred to the interview places. Recruitment was on a one to one basis in interview places that ensured privacy.

Informed Consent and Risks

Informed consent was obtained from the participants who were eligible for the study and consented to participate. Consent from the participants was also sought on the use of the tape recorder during the key informant interviews and focus group discussions. Participants were informed of their right to withdraw from the study anytime they wished to. They were informed of the psychological risks like embarrassment or anxiety at the questions asked and the time taken to answer the questions. The participants were served as quickly as possible. In addition to this, a

place that ensured privacy during the interviews was used (see appendices 3, 5 and 7).

Anticipated Benefits

The study's benefit was identifying challenges faced by women in accessing cervical cancer screening services so that they can be addressed to improve health care. No cash benefits were offered to the participants.

Confidentiality

Participants were assured of confidentiality of information collected and participant numbers used in the questionnaires were different from any patient registration information to ensure confidentiality. The data were obtained through questionnaires administered to the participants to determine the outcomes and factors associated with uptake of cervical cancer screening. Data were stored in a secure locked cabinet. Passwords were used to protect data on the computer. In the key informant interviews and focus group discussions, results focused on the content of discussion with the respondents not being identified. The data obtained was be kept, until approval of the thesis and publication, in locked cabinets and on password controlled computers (see appendices 11 and 12).

3.9 Data Collection Instruments

Consenting participants were interviewed using a semi-structured questionnaire for the quantitative part of the study (see appendix 4). The questionnaires were interviewer administered and managed (see appendix 2). Test results were confirmed from the patient file. Information sought for in the questionnaires included socioeconomic factors, access to health care, exposure to risk factors and factors related to cervical cancer screening. The key informant interviews and focus group discussions were conducted with guides (see appendix 6 and 8). Both note taking and tape recording were used to record information for the FGD and KII. This was to help get comprehensive information with regard to on-going VIA/VILI screening programme.

3.10 Data Management and Analysis

Data from the cross-sectional questionnaires was entered, validated and analysed using Statistical Package for Social Sciences (SPSS) version 20.0. For continuous data, distribution characteristics were confirmed using Kolmogorov-Sminorv test and Exploratory Data Analysis (EDA). The economic group levels was achieved by first undertaking factor analysis. Then the two factors contributing the most were analysed using a standardized index (SI) (Krishnan, 2010). The results of the SI were then divided into three equal economic levels of 33.3%. The risk level was a composite variable obtained by grouping those exposed to any co-factors [like tobacco smoking, high parity, and co-infection with HIV] (WHO/ICO, 2010) necessary for progression of HPV infection to cervical cancer and those not exposed. During analysis, the participants were divided into three age-groups. This was based on high risk HPV being more common in women under 25 years and considering the approximately 10 year-developmental period to cervical cancer, the best age to be screened if only screened once is over 35 years of age (WHO/ICO, 2010). The knowledge level was obtained from the correct answers the participants gave for the knowledge factors. This was then scored into three levels; high (10-7), medium (6-4) and low (3-0) (Appendix 4, question 23). Comparison between those who have and those who have not undergone cancer screening was carried out using Students T-test for normally distributed continuous variables and Mann-Whitney U for skewed continuous variables. For categorical variables, Chi-square and where applicable Fisher's exact probability test was used. To identify factors associated with cancer screening uptake, Binary Logistic Regression analysis was done. A p-value of less than 0.05 was considered significant.

Qualitative data were coded thematically by the researcher and a research assistant. Data were then analysed manually using content analysis. The resulting themes were entered into MS Word to provide a meaningful reading of the content (Dawson *et al.*, 1993). In the data analysis, information was sorted into key categories to facilitate thematic analysis. Significant and recurrent issues were identified.

CHAPTER FOUR

RESULTS

4.1 Demographic and Economic Characteristics

A total of 384 participants were enrolled for the cross sectional study. Age-group of 25-34 had the highest number of participants at 47.4%. A large percentage of the participants (94.8%) were married. Forty-five percent of the participants had secondary level of education followed closely by a primary level of education (42.4%). Almost half of the participants (44.3%) were dependent on relatives with 43.2% of them being housewives who depended on their husbands or partners. Those working for an income were either in salaried or self-employment and accounted for 55.5%. Almost all the participants were Christians (99.2%). Those who lived in the area near the hospital accounted for 68.5% (Table 4.1).

There were two focus group discussions (FGD) held for the study. The first FGD had five participants while the second FGD had six participants. All the participants were married. Median age for the first FGD was 30 years and ranged from 23 to 34 years. Their level of education was; 1 primary, 3 secondary and 1 college. For occupation; 3 were self-employed while 2 were unemployed. Median age for the second FGD was 29 years and ranged from 23 to 47 years. Their level of education was; 3 primary, 1 secondary and 2 college. For occupation; 4 were in salaried employment, 1 self-employed and 1 unemployed.

There were seven (7) key informant interview (KII) participants. They ranged in age from age 35 to 59. There were five females and two males. They were all involved in various ways in cervical cancer screening.

Table 4.1: Socio-demographic characteristics of study participants (N = 384)

Variable	Frequency	Percent (%)
Age group (years)		
Less than 25	160	41.7
25 - <35	182	47.4
35 and above	42	10.9
Marital status		
Single	17	4.4
Married (monogamous)	356	92.7
Married (polygamous)	8	2.1
Divorced/separated	3	0.8
Widowed	0	0
Formal education level		
None	4	1
Primary	163	42.4
Secondary	171	44.5
College (Post-secondary)	46	12
Source of income		
Employed (salaried)	82	21.4
Husband/ partner	166	43.2
Self-employed	131	34.1
Parent	3	0.8
Siblings	1	0.3
Non-response	1	0.3
Religion		
Christian	381	99.2
Muslim	2	0.5
Others	1	0.3
Residence (location)		
Area near the hospital	263	68.5
Other areas in Naivasha	118	30.7
Area outside Naivasha	3	0.8

4.1.1 Economic Characteristics of Participants

Over three quarters (83.9%) were living in rented houses. Variables in Table 4.2 were used to group the participants into three economic groups: low, medium and high. The economic level with the highest percentage was the middle level at 90.4%.

Table 4.2: Variables used to calculate income levels (N=384)

Variable	Frequency	Percent (%)
House ownership		
Rental	322	83.9
Owner	62	16.1
Type of wall material		
Mud wall	11	2.9
Wooden/Iron sheet	37	9.6
Stone	329	85.7
Bricks	7	1.8
Type of roofing material		
Iron sheets	374	97.4
Tiles	6	1.6
Stone	4	1
Main floor material		
Natural (earth/dung)	27	7
Wooden planks/Bamboo	1	0.3
Finished floor (tiles/polished wood)	17	4.4
Cement	339	88.3
Main cooking fuel		
Electricity	3	0.8
LPG/Natural gas	101	26.3
Biogas	2	0.5
Charcoal	214	55.7
Firewood	24	6.3
Paraffin	40	10.4
Economic level		
Lower	30	7.8
Medium	347	90.4
Higher	7	1.8

4.1.2 Access to the Hospital

The hospital was the nearest health facility for 83.3% of the participants and yet it was the usual health facility for 86.7%. Walking to the hospital was the common mode of transport for 58.9% of the participants (Table 4.3). Time taken to reach the hospital had a median of 30 minutes (Table 4.4).

Table 4.3: Access to Naivasha County Referral Hospital

Variable	Frequency N=384	Percent (%)
Nearest facility to client's home		
Yes	320	83.3
No	64	16.7
Usual facility for health care		
Yes	333	86.7
No	51	13.3
Mode of transport		
Motor vehicle/Matatu	120	31.3
Walking	226	58.9
Motorbike	36	9.4
Both walking and Matatu	2	0.5

Table 4.4: Access to Naivasha County Referral Hospital (continuous variables)

Variable	N	Median	Interquartile range (IQR)	Minimum-Maximum
Time to reach hospital via:				
Matatu/Motor vehicle	120	30	20-35	5-180
Walking	226	30	15-30	2-120
Motorbike	36	20	10-30	1-60
Both walking and Matatu	2	40	40-40	40-40

4.1.3 Participants Background History

About 20.1% of the study participants were exposed to co-factors that increased their risk of cervical cancer. For the 99.2% who were using a family planning method, 50.9% were on the injectable contraceptive method (Table 4.5).

The participants had a mean age of 26.81 years with a standard deviation of 6.14. The study participants had a median 2 children with a minimum of 1 and a maximum of 9 (Table 4.6).

Table 4.5: Participants background history

Variable	Frequency (N=384)	Percent (%)
Client's risk level on exposure to co-factors		
Low level	307	79.9
High level	77	20.1
Method of family planning (n=381)		
Injectable	194	50.9
Pill	97	25.5
IUD	45	11.8
Implant	42	11
Male/female condom	1	0.3
Non-response	2	0.5

Table 4.6: Participants background history (continuous variables)

Variable	Mean	Standard deviation	Median	Minimum – Maximum
Age	26.81	6.14	-	18 – 48
Parity	-	-	2	1-9

4.2 Cervical Cancer Screening Uptake

A total of 59 participants (15.4%, 95% confidential interval (CI) 11.8-19.0%) had been screened both from before study period and during the study period for cervical cancer (Figure 4.1).

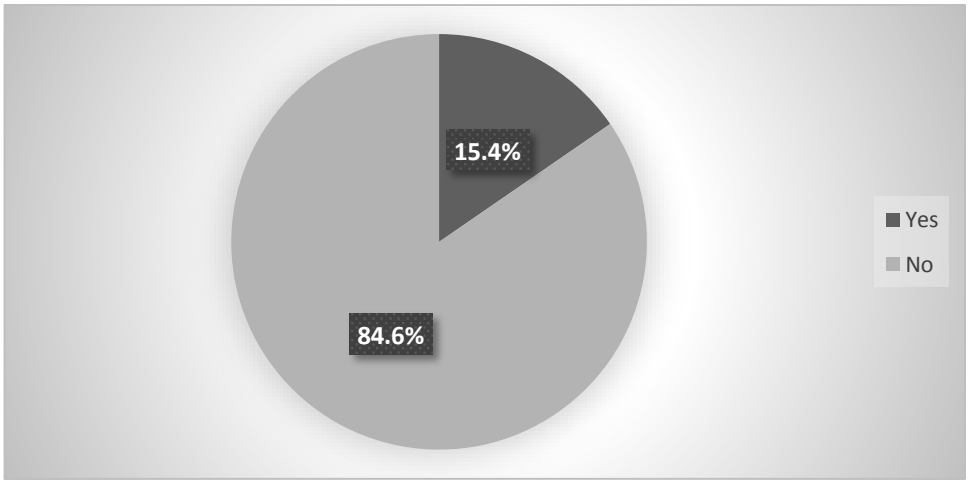

Figure 4.1: Cervical cancer screening uptake at Naivasha County Referral Hospital

Cervical cancer screening uptake as reported by participants screened before the study period was higher in 2013 and 2014 (Figure 4.2).

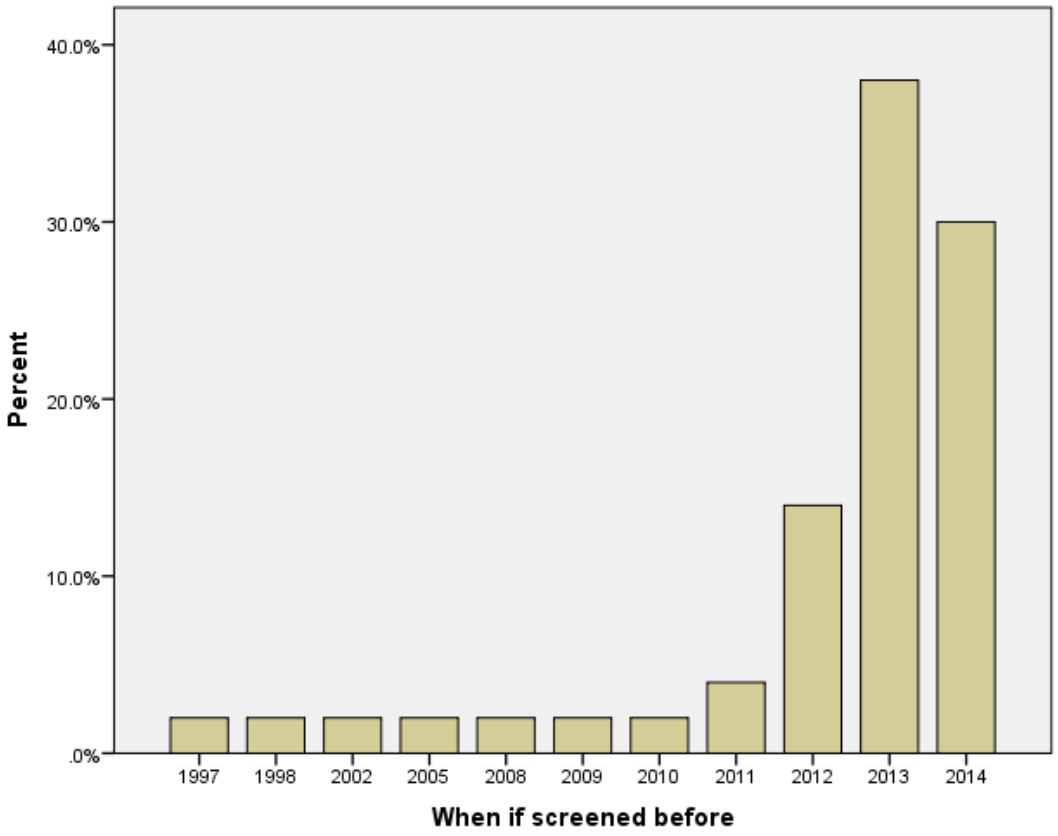

Figure 4.2: Percentage per year for participants reporting to have been screened for cervical cancer before study period (n=53)

4.3 Test Results among Those Screened

During the study period, the proportion of screening was 2.3%. Of these, 44.4% had positive VIA/VILI results. From those screened at that time, 66.7% reported that the screening procedure had been explained. All of the study participants screened (100%) reported that they would tell people they knew closely about cervical cancer screening (Table 4.7).

Table 4.7: Information on screening during study period

Variable	Frequency n=9	Percent (%)
Screened during study period		
Yes	9	2.3
No	375	97.7
Screening results		
Positive VIA/VILI	4	44.4
Negative VIA/VILI	5	55.6
Screening process explained		
Yes	6	66.7
No	3	33.3
Tell others know closely of screening (if screened during study period)		
Yes	9	100
No	0	0

4.4 Factors Affecting Cervical Cancer Screening Uptake

Various key factors were identified that affected cervical cancer screening uptake. These included knowledge on cervical cancer and screening, source of information and factors associated with cervical cancer screening. More than 70% were aware that cervical cancer can be screened for. However, only 13.8% had ever been screened before (Table 4.8).

In the FGD, low screening uptake was mentioned by a participant. *"Most women have not gone for cervical cancer screening (FGD-5)."* This was also captured in the KII. *"Screening uptake is very low and majority of the women coming to our facilities are not screened because of a number of issues (KII-4, 6)."*

Table 4.8: Participants cervical cancer screening information (N=384)

Variable	Frequency	Percent (%)
Aware of cervical cancer screening		
Yes	269	70.1
No	115	29.9
Ever screened before		
Yes	53	13.8
No	331	86.2
Health worker as a source of information for those screened before study period (n=36)		
Nurse	29	80.6
Doctor	5	13.9
Community Health Worker	2	5.6
Know someone screened		
Yes	95	24.7
No	289	75.3

In the key informant interviews the uptake was seen from two different perspectives; one was that some challenges that included long queues, discouraged women going to the hospital being screened while another group described screening uptake to be high during outreach campaigns held in churches and with women groups.

For those who had ever been screened, 67.9% had got this information from a healthcare worker (Figure 4.3). From among the healthcare workers, nurses (80.6%) were reported as the most common source of this information. More than three-quarters of the study participants (75.3%) did not know of someone who had been screened for cervical cancer (Table 4.8).

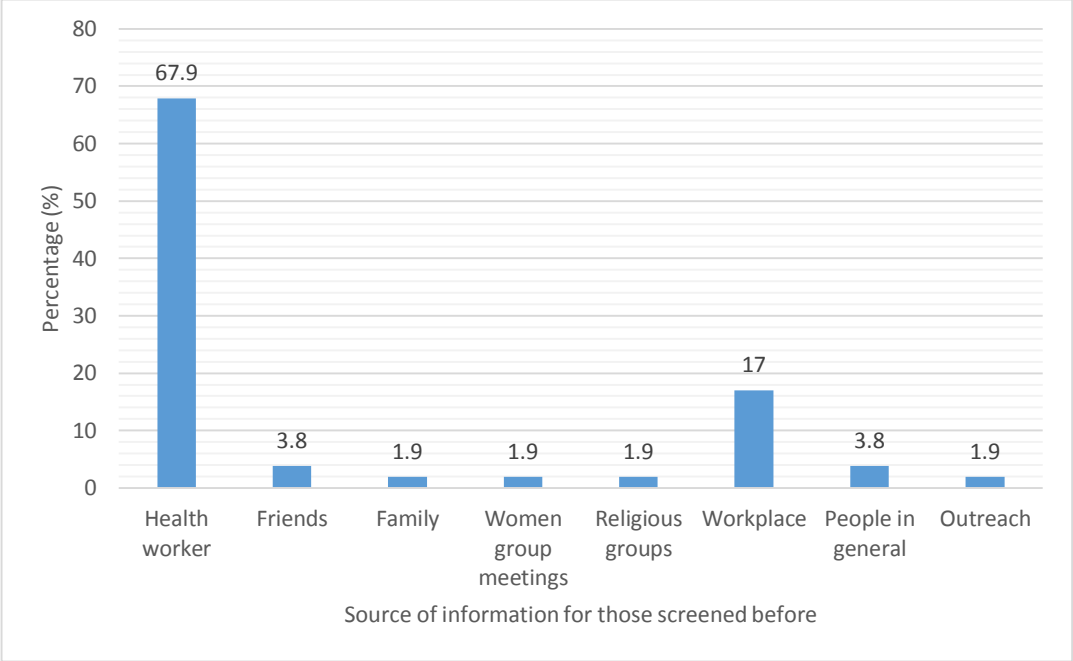

Figure 4.3: Source of information for study participants screened before the study period

4.4.1 Reasons for Not Screening

Study participants who were not screened during the study period gave various reasons for not being screened. The most important were no reason (26.2%) and did not know that cervical cancer can be screened for (20.9%). Those who were not aware of where they can be screened for cervical cancer were 8.3% while 2.9% reported that they had not been asked to be screened by the healthcare worker (Table 4.9).

In the FGD, similar and other reasons as to why participants were not screened were given by the participants. These included waiting for many hours before being attended to, participants feeling they were not being listened to, not having heard of cervical cancer or its prevention, increased focus on breast cancer screening, inadequate knowledge on cervical cancer screening, fear that having cervical cancer leads to death, fear of the screening process, belief that one needs to have medical problems in the genital tract, belief that a healthcare practitioner will notice a

problem during other routine practices such as a caesarean section and being turned away because they are too young to be screened.

Table 4.9: Reasons for not being screened (n=375)

Variable Reason participant was not screened	Frequency	Percent (%)
No reason	98	26.2
Do not know of cervical cancer screening	78	20.9
No information on cervical cancer	37	9.9
Not aware of where cervical cancer screening is done	31	8.3
Will be screened at a later date	24	6.4
Been screened before	20	5.3
Not sick	20	5.3
Not decided	17	4.5
Busy schedule	13	3.5
Not asked by healthcare worker	11	2.9
Fear	8	2.1
Do not want to be screened	5	1.3
Financial constraints	5	1.3
Was waiting to deliver	2	0.5
Others*	1	0.3

**Others are long waiting queue, distance from facility, forgot to go for screening, advised to wait until 30 years of age and was in school each at 0.3%.*

Inadequate communication between healthcare providers and clients was given in the following response. *"Health practitioners do not listen carefully to what one tells them (FGD: 1-5)."* In case of any illness FGD participants reported that they were not informed of what they were suffering from, but were just given medicine. Most of the participants were also not aware of how many times they should be screened. In addition, they also reported that if screening was brought, women were ready to take up screening. *"For example how we have got used to being screened for HIV overtime so when cervical cancer screening is brought we'll get used to it (FGD-2)."*

Fear of cancer was also mentioned. *"There is no need to stress myself finding out if I have cervical cancer now, it is better to wait until that day reaches and I am told I have it (FGD-5, 8)."* Fear of the screening process including the instruments to be

used was mentioned. In both the FGD and KII, participants freely talked on family planning methods but were afraid of talking about cervical cancer. This was mentioned to be especially common among the younger women.

Waiting for illness or abnormal genital discharge were mentioned as some of the things FGD participants saw as necessary before they sought medical help. Participants also reported that age was a barrier with some of them being told to wait until they were 30 years old before going for screening.

In the key informant interviews, some reasons for not screening clients for cervical cancer were: inadequate screening rooms, lack of enough trained workers, inadequate screening equipment and reagents, large number of clients, fear of pain and getting cancer, and resistance to new services by some clients and staff.

The high work load was reported to be as a result of referrals from health centers and dispensaries in rural facilities where staff were not trained on cervical cancer screening. It was also due to VIA/VILI screening only available at the FP clinic where other services of FP, postnatal care and breast cancer screening are also offered. The high numbers of clients proved to be a challenge especially when encouraging other clients whose target visit had not been the FP clinic to be screened. The result was that those specifically coming for screening got tired of waiting in the queues. As a result screening was done on specific cases. *"So we really do screening on women using IUD and if there is a mother who has a problem (KII-1, 3)."* This brought out the need for specific rooms. *"If the women know a specific room is for screening it would encourage uptake as they know where to go (KII-3, 4)."* Participants in the FGD supported this view.

Some clients preferred to be screened by female healthcare providers. Other preferred older healthcare providers as was captured in the response. *"Some of them are elderly mothers, if they find whoever is screening is a grandchild and because of the position for screening they are ashamed and don't want to be screened (KII-3)."*

Some key informants responded that cost of screening was a challenge for some clients. This was especially visible with the high turnout in the villages when free cervical cancer screening was offered. However, other key informants differed and reported that the cost was affordable. The FGD participants were not aware of the cost of screening though they hoped it was affordable. *"Cost should be uniform and not to charge differently depending on each woman's level of income (FGD-5)."*

4.4.2 Information on Cervical Cancer

More than half (66.9%) had heard about cervical cancer (Table 4.10). Some FGD participants also reported that they had heard of cervical cancer. The most common means they got cervical cancer information was from health workers and media both at 32.7% (Table 4.10). Nurses at 81% were the main source of information among these health workers. Radio (51.2%) followed by television (TV) (25%) and both radio and TV (14.3%) were the most common sources of media information (Table 4.11). Other sources were mentioned in the FGD. *"I heard of cervical cancer because someone I knew died from it. Though I was not taught but did my own investigations (FGD-7)."*

Table 4.10: Participants information on cervical cancer (N=384)

Variable	Frequency	Percent (%)
Heard about cervical cancer		
Yes	257	66.9
No	127	33.1
Source of this information (n=257)		
Health workers	84	32.7
Media	84	32.7
Friends	29	11.3
Flower farm workplace	12	4.7
Religious groups	10	3.9
People/ neighbours talking	10	3.9
Learning institution e.g. high school	9	3.5
Family	9	3.5
Outreach	4	1.6
Seminars	4	1.6
Women group meetings	1	0.4
One on one/ house to house visits	1	0.4
Cervical cancer preventable (n=257)		
Yes	146	56.8
No	42	16.3
Do not know	69	26.8
Causes of cancer mentioned		
Do not know	198	51.6
Family planning methods	33	8.6
Food eaten	34	8.9
Multiple partners	33	8.6
Sexual activity	32	8.3
Lack of awareness	32	8.3
Cervical wounds	15	3.9
STDs	5	1.3
Stress	5	1.3
Smoking	5	1.3
Pregnancy at early age	2	0.5
Starting sexual activity early	2	0.5
Natural occurrence	2	0.5
Inherited	2	0.5
Abortion	2	0.5
Others*	1	0.3

**Others are long duration without pregnancy, dirt, wet clothes, method used to deliver baby and drugs each at 0.3%.*

Table 4.11: Participants source of information on cervical cancer

Variable	Frequency	Percent (%)
Health workers (n=84)		
Doctor	14	16.7
Nurse	68	81
CHW	2	2.4
Media (n=84)		
Radio	43	51.2
TV	21	25
Radio/TV	12	14.3
Advertisement	3	3.6
Poster	2	2.4
Newspaper	1	1.2
Internet	1	1.2
Magazine	1	1.2
Preferred media source of information (n=24)		
Radio	11	45.8
TV	5	20.8
Radio/TV	3	12.5
Internet	3	12.5
Books	2	8.3

Over half (56.8%) of the study participants reported that cervical cancer was preventable. Most of the FGD Participants mentioned that they did not know about prevention of cervical cancer, but were willing to be taught. However others gave some ways of preventing cervical cancer. *"Watching what we eat and by being clean (FGD-2, 3 and 5)."*

Participants mentioned the sources of information they would prefer other than how they had received information on cervical cancer. When asked about how they would prefer to be given information on cervical cancer, 74.2% of the participants wanted to be given educational talks at the hospital. The other choices are shown in the figure below with less than 1% wanted the information given through the workplace or via Short Message Service (SMS) (Figure 4.4).

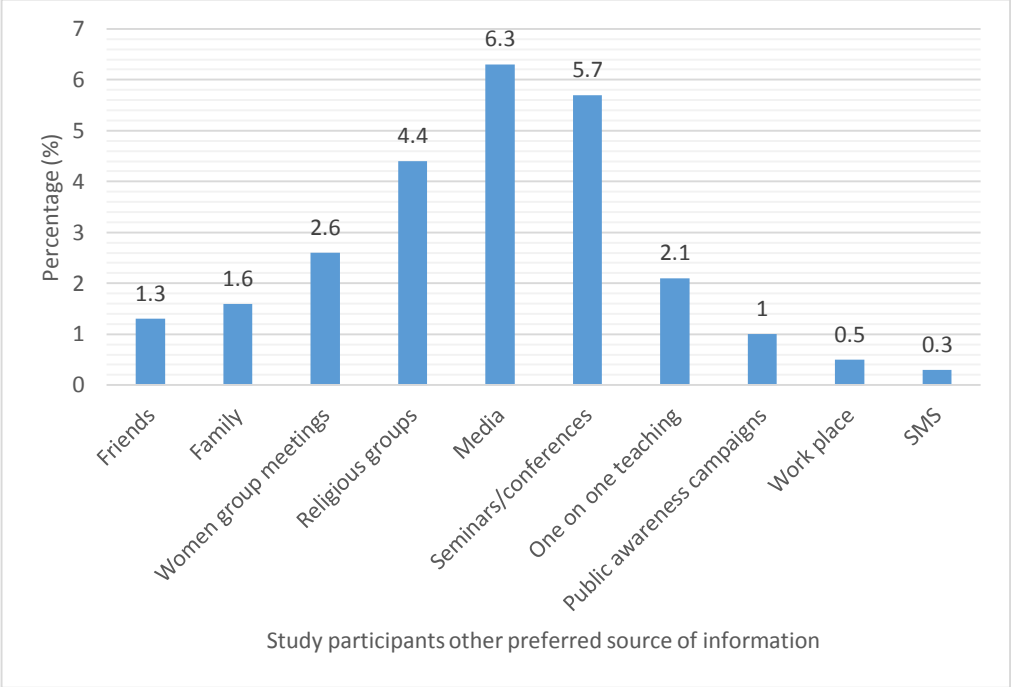

Figure 4.4: Other preferred source of information on cervical cancer

The most preferred form of media for getting information was the radio at 45.8%. This was slightly lower than the 51.2% who had heard about cervical cancer through that same means of communication (Table 4.11). In the FGD, the modes of communication mentioned were: hospital talks, radio and TV, posters and pamphlets, church talks and outreaches.

Most of the participants preferred that the information was given at the hospital in terms of health talks similar to the cross-sectional survey. *"There are those who do not have radios or TVs; or the information might be brought when we are not listening therefore it is better when we get the information at the hospital (FGD-2, 5 and 7)."* Similar views were reported in the KII that not all clients had radios or TVs especially in the rural areas.

Posters, TV and pamphlets were preferred by the educated participants who could read. The preferred language for communication by FGD participants was Kiswahili or English for those in urban areas with local languages favoured in rural areas. For some participants who had busy schedules, church was preferred by those who attend

them. *"After the church service, time can be taken to inform us as it is difficult for women to leave their chores and also to get many women together other times (FGD-7)."*

The KII mentioned various ways that they used to inform women on cervical cancer screening. These were outreaches, morning health education talks in hospital, one on one talks in the family planning clinic, media (for example radio, TV, posters, pamphlets), and camps during cancer month. Outreaches were done in churches, women group meetings, chief barazas and girls high schools.

Some key informants reported that health education talks at the MCH were important. These were given in Kiswahili. *"We talk on the importance of screening and making it routine plus we spare a few minutes so that the clients can ask questions (KII-5)."* However, some key informants preferred one on one as it was easier to make sure clients understood the importance of screening. Others pointed out the importance of visual aids. *"They have an impact as when women look at it and they think that they look like that, they say now let me be screened (KII-7)."*

In the FGD, the women listed the information they needed. The FGD participants wanted to know cervical cancer causes, prevention, importance of screening, days and places for screening, who is screened, what to expect during the screening process and which part of the body is screened, number of times to be screened, immediate screening results, what to do if found to have cancer and if it was curable. Some of the specific responses were: *"Is it only women who are screened (FGD-11)?"*; *"We don't want to be just told to enter and get ready without guidance. This causes women to fear to be screened (FGD: 3-5)."*

In the end, FGD participants reported that when they are taught on cervical cancer and its screening, they would be more willing to be screened. Key informants mentioned similar information that clients usually asked for as in the FGD. *"Women also ask if men can be treated for HPV (KII-5)."*

More than half (51.6%) of the study participants did not know of what caused or increased the chance of a woman getting cervical cancer. The others gave different reasons as shown in Table 4.10.

Some of the FGD participants gave different views on what they thought caused cervical cancer. These included: food eaten especially crops grown with chemicals, re-cycling cooking fat, stress, uncleanliness such as wearing dirty clothes, family planning methods for example the coil and long duration of using family planning and age at pregnancy. "*You can get cervical cancer by getting pregnant early, for example, 15 years or getting pregnant in older age, for example, 40 years (FGD-8).*" One participant mentioned the method of giving birth. *"I know someone whose problems with cervical cancer started after she had a C-section (FGD-7).*" The rest of the participants did not know what caused it.

4.4.3 Cervical Cancer Screening Knowledge

A large percentage (92.9%) had medium to high knowledge levels (Table 4.12).

Table 4.12: Knowledge level of cervical cancer screening

Knowledge	Frequency N=384	Percent (%)
Low	27	7
Medium	239	62.2
High	118	30.7

Participants who mentioned that women can be screened for cervical cancer even if they were healthy were 93% (Table 4.13). However, responses on when the screening was to be done was varied with 75% saying it should be done whenever a woman wants. More than fifty (52.9%) reported that it should be routine. Views given on the number of times a woman should be screened varied from several months to a year. *"I think women are screened after every 3 months (FGD-5).*"

Table 4.13: Knowledge on Cervical Cancer Screening (N = 384)

Participants Views on Screening	Frequency	Percent (%)
A woman can be screened if healthy	357	93
Screening helps a woman know if there is a problem with her cervix	357	93
Screening should be done whenever a woman wants	288	75
A positive screen test means a woman has cancer	210	54.7
Screening should be routine	203	52.9
Screening should be only at advice of health worker	151	39.3
Screening tells a woman she has a fatal condition with no cure	116	30.2
Screening is painful	89	23.2
The screening process is like getting a vaccine	85	22.1
Screening should be once in a lifetime	16	4.2

Some study participants (23.2%) mentioned that the screening process was painful while 39.3% would only be screened at the advice of a health worker (Table 4.13). This was also reported in the FGD where participants were afraid that screening was painful. *"I heard it is painful so I wouldn't like to be screened unless I am in pain from illness (FGD-8)."* The FGD participants also mentioned that they waited until a healthcare practitioner advised them to be screened.

Key informants encountered various challenges such as inconclusive VIA/VILI results. This led to clients being referred for Pap smear test which had a higher cost. They also had to deal with clients who came to be screened when already in the cancer stage. Women seen in palliative care were mentioned as those in their 30s and 40s years of age. Fear of cancer also resulted in clients with unrelated symptoms, such as illnesses in the lower abdomen, rushing for screening.

In spite of the challenges, key informants mentioned positive aspects. *"We have a good referral system whereby clients are screened and treated at the hospital (KII-1, 5)."* Clients requiring further treatment were referred to the Kenyatta National Hospital. Key informants also viewed VIA/VILI as affordable. Supportive leadership at the hospital was also acknowledged.

Another positive aspect mentioned was the response of screened and treated clients. *"When we treat a woman, she tells others that if you go to Naivasha you are screened and if there is a problem it is solved there so you find the women coming because they have been informed by one of their own (KII-3)."*

Support from Non-governmental Organizations (NGOs) and reagents that remain after outreaches also aided in cervical cancer screening. Key informants also mentioned that women had a positive attitude towards screening with many turning up during cancer days for screening. However, they were unable to screen all of them. *"Women who have heard of cervical cancer screening in outreaches, but missed also come to the hospital to ask for screening (KII-7)."*

Women of age 30 and above, who have children, were seen as being more receptive to screening by key informants. However, there were also those of 18-19 years who had medical problems with the genital tract though the main reason they wanted to be screened was that they were afraid of getting cervical cancer.

4.4.4 General Knowledge on Cervical Cancer

Over eighty percent (89.6%) had never heard of HPV. Of those who knew of HPV, 74.4% did not know its mode of transmission. Almost all (97.4%) the study participants would advise the women they knew closely to be screened for cervical cancer (Table 4.14). Some FGD participants also reported that if screened they would tell other women. *"If I am given information on cervical cancer, I will go telling people I am close to that there is such a disease (FGD-8)."*

A large percentage (97.7%) had not been told they had any kind of cancer by a doctor. The participants who saw their risk of getting cancer in the future as low were 42.7% with 18.8% reporting it as high (Table 4.14). The FGD study participants had different views on who they thought was at risk of getting cervical cancer. These included women at menopause, women with children, very young and very old women. There were also some participants who reported that they did not know who was at risk.

Table 4.14: General knowledge on cervical cancer (N=384)

Variable	Frequency	Percent (%)
Ever heard of HPV		
Yes	39	10.2
No	344	89.6
Non-response	1	0.3
Ways of transmission (n=39)		
Do not know	29	74.4
Contagious	1	2.6
Sexually	9	23.1
Advice women they know closely to be screened		
Yes	374	97.4
No	9	2.3
Non-response	1	0.3
Ever told had cancer by doctor		
Yes	8	2.1
No	375	97.7
Non-response	1	0.3
Future risk of cancer		
Low	164	42.7
Medium	109	28.4
High	72	18.8
Do not know	39	10.2
Partner/Husband know of cervical cancer		
Yes	160	41.7
No	186	48.4
Do not know	33	8.6
Non-response	5	1.3
Hard to discuss symptoms of female genital tract		
Yes	67	17.4
No	315	82
Non-response	2	0.5
Hard to discuss symptoms of female genital tract with	31	8.1
Male health provider	152	39.6
Person of different culture/tribe	226	58.9
Another woman she knows closely	15	3.9
A female health provider		

Husband/partner lack of knowledge of cervical cancer was high (48.4%) (Table 4.14). Though some FGD participants did not know if their husbands/partners knew about cervical cancer, they were willing to share information they had with them.

However, they also had some misgivings. *"If we who are the women are ignorant, we don't expect most of our husbands to know about cervical cancer (FGD-7)."* In the KII it was reported that though spousal support was good, men were not actively involved. *"Husbands have no problem with screening and even tell their women to go and be checked (KII-7)."*

Many of the women (82%) did not find it hard to discuss medical issues related to the female genital tract (Table 4.14). There were varied responses in the FGD on the preference of the healthcare practitioner for the screening. While some participants did not mind the age and gender of who screened them, others had preferences. *"I prefer older healthcare providers as they are more understanding and with more experience especially if they have children of their own (FGD-8 and 11)."* For older women both gender and age was a factor. *"I want to be screened by a woman my age, it is embarrassing to be screened by someone who is like my daughter (FGD-7)."*

4.4.4.1 Building Cervical Cancer Screening Capacity

In the FGD, the study participants mentioned performing the screening when using some family planning methods such as when putting the coil. They also mentioned healthcare practitioners having a friendlier attitude. *"We are afraid to ask for cervical cancer screening as fear we will be quarrelled and so we wait to be asked by healthcare providers (FGD-4)."* Other things mentioned were being given adequate information on cervical cancer and screening so that more women know about it and therefore go for screening. It was reported in the FGD that those aware of other women having trouble with cervical cancer were willing to be screened.

Key informants also gave some suggestions on how to build cervical cancer screening capacity:

- Market screening to mothers in the maternity, female, CCC, surgical and gynaecology wards.

- More training of healthcare personnel to be able to access women from all areas of the hospital.
- To train healthcare personnel on cervical cancer screening in dispensaries and health centres to increase accessibility by women in rural facilities.
- Sensitize on importance of newly introduced services for example cervical cancer screening.

4.4.5 Factors Associated with Cervical Cancer Screening Uptake

4.4.5.1 Bivariate Association Analysis

After bivariate analysis, some of the variables had a significant p-value of < 0.05. These were; age group, residence, employment status, usual treatment centre, ever heard of cervical cancer, aware of cervical cancer screening, knowing someone screened and partner/husband knowledge of cervical cancer (Table 4.15).

Age group was significant (p=<0.001) with age group of 25-<34 with the highest frequency (49.2%). The residence of the participants was also significant (p-value of 0.010). Having been screened had a higher frequency for those living near the hospital (54.2%) compared to those living farther from the hospital (45.8%). Those working was significant (p=0.001) with those working having a higher frequency (76.3%) of having been screened. Having been screened had a higher frequency of 94.9% for those who had ever had of cervical cancer than those who had not (5.1%) (Table 4.15).

Table 4.15: Association between screening and other variables

Variable	**Screened**				**P-value**
	Yes = 59		**No = 325**		
	Frequency	%	Frequency	%	
Age group (years)					
Less than 25	14	23.7	146	44.9	
25 - <35	29	49.2	153	47.1	<0.001*
35 and above	16	27.1	26	8.0	

Residence					
Area near Hospital	32	54.2	231	71.1	
Other areas	27	45.8	94	28.9	0.010*
Educational level					
Primary and below	25	42.4	142	43.7	0.851
Secondary and above	34	57.6	183	56.3	
Marital status					
Single	2	3.4	15	4.6	
Married (monogamous)	54	91.5	302	92.9	0.436
Married (polygamous)	2	3.4	6	1.8	
Divorced/separated	1	1.7	2	0.6	
Employment status					
Working	45	76.3	168	51.9	
Unemployed	14	23.7	156	48.1	0.001*
Economic level					
Low	6	10.2	24	7.4	
Middle	53	89.8	294	90.5	0.544
High	0	0	7	2.2	
Nearest facility					
Yes	45	76.3	275	84.6	
No	14	23.7	50	15.4	0.114
Usual treatment centre					
Yes	43	72.9	290	89.2	
No	16	27.1	35	10.8	0.001*
Risk of cervical cancer					
High	17	28.8	60	18.5	
Low	42	71.2	265	81.5	0.068
Ever heard of cervical cancer					
Yes	56	94.9	201	61.8	
No	3	5.1	124	38.2	<0.001*
Aware of cervical cancer screening					
Yes	59	100	210	64.6	
No	0	0	115	35.4	<0.001*
If cervical cancer is preventable					
Yes	34	60.7	112	55.7	
No	7	12.5	35	17.4	0.657
Do not know	15	26.8	54	26.9	
Know of someone screened					
Yes	41	69.5	54	16.6	
No	18	30.5	271	83.4	<0.001*
Knowledge level					
Low	3	5.1	24	7.4	
Medium	32	54.2	207	63.7	0.221

High	24	40.7	94	28.9	
Ever told had cancer					
Yes	1	1.7	7	2.2	
No	58	98.3	317	97.8	1.0
Perceived risk of cancer					
Low	33	55.9	131	40.3	
Medium	11	18.6	98	30.2	0.139
Do not know	5	8.5	34	10.5	
High	10	16.9	62	19.1	
Partner/Husband knowledge of cervical cancer					
Yes	41	69.5	119	37.2	
No	17	28.8	169	52.8	<0.001*
Do not know	1	1.7	32	10.0	
Difficulty of discussing symptoms of female genital tract					
Yes	8	13.8	59	18.2	
No	50	86.2	265	81.8	0.415

**Significant values with p< 0.05*

4.4.5.2 Multivariate Analysis Results

Variables which had a p-value ≤ 0.25 (Hosmer and Lemeshow, 1989) were subjected to binary logistic regression analysis. These variables were: age group, residence, employment status, nearest hospital facility, usual treatment centre, risk of cervical cancer, ever heard of cervical cancer, knowing someone screened, knowledge level, perceived risk of getting cancer and partner/husband knowledge of cervical cancer (Table 4.15). The variables retained in the model are shown in Table 4.16. These were the variables found to be associated with screening uptake. Employment status was significant (p=0.023). Those working were 2.35 times more likely to have been screened than those not working. The hospital as a usual treatment centre was significant (p=0.041). Those who indicated that the hospital was the usual treatment centre were less likely to have been screened (OR=0.43) (Table 4.16).

Table 4.16: Multivariate analysis result

Variable	β	Se (β)	α - value	Exp (β)	95% C.I.
Employment status					
Working				1.0	
Unemployed	0.856	0.376	0.023	2.35	1.13-4.92
Usual treatment centre:					
Yes				1.0	
No	-0.849	0.415	0.041	0.43	0.19-0.97
Risk of cervical cancer					
High				1.0	
Low	0.880	0.399	0.028	2.41	1.1-5.27
Ever heard of cervical cancer					
Yes				1.0	
No	1.729	0.631	0.006	5.64	1.64-19.41
Know someone screened					
Yes				1.0	
No	2.299	0.353	<0.001	9.97	4.99-19.916

Multivariate results also showed that exposure to factors that increased the risk of cervical cancer was significant (p=0.028). Those at high risk were 2.41 times more likely to have been screened than those at low risk.

Having ever heard of cervical cancer was significant (p=0.006). Participants who had ever heard of cervical cancer were 5.64 times more likely to have been screened. Knowing someone who has been screened was highly significant (p<0.001). Those who knew someone who had been screened were 9.97 times more likely to have been screened (Table 4.16).

CHAPTER FIVE

DISCUSSION

With the overall burden of cervical cancer projected to continue rising over the next decade several projects in Reproductive Health and in HIV have been offering cervical cancer screening using VIA/VILI. The study at Naivasha County Referral Hospital used a concurrent triangulation mixed method with descriptive cross sectional design, key informant interviews and focus group discussions. The hospital offers VIA/VILI in the Family Planning Clinic.

Despite this service being offered, not all clients take up cervical cancer screening. A study by Were *et al*., 2011 indicated that limitations to its findings were referable to women who accepted to undergo screening using visual inspection. Hence there is a likelihood that the women that did not accept screening were significantly different. This study addressed these aspects and others as discussed below. The discussion focuses on the three specific objectives of the study.

5.1 Cervical Cancer Screening Uptake

The low uptake of screening test in this study has also been reported in other studies with 4.1% in low income countries (Akinyemiju, 2012), 0.6% in South-east Nigeria (Eze *et al*., 2012), 22.6% in Moshi Rural District Tanzania (Lyimo *et al*., 2012) and 12.3% in Eldoret Kenya (Were *et al*., 2011). Findings of this study show a lower cervical cancer screening uptake compared to other parts of the country such as a study done in Embu County which had an uptake of 25% (Nthiga, 2014) while another in Kisumu had 17.5% (Everlyne et al., 2014). However, this study showed that in those who had been screened, the percentage uptake was higher in the recent years. This was a contrast to an Eldoret study (Were et al., 2011) where participants reported they had not been screened before. This could be due to increased dissemination of cervical cancer information. Despite data showing that screening has been there for at least five years, screening uptake is still low. In high income countries, uptake is usually higher. This difference may be due to differences in

cervical cancer awareness between developed and developing countries. In 2009, a study in Italy found that 65% of women regularly undergo pap testing due to public health programmes used to promote cancer screening (Napoli *et al*., 2011). Despite a large number of participants in this study reporting that the hospital was the nearest facility, the target population of 75% to be screened has not been reached even with active promotion of cervical cancer screening through VIA/VILI (National cancer guidelines, 2012).

5.2 Test Results among Those Screened

Of those who were screened during the study period, 44.4% had positive VIA/VILI results. This was higher than in other studies. A cross sectional survey in Eldoret found the test positivity rate was 13.9% (VIA) and 16.9% (VILI) (Were *et al*., 2010). Another study done in HIV care and treatment clinics in Kenya found that among the women offered screening, 15% of them had a positive or unsatisfactory VIA result (Huchko *et al*., 2011). In the Claeys *et al*., (2003) Kenyan study, 4.5% of Pap smears were abnormal. This was comparable to 4.3% in the Gatune *et al*., (2005) Limuru study. One possible reason for the high positive results in this study could be as a result that participants may only be screened at the advice of a health worker. Some other reasons could be found in the FGD where some participants indicated that they waited for medical problems related to the female genital tract before seeking screening. From the key informant interview, some of those interviewed reported that screening is done mainly on those using IUD or mothers with problems. This may be in consideration of the high number of clients and inadequate screening rooms resulting in the selective screening.

5.3 Factors Affecting Cervical Cancer Screening Uptake

A woman's ability to make an informed decision and act on it is influenced by existing social networks and institution or community in addition to her own beliefs and behavioural patterns (ACCP 2004). This was reflected in this study as participants gave various reasons for lack of screening despite the fact that it was offered in a facility they were visiting. While in this study 6.4% wished to be

screened at a later date, this contrasted with 65% in the Eldoret study (Were *et al*., 2011). This lower percentage could be due to lack of familiarity with the concept of preventive health care. Some participants in this study did not know that there is screening for cervical cancer. They also had no information on cervical cancer or did not know where cervical cancer screening was done. Similar findings were found in a survey in FPAK clinics where lack of awareness and knowledge were considered the main barriers to cervical cancer screening (Claeys *et al*., 2003). Other studies showed similar findings (ACCP, 2004). In this study fear was reported in both the cross sectional study and the FGD. They feared to be screened because they were afraid of being told they had cervical cancer. This may be due to perception that cancer is untreatable and eventually leads to death (NCCPPSP, 2012; WHO, 2006). During the interviews, screening for cervical cancer was often compared with screening for HIV. This can be seen where 30.2% study participants reported that screening tells a woman she has a fatal condition with no cure. Others feared the screening process. The FGD participants reported that they feared feeling pain especially when they saw the instruments to be used. The KII also reported that some women perceived the process as painful. In the FGD, the reason for fear may be because some clients do not know what is involved in the screening process. Participants wanted to know what is expected of them and what to do if the results were positive. Similar findings were also found in ACCP (2004) and Were *et al*., (2011) study where fear of pain during the screening or abnormal results were common barriers. In the cross sectional study, some participants reported that they were not screened because they were not sick. Similar views were seen in the FGD where some participants reported that they waited to get sick before they sought medical attention. In the KII, this was also a problem because clients reported late for screening when they were already in the cancer stage. Similar findings were documented by Wong *et al.,* (2013) where screening was viewed as an unnecessary procedure by Malaysian women who perceived themselves as healthy. This could be one of the reasons for low cervical cancer screening uptake. The perception that they were healthy could be the reason why participants had no reason to be screened, were undecided, or did not want to be screened. Some participants reported that they had not been asked to be screened by a healthcare worker. This could be related to the

fact that 39.3% of the participants mentioned that screening should only be at the advice of a healthcare worker. Thus screening could be directly linked to health practitioners. With 55.5% of the participants working, the long queues mentioned in this study could result in participants with busy schedules finding it inconvenient to be screened. Similar findings were reported in Agurto *et al*., (2004) study. Other barriers were identified as accessibility and availability of quality services (Agurto *et al*., 2004). The long waiting period could be due to the large number of clients. Naivasha County Referral Hospital is a Level 4 hospital and is the first level of referral from lower levels of health care. Therefore referral cases contribute to the large number of clients as mentioned in the KII. As a result healthcare workers are rushed with little time allocated for each client. This could be solved by training more healthcare workers on cervical cancer screening, having specific rooms for VIA/VILI testing where clients feel their privacy is protected and adequate reagents and instruments for screening. Lack of finances was a common barrier in Agurto *et al*., (2004) and Were *et al*., (2011) study. However, in this study though all the FGD participants were not aware how much VIA/VILI costs they were ready to pay as long as the costs catered for all including those in the low-income group. This view was supported by some KII participants. Some KII participants also mentioned that the screening uptake was very high when it was given for free. Similar to the Napoli *et al*., (2011) study, a significant association was found between having a source of income and lack of cervical cancer screening. Screening involves payment and those in the low income level may not be able to spare any money.

An ethnographic study done among rural women in Limuru, Kenya found that about 40% knew of cervical cancer (Gatune *et al*., 2005) while Eze *et al*., (2012) found it to be 37.5%. In this study having heard of cervical cancer had a higher percentage and was significantly associated with screening uptake. Those who had heard of cervical cancer were more likely to be screened. However, of the 66.9% who had heard of cervical cancer, 56.8% thought it was preventable. The Eze *et al*., (2004) Nigerian study reported the preventable nature of cervical cancer at 31.9%. More participants in this study reported that cervical cancer is preventable than in other studies. This difference could be due to increased dissemination of cervical cancer information

over the years. In the Agurto *et al*., (2004) study, cervical cancer was not perceived as preventable. Most of the FGD participants in this study did not know how to prevent cervical cancer. The few who mentioned that it can be prevented gave diet and cleanliness as the ways they thought could help in prevention. In this study 51.6% did not know what caused cervical cancer compared to 25% in the Gatune study (Gatune *et al*., 2005). Common causes mentioned in this study included family planning methods, sexual activity, multiple partners, lack of awareness on screening and type of food eaten. These were similar to the Gatune *et al*., (2005) study, though that study had a higher percentage for family planning methods and uncleanliness. The differences could be due to inadequate cervical cancer knowledge. There is also the perception that cancers in general have similar causative factors such as diet. This showed that participants who knew about HPV and how it is spread were few. A cross sectional household survey conducted Petaling Jaya city in 2007, showed similar results where 14% of the respondents had ever heard of HPV (Wong *et al*., 2013). The need not to associate cervical cancer with STIs due to promiscuity while giving information to clients so that they can make choices about their sexual behaviours is a challenge (Lee *et al*., 2007; Waller J *et al*., 2004).

Those who perceived they were at high risk of getting cancer in this study were 18.8%. Similar results were found in the Were *et al*., (2011) Eldoret study. In this study, FGD participants gave varied views on who was at risk. The common response was any woman who has children. This perception of being at low risk could be because 97.7% had never been told they had cancer. With high risk HPV common in women under 25 years; and considering the developmental period of about 10 years, the best age to screen if screened only once is 35-45 years (WHO, 2006). In this study 49.2% of those screened were 25-34 age-group showing younger women are more likely to be screened. While one of the barriers to cervical cancer screening was lack of support from families and communities (ACCP, 2004), 41.7% of participants in this study reported that their husbands had knowledge of cervical cancer. In the FGD they did not expect their husbands to know if they themselves did not know. A key informant reported that husbands who knew about cervical cancer encouraged their women be screened. Shyness and embarrassment were barriers to

cervical cancer screening uptake according to ACCP, 2004. This can lead to fear of talking about medical issues related to the genital tract. In both the KII and FGD, participants mentioned fear of talking about cervical cancer especially among younger women. Participants in this study reported that they found it difficult to discuss with a woman they knew closely. This contrasted with 97.4% participants in the cross sectional study who reported that they would advise women they know closely to be screened. One possible explanation for this is that the FGD offered more freedom for participants to express their views on the discomfort of talking about health problems related to the genital tract. There was an effect of culture with about a third of the participants finding it difficult in discussing symptoms related to the female genital tract with someone they could not identify with. Participants were more comfortable in discussing symptoms with female healthcare providers. In both the KII and FGD, there was a preference of older more experienced female healthcare practitioners. In addition, the age was important with older participants preferring people closer to their age. This shows the sensitivity with which matters dealing with the female genital tract are held hence the need to understand the culture and attitudes within an area. Privacy and unavailability of female providers were some similar main barriers identified in Agurto *et al*., (2004) study. In this study, 70.1% had heard of cervical cancer screening yet screening uptake was 15.4%. This indicates inadequate knowledge of the importance of cervical cancer screening. Though almost all the participants reported that a woman can be screened even if she was healthy, inadequate knowledge included perceptions such as a positive VIA/VILI test meant a woman had cancer. The number of times to be screened was also not known with some participants reporting that screening could be done whenever a woman wanted. This was in contrast to the recommended screening cycle in Kenya which is every five years except for HIV positive women (NCCPPSP 2012). According to ACCP (2004), the place where Kenyan women first heard the screening message had some effect on the likelihood that they would go for screening. Women who heard about cervical cancer screening at a health centre were most likely to be screened. There were similar findings in this study with a preference for hospital talks as the source of information on cervical cancer. It was also noted that women satisfied with the services they received were more likely to

describe their experience to family members and friends (ACCP 2004). Knowing someone who had been screened was significantly associated with screening uptake. However, few participants in this study knew someone who had been screened. This could be one of the reasons for low screening uptake. Claeys *et al*., (2003) in Kenya found a positive view on screening by patients and staff. Similar views were found in this study. However, inadequate knowledge of cervical cancer and low screening uptake present in this study will make it difficult to implement three of the four components of cervical cancer control. The three components include: behaviour change; early detection through increased awareness and screening in asymptomatic populations at risk; and early diagnosis of cancer in symptomatic populations (NCCS, 2011; WHO, 2006).

Health education, primary prevention and counselling are three strategies necessary in health promotion. They include messages of creating awareness on behaviour change. In Kenya, family planning clinics are evolving from previously being distributers of family planning methods to providing a wide range of services including cervical cancer awareness and screening (Claeys *et al*., 2003). In the KII, effective strategies on how women were informed on cervical cancer and screening women included outreaches, health education talks at the hospital in the mornings and one-on-one talks in the FP clinic. Gatune *et al*., (2005) study showed that about 70% preferred education on cervical cancer and its prevention to be in places frequented by women. Similar findings were present in the FGD in this study with churches being commonly mentioned. An ethnographic study done among rural women in Limuru, Kenya found that the most common source of information was friends (73.4%) (Gatune et al., 2005). This contrasted with this study with friends at 11.3%. Yet the importance of relationships was clear when those who had been screened were 9.97 times more likely to have known someone who had been screened than those who had not been screened. This could have been due to the need for trust and sensitivity of discussing medical issues related to the genital area. According to Gatune *et al*., (2005) study, radio (21.9%), books and magazines (20.3%), TV (7.8%) were media channels mentioned. In this study, radio (51.2%) and TV (25%) were more common with magazines at 1.2% as sources from which

participants had heard about cervical cancer. Most of the participants in the FGD did not prefer radio or TV as the source of information on cervical cancer since information could be aired when they were not tuned in. Others did not have radios or TVs or could not read. In the KII, visual aids were mentioned as having an impact as they help clients picture the disease thus increasing uptake.

Sources of information were looked at in three aspects in this study. These were: where the participant had heard of cervical cancer, the preferred source of information and source of information for those who had been screened. The most common mentioned source of information in all three aspects was information from healthcare workers. Educational talks at the hospital was at 18.8% (Gatune *et al*., 2005) and contrasted with that of 74.2% as the preferred source of information in this study. The Nthiga (2014) study had similar findings where most participants reported having got information on cervical cancer screening from healthcare providers. This could be as a result of the trust clients have with the healthcare providers. However, the issue of whether a client would be present during the days when cervical cancer talks were given was reported. This can be addressed by informing clients on when talks on this topic will be held. Another reason for preference of hospital talks was reported in the KII where clients interact with the healthcare workers and can ask questions. For those who had been screened, 67.9% had got their information from healthcare workers. The fact that media was not mentioned by those who had been screened supports this.

A U.S. study by Hewitt *et al*., (2004) found lower rates of Pap test were associated with lacking a usual source of care. However, in this study the hospital as a usual treatment centre was significantly associated with screening. Participants for who the hospital was the usual treatment centre were less likely to be screened. This may be because these participants may be aware of the long waiting period in the busy hospital and keep waiting for an opportune time. Akinyemiju (2012) study reported health care access to be a significant determinant to cancer screening. In this study, the nearness to the hospital facility was not associated with cervical cancer screening uptake.

High risk participants have been found to be more likely to accept screening. The definition of high risk were those participants who indicated they were exposed to co-factors. In this study, cervical cancer risk was significantly associated with screening uptake with screening uptake higher in participants at a higher risk of getting cervical cancer. Similar results were reported in other studies in Kenya (McKenzie *et al*., 2007; Huchko *et al*., 2011).

Though a study in Tanzania by Lyimo *et al*., (2012) reported that women's level of education, women's knowledge of cervical cancer and its prevention, difficulty in discussing medical issues related to the female genital tract and distance to cervical cancer screening services were significant in relation to uptake of cervical cancer screening service, these were not significant in this study.

5.4 Study Limitation

A key limitation of this study was that the study participants were those accessing family planning services. However, using clinical study participants gives an understanding of what happens when women finally access the healthcare system.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusions

1. Cervical cancer screening uptake was 15.4% showing that availability of screening services in clinics that clients normally attend and that gynaecological examination is expected to be easily accepted did not translate into high proportions in cervical cancer screening uptake.

2. The VIA/VILI positive results were 44.4%. Thus when screening was targeted on specific cases presenting with medical problems related to the female genital tract or those considered at a higher risk of getting cervical cancer, the result was more VIA/VILI positive cases being reported than in those studies where screening was not based on these factors.

3. Various factors were identified in relation to cervical cancer screening uptake.

(a) Though there was a positive attitude towards cervical cancer screening by both clients and healthcare providers in Naivasha County Referral Hospital, various barriers like inadequate knowledge of cervical cancer, specific times and places for screening resulted in low screening uptake. Awareness of the role of HPV in cervical cancer was very low among the study participants. Clients not knowing the cause and associated risk factors may have been hindered from taking adequate measures to protect themselves. They were also more likely to wait for medical problems related to the female genital tract to occur before seeking treatment and by this time the cancer may have advanced. This is worrying considering studies conducted over five years before the current one had reported similar findings.

(b) In general, clients were not aware of the different methods of screening and the number of times it was recommended they be screened for cervical cancer.

(c) Clients' preferred to be given information on cervical cancer in hospital during health talks or in places where women met such as religious meetings. They also wanted to be able to ask questions on things they did not understand regarding cervical cancer.

(d) Knowing someone who had been screened was associated to cervical cancer screening uptake. Therefore, Naivasha being a cosmopolitan area may result in far reaching effects to other parts of the country.

6.2 Recommendations

i. Healthcare providers should generate a systematic sensitization program on what is involved in the screening process and the number of times to be screened so as to address some fears by clients who find the whole process a mystery. This may increase screening uptake especially with the preference for hospital healthcare talks.

ii. More needs to be done by county health management teams and healthcare providers to reach those accessing the family planning clinics. This may include: inclusion in the budget of things specifically related to cervical cancer screening such as reagents and equipment; training more healthcare workers on screening; creation of specific rooms and specific schedules for cervical cancer screening and education. Then ensure clients are informed of these screening places and times.

iii. Reproductive health programs should inform clients of HPV, but with sensitivity so that they do not associate it with promiscuity or create stigmatization. It will also help to involve husbands/partners in this process. There is also need to inform clients on how to take care of themselves in relation to HPV and other co-factors such as tobacco smoking and HIV. Knowing the risk factors may help in behaviour change.

iv. It may be advisable for reproductive health programs to also adequately inform clients who are screened about cervical cancer. This will have a ripple effect on other women they associate with who they may influence to be screened for cervical cancer.

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APPENDICES

Appendix 1: Map of Nakuru County Showing Location of Naivasha

Source: Kenya; County fact sheets

CRA, 2012

Appendix 2: Record of Participants Approached for Survey

1. Date (dd/mm/yyyy):_ _ /_ _ / _ _ _ _
2. Study Participants Number _____
3. Interview result: _
   Completed = 1, Requires emergency care = 2, Declined to give consent = 3,
   Partly completed = 4
4. Interviewer's number: _____

Appendix 3(a): Consent Form; Cross-sectional Study - English

Title: Cervical cancer screening uptake among women attending Naivasha County Referral Hospital

Introduction

Hallo. My name is Serah Mbatia. I am a student from JKUAT. I am inviting you to participate in this research study titled "Cervical cancer screening uptake among women attending Naivasha County Referral Hospital". We hope that from this study we will get information necessary to provide guidance to key stakeholders on improving access to cervical cancer screening services.

The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read this form carefully or listen as it is read to you and ask any questions you may have before agreeing to be in the study.

Study objective

The aim of this study to determine the factors that influence uptake of cervical cancer screening among women attending the family planning clinic at Naivasha County Referral Hospital. You are one of the 384 participants chosen to be involved in this study. You can take part in this study if you are between 18 and 49 years of age and have just been attended to in the family planning clinic.

Participation in the study

We are asking for your participation in this study so that we are able to address the objectives. You are free to refuse to participate and to withdraw from the study at any time without penalty or loss of benefits to which you are otherwise entitled.

Voluntarism

Participation in this study is voluntary. You do not have to talk about anything you do not want to and can end the interview at any time.

Procedures

This is what will happen if you decide to participate in this study. You will be asked several questions whose answers will be noted down on the questionnaire paper. The expected time taken for the questionnaire will be around 20 minutes. During the

study some women will be requested to join in discussion groups to be held as part of this study. Joining these discussions will be voluntary. If you are among those invited for the discussions more will be explained about them so that you can give informed consent before joining in them.

Risk and benefits in participation

You may become embarrassed, worried or anxious because of some of the questions asked. Participation in the study will require you commit your time; however you will be served as quickly as possible. This study will be of benefit by identifying challenges faced by women in accessing cervical cancer screening services so that they can be addressed to improve health care.

Confidentiality

Your identity as a subject will be kept confidential. Only the investigator, KEMRI ethical review committee and other regulators like the national bioethics committee of NACOSTI can access information about you. The information about you will be identified only by the study number and will not be linked to your name in any records. Data collected will be kept under lock.

Costs and reimbursement

You will not be charged to be involved in this study. You will also not receive any money for participating in this study

Contacts

You can ask any questions you have about the study. The researcher conducting this study is Serah Mbatia a master's student from JKUAT. If you have any questions regarding the study you can contact the following:

The director, Institute of Tropical Medicine and Infectious diseases ITROMID-KEMRI office

P.O. Box 54840-00200 Nairobi

Tel: 254-020-2722541

Email: itromid@kemri.org

Contact for KEMRI ERC

In case you need to get more information about your rights to participation in this study, contact the secretary, KEMRI- Ethical Review Committee

P. O. Box 54840 – 00200 Nairobi

Tel: 020- 2722541, 2713349

Study participant's statement

This study has been explained to me and I have had a chance to ask questions. I consent to take part in this research.

Participants name: _____

Signature or

Left thumb print: _____

Date of interview: _____

Appendix 3(b): Consent Form; Cross-sectional Study - Kiswahili

FOMU YA KUKUBALI KUSHIRIKI KATIKA UTAFITI (KISWAHILI)

Matumizi ya uchunguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake wanaohudumiwa katika hospitali ya Naivasha.

Utangulizi

Habari yako. Jina langu ni Serah Mbatia. Mimi ni mwanafunzi kutoka chuo kikuu cha JKUAT. Nakukaribisha kushiriki katika utafiti huu uitwayo "Matumizi ya uchunguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake wanaohudumiwa katika hospitali ya Naivasha". Tunatarajia kuwa utafiti huu utatoa habari zinazohitajika kutoa mwelekeo utakao saidia washikadau kuimarisha uchunguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake. Lengo la fomu hii nikukupa habari itakayokusaidia kuamua ikiwa utashiriki katika utafititi huu. Tafathali soma au sikiza kwa makini unaposomewa fomu hii. Unaweza kuuliza maswali kabla ya kukubali kujiunga na utafiti huu.

Lengo la utafiti

Lengo la utafiti huu nikujua hali ya matumizi ya uchunguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake wanaohudumiwa katika hospitali ya Naivasha. Wewe ni mshiriki mmoja kati ya 384. Washiriki ni wanawake wa kati ya miaka 18 na 49 ambao wamehudumiwa katika kliniki ya kupanga uzazi.

Kushiriki katika utafiti

Tunaomba kushiriki kwako katika utafiti huu ili tuweze kufanikisha lengo hili. Unauhuru wa kukataa kushiriki na kujiondoa kutoka utafiti huu wakati wowote bila kupoteza faida.

Kujitolea

Kushiriki katika utafiti huu ni wa kujitolea. Sio lazima ujadili jambo lolote ambalo hautaki na pia unaweza kusitisha mahojiano wakati wowote.

Utaratibu

Utafanyiwa ifwatavyo: Baada ya kukubali kujiandikisha katika utafiti huu, utaulizwa maswali kadhaa na majibu kuandikwa. Muda wa maswali ni kama dakika 20. Katika utafiti huu, wanawake wataulizwa kujiunga na vikundi vya mazungumzo. Ni hiari

yako kujiunga na vikundi hivi. Ukialikwa kwa vikundi hivi, utaelezwa mengi kuyahusu ili upeane idhini kabla yakujiunga.

Adhari na manufaa ya kushiriki kwa utafiti huu

Unaweza kupata aibu, wasiwasi au kubabaika kutokana na maswali utakayoulizwa. Kushiriki katika utafiti huu kutahitaji utoe wakati wako: lakini utahudumiwa haraka iwezekanavyo. Utafiti huu utanufaisha kwa kuonyesha changamoto ambazo wanawake wanapata wakati wanatafuta huduma za uchunguzi wa saratani ya shingo la mfuko wa uzazi na jinsi hizi huduma zinazoweza kunufaishwa.

Usiri

Habari zako zitawekwa kwa usiri kama anayetafitiwa. Mtafiti, watafiti wa kamati ya utafiti na maadili ya KEMRI na kamati ya NACOSTI wanaweza kupata habari kukuhusu. Habari kukuhusu itatambulika na nambari ya utafiti utakayo pewa na kwa hivyo haitalinganishwa na habari zingine zozote. Habari zitakazo chukuliwa zitafungiwa ili kuimarisha usiri.

Gharama kwako

Hakuna gharama ya kushiriki katika utafiti huu. Pia hautapokea pesa zozote kwa kushiriki katika utafiti huu.

Mawasiliano

Unaweza kuuliza maswali kuhusu utafiti huu. Mtafiti wa utafiti huu ni Serah Mbatia mwanafunzi wa JKUAT. Ikiwa una maswali yeyote kuhusu utafiti huu, unaweza kuwasiliana na Mkurugenzi,

ITROMID-KEMRI

S.L.P 54840-00200 Nairobi

Simu: 254-020-2722541

Barua pepe: itromid@kemri.org

Mawasiliano KEMRI ERC

Ikiwa ungehitaji kujua mengi kuhusu haki yako ya kushiriki katika utafiti huu, wasiliana na karani, KEMRI- kamati ya maadili na utafiti

S.L.P. 54840-00200

Simu: 020-2722541, 2713349

Taarifa ya mshiriki

Nimeelezwa kuhusu utafiti huu. Nimekua na nafasi ya kuuliza maswali. Najitolea kushiriki katika utafiti huu.

Jina la anayetafitiwa: _____

Sahihi ya anayetafitiwa au

Kidole cha Gumba cha mkono wa kushoto _____

Tarehe ya mahojiano: _____

Appendix 4(a): Cross-sectional Questionnaire - English

Title: Cervical cancer screening uptake among women attending Naivasha County Referral Hospital

Participant Number: _____

Interviewer Number: _____

Date of Interview: _ _ /_ _ / _ _ _ _ (dd/mm/yyyy)

Thank you for agreeing to participate. I will begin by asking a few questions about yourself. Check (X) the appropriate response.

1.What is your date of birth? __ __ /__ __ / __ __ __ __(dd/ mm/ yyyy) Do not know/recall ☐

2.Place of residence (Location): _____

3.What is the highest level of formal education you have attained?

(1) None ☐
(2) Primary ☐
(3) Secondary ☐
(4) College(post-secondary) ☐

4. What is your current marital status?

(1) Single, ☐
(2) Married (monogamous) ☐
(3) Married (polygamous) ☐
(4) Divorced/separated ☐
(5) Widowed ☐

5. What is your main source of income? _____

6. Type of house lived in:

a) (1) Rented house ☐
(2) Owner of house ☐

b)Type of wall of house lived in:

(1) Mud wall ☐
(2) Wooden/ Iron sheet wall ☐
(3) Stone house wall ☐
(4) Other (specify) ☐ _____

c) Roofing on house

(1) Natural roofing (thatch, makuti) ☐
(2) Iron sheets ☐
(3) Tiles ☐
(4) Other (specify) ☐ _____

d) Main material on floor

(1) Natural (earth, dung) ☐
(2) Wooden planks/ Bamboo ☐
(3) Finished floor (tiles, polished wood) ☐
(4) Other (specify) ☐ _____

7. What type of fuel does your household mainly use for cooking?

(1) Electricity ☐
(2) LPG/ Natural gas ☐
(3) Biogas ☐
(4) Charcoal ☐
(5) Firewood ☐
(6) Others (specify) ☐ _____

8. Religion:

(1) Christian ☐
(2) Muslim, ☐
(3) Other(State) ☐ _____

Questions about health care

9. a) Is this the nearest facility to your home?

(1) Yes ☐ (2) No ☐

b) Do you usually come here for medical care when you are sick?

(1) Yes ☐ (2) No ☐

c) How long did it take you to reach here from home?

Hours__ __ Minutes __ __

d) What mode of transport did you use? _____

Questions on exposure to cofactors

10. I will ask you questions about the pregnancies you have had:

a) How many times have you been pregnant? _____

b) Have you lost any pregnancies? (If No go to 10 (d))

(1) Yes ☐ (2) No ☐

c) How was the pregnancy lost? (e. g. miscarriages/still births/abortions)

_____

d) How many children have you given birth to? _____

11. What is the age of the first child? _____ (years)

12.a)Do you use any method to delay or avoid getting pregnant? (If No go to question 13)

(1) Yes ☐ (2) No ☐

b) Which method of family planning do you use?

(1) Pill, ☐
(2) IUD, ☐
(3) Injections, ☐
(4) Implant, ☐
(5) Male/Female condom ☐
(6) Other ☐ (Specify) _____

c) How long have you been using this method (months/ years)? _____

13. Do you smoke tobacco?

(1) Never ☐
(2) Current ☐
(3) Past ☐

14.a) Have you ever had a HIV test?

(1) Yes ☐ (2) No ☐

b) If yes, are you willing to tell me your HIV test result (If no go to question 15)?

(1) Yes ☐ (2) No ☐

c) If Yes, what was the HIV result?

(1) Positive result ☐ (2) Negative result ☐ (3) Don't know ☐

Questions on cervical cancer

15. a) Have you heard about **cervical cancer**? (If 'No' proceed to question 16)

(1) Yes ☐ (2) No ☐

b) If yes, from which of the following did you get that information from: (Check appropriate boxes)

(1) Health workers(specify type e.g. doctor, nurse etc.) ☐ _____
(2) Friends, ☐
(3) Family, ☐
(4) Women group meetings ☐
(5) Religious groups ☐
(6) Media(specify-radio,TV,Newspapers,Posters) ☐ _____
(7) Others (specify) ☐

_____

c) Do you think cervical cancer is preventable?

(1) Yes ☐ (2) No ☐

16. How would you like to get information about cervical cancer?

(1) Educational talks at the hospital, ☐
(2) Friends ☐
(3) Family ☐
(4) Women group meetings ☐
(5) Religious groups ☐
(6) Media (specify e.g. radio,TV,Newspapers,Posters) ☐ _____
(7) Seminars/Conferences ☐
(8) Others (Specify) ☐ _____

17. What do you think are the things that causes a woman to develop cervical cancer or increase her chances of developing it (Record all answers given)

_____

Questions on cervical cancer screening

18. Are you aware of cervical cancer screening?

(1) Yes ☐ (2) No ☐

19. a) Have you been screened for cervical cancer before? (If 'No' go to question 20)

(1) Yes ☐ (2) No ☐

b) If yes when:

Year (yyyy): __ __ __ __ Do not recall ☐

c) If yes, where have you heard about **cervical cancer screening** from?

(1) Health workers (specify e.g. CHW, nurse, doctor), ☐ _____
(2) Friends ☐
(3) Family, ☐
(4) Women group meetings, ☐
(5) Religious groups, ☐
(6) Media (specify radio,TV,Newspapers, Posters, Internet etc.), ☐ _____
(7) Barazas, ☐
(8) Others ☐ _____

20) Do you know of someone who has had cervical cancer screening?

(1) Yes ☐ (2) No ☐

21) a)Were you screened for cervical cancer today? (If 'No' go to question 22)

(1) Yes ☐ (2) No ☐

- Confirmed from clients file by interviewer.

(1) Yes ☐ (2) No ☐

b) What were the results of the screening test?

(1) Positive screen test ☐ (2) Negative screen test ☐

- Interviewer to record results from the patient file _____

c) Before being offered screening, was the procedure explained to you?

(1)Yes ☐ (2)No ☐ (3)Not sure ☐

d) Would you tell your relatives or friends about cervical cancer screening? (Go to 23 after the answer is given).

(1) Yes ☐ (2) No ☐

22. If not screened, what prevents you from being screened (Record all answers given)

_____

23. What do you think of the following about cervical cancer screening (Indicate True or False)?

(1) It is like a vaccine, once a woman gets it she will not get cervical cancer ___
(2) It is painful ___
(3) A woman can ask to be screened even if she feels healthy ___
(4) It tells a woman she has a fatal condition that there is no cure ___
(5) A positive test means a woman has cancer ___
(6) A woman should be screened only once in her life ___
(7) A woman should be screened whenever she wants ___
(8) Cervical cancer screening should be routine ___
(9) A woman should be screened when advised by a health worker ___
(10) It helps a woman know if she has a problem with her cervix ___

24. a) Have you ever heard of HPV (Human papillomavirus)? (If 'No' go to question 25).

(1) Yes ☐ (2) No ☐

b) If yes, in which ways is it transmitted (Record answers):

_____

25. Would you advice women in your family and friends to be screened?

(1) Yes ☐ (2) No ☐

26. Have you ever been told by a doctor that you had cancer?

(1) Yes ☐ (2) No ☐

27. Would you say your risk of getting cancer in the future is?

(1) Low ☐ (2) Medium ☐ (3) High ☐

28.Does your partner/ husband know about cervical cancer?

(1) Yes ☐ (2) No ☐

29. Do you find it hard to discuss symptoms related to the female genital tract?

(1) Yes ☐ (2) No ☐

30. Do you find it hard to discuss symptoms related to the female genital tract with?

(1) A male health provider ☐
(2) A person from a different tribe/culture ☐
(3) Another woman you are friends/ related to ☐
(4) A female health provider ☐

Appendix 4(b): Cross-sectional Questionnaire - Kiswahili

Ukaguzi wa Matumizi na Manufaa ya Uchunguzi wa Saratani ya Shingo la Mfuko wa Uzazi

Participant Number: _____

Interviewer Number: _____

Date of Interview: _ _ /_ _ / _ _ _ _ (dd/mm/yyyy)

Habari za asubuhi/mchana/jioni? Asante kwa kukubali kushiriki. Nitaanza na kukuuliza maswali kukuhusu.

1. Je ulizaliwa lini? __ __ /__ __ / __ __ __ __(dd/ mm/ yyyy)
Sijui/sikumbuki ☐

2. Je unaishi wapi? (Location): _____

3. Je, ulisoma hadi kiwango gani?
   (1) Sijasoma ☐
   (2) Shule ya msingi ☐
   (3) Sekondari ☐
   (4) Chuo (baada ya sekondari) ☐
4. Je, umeolewa?
   (1)Pekee
   (2)Ameolewa (mke na mume mmoja) ☐
   (3)Ameolewa (wake wengi mume mmoja) ☐
   (4)Kukosana/kuwachana ☐
   (5)Mke aliyefiwa na mume ☐
5. Je, unajimudu kivipi maishani?

_____

6. Unaishi kwa nyumba ya:

a) (1) Kukodisha ☐
   (2) Nyumba yako binafsi ☐
b) Aina ya ukuta ya nyumba unayoishi:
   (1)Ukuta wa matope ☐
   (2)Ukuta wa mbao/mabati ☐
   (3)Ukuta wa mawe ☐
   (4)Zingine (Bainisha) ☐ _____
c) Aina ya paa la nyumba
   (1)Paa ya kiasili (maezeko, makuti) ☐
   (2)Mabati ☐
   (3)Vigae (Matofali) ☐
   (4)Zingine (Bainisha) ☐ _____

d) Aina ya sakafu

(1)Asili (arthi, kinyesi cha ng'ombe) ☐
(2)Mbao/ mwanzi ☐
(3)Sakafu ya kisasa (vigae, mbao) ☐
(4)Zingine (Bainisha) ☐ _____

7. Je, mara nyingi unatumia aina gani ya moto kupika nyumbani?

(1) Stima ☐
(2) Gesi ya kiasili (LPG) ☐
(3) Biogesi ☐
(4) Makaa ☐
(5) Kuni ☐
(6) Zingine (Bainisha) ☐ _____

8. Dini:

(1)Mkristo ☐
(2)Muislamu, ☐
(3)Zingine (Bainisha) ☐ _____

Maswali kuhusu huduma za matibabu

9. a) Je, hii ndio hospitali iliyo karibu zaidi na nyumbani?

(1) Ndio ☐ (2) La ☐

b) Hapa ndipo mahali unapokuja wakati mwingi kupata matibabu wakati uko mgonjwa?

(1) Ndio ☐ (2) La ☐

c) Unachukua muda mgani kufika hapa kutoka nyumbani?

Masaa__ __ Dakika __ __

d) Unatumia njia ngani ya kusafiri kuja hapa? _____

Maswali kuhusu mfiduo kwa mambo husika

10. Nitakuuliza maswali huhusu mimba ambayo umejaliwa kupata:

a) Umekuwa mja mzito mara ngapi? _____

b) Umepoteza mimba yoyote? (Ikiwa jawabu ni **La** endelea na nambaria 10 (d))

(1) Ndio ☐ (2) La ☐

c) Ulipoteza mimba kivipi? (mfano: mimba kuharibika/mtoto kuzaliwa kama amefariki/kutoa mimba) _____

d) Umejifungua watoto wangapi? _____

11. Mtoto wako wa kwanza ana umri gani? _____ (miaka)

12.a)Unatumia njia yoyote ya kuzuia mimba? (Ikiwa jawabu ni **La** endelea na nambari 13)

(1) Ndio ☐ (2) La ☐

b) Umewahi tumia njia zipi za kupanga uzazi?

(1)Tembe, ☐
(2)IUD, ☐
(3)Sindano, ☐
(4)Implant, ☐
(5)Mpira wa kiume au kike, ☐
(6)Zingine (Bainisha) ☐ _____

c) Umetumia njia hii kwa muda mgani (miezi/ miaka)? _____

13. Unavuta ugoro?

(1)Sijawahi ☐
(2)Hivi sasa ☐
(3)Zamani ☐

14.a) Umewahi kupimwa virusi vya HIV?

(1) Ndio ☐ (2) La ☐

b) Kama jawabu ni **Ndio**, unaweza kunieleza matokeo? (Ikiwa jawabu ni **La** endelea na nambari 15)?

(1) Ndio ☐ (2) La ☐

c) Ikiwa jawabu ni ndio, matokeo yalikuwa yapi?

(1) Nina virusi ☐ (2) Sina virusi ☐ (3) Sijui ☐

Maswali kuhusu saratani ya shingo la mfuko wa uzazi

15. a) Umewahi kusikia habari za saratani ya shingo la mfuko wa uzazi? (Ikiwa jawabu ni **La** endelea na nambari 16)

(1) Ndio ☐ (2) La ☐

b) Kama jawabu ni **Ndio**, ulipata habari kutoka nani:

(1)Muhuduma wa afya (Bainisha, mfano: daktari,muuguzi) ☐ _____
(2)Marafiki, ☐
(3)Familia, ☐
(4)Mikutano ya vikundi vya wanawake ☐
(5)Vikundi vya dini ☐
(6)Vyombo via habari(Bainisha-redio,TV,Gazeti,Matangazo) ☐ _____
(7)Zingine (Bainisha) ☐ _____

c) Je, unafikiri kuwa saratani ya shingo la mfuko wa uzazi inaweza kuepukwa?

(1) Ndio ☐ (2) La ☐

16. Ungependa kupata aje habari za saratani ya shingo la mfuko wa uzazi?

(1)Mazungumuzo ya kuelimisha juu ya afya hospitalini, ☐
(2)Marafiki, ☐
(3)Familia, ☐
(4)Mikutano ya vikundi vya wanawake ☐
(5)Vikundi vya dini ☐
(6)Vyombo vya habari(Bainisha-redio,TV,Gazeti,Matangazo) ☐
(7)Washa/Kungamano ☐
(8)Zingine (Bainisha) ☐ _____

17. Je, unafikiri ni nini ambachokinaweza kusababisha mwanamke kupata saratani ya shingo la mfuko wa uzazi ama kuongeza hatari za kuupata? (Andika majibu yote)

_____

Maswali kuhusu uchunguzi wa saratani ya shingo la mfuko wa uzazi

18. Je, unafahamu kuna uchunguzi wa saratani ya shingo la mfuko wa uzazi?

(1) Ndio ☐ (2) La ☐

19. a) Umeshawahi kufanywa uchunguzi wa saratani ya shingo la mfuko wa uzazi? (Ikiwa jawabu ni **La** endelea na nambari 20)

(1) Ndio ☐ (2) La ☐

b) Ikiwa jawabu ni Ndio, ilikuwa lini:

Mwaka (yyyy): __ __ __ __ Sikumbuki ☐

c) Kama jawabu ni Ndio, ulisikia habari za saratani ya shingo la mfuko wa uzazi kutoka wapi?

(1)Muhuduma wa afya (Bainisha, mfano: daktari,muuguzi,CHW) ☐ _____
(2) Marafiki, ☐
(3)Familia, ☐
(4)Mikutano ya vikundi vya wanawake ☐
(5)Vikundi vya dini ☐
(6)Vyombo vya habari(Bainisha-redio,TV,Gazeti,Matangazo,mtandao) ☐ _____
(7)Barazas, ☐
(8)Zingine (Bainisha) ☐ _____

20) Je, unamjua mtu yeyote ambaye amefanywa uchunguzi wa saratani ya shingo la mfuko wa uzazi?

(1) Ndio ☐ (2) La ☐

21) a) Je, umechunguzwa leo? (Ikiwa jawabu ni **La** endelea na nambari 22)

(1) Ndio ☐ (2) La ☐

- Anayehoji amehakikisha kutoka faili ya mgonjwa.

(2) Ndio ☐ (2) La ☐

b) Matokeo yauchunguzi ni yapi?

(1) Matokeo mabaya ☐ (2) Matokeo mazuri ☐

- Anayehoji kuandika jibu kulingana na yaliyoandikwa kwa faili ya mgonjwa

_____

c) Kabla ya kuulizwa kama ungependa uchunguzi, ulielezwa utaratibu utakaotumika?

(1) Ndio ☐ (2) La ☐ (3) Sina uhakika ☐

d) Je, unaweza zungumzia jamii yako kuhusu uchunguzi wa saratani ya shingo la mfuko wa uzazi? (Endelea na nambari 23 ukipatiwa jibu).

(1) Ndio ☐ (2) La ☐

22. Ikiwa haukuchunguzwa, ni nini kinachokuzuia kuchunguzwa (Andika majibu yote) _____

23. Je, unafikira gani kuhusu yafuatayo dhidi ya **uchunguzi** wa saratani ya shingo la mfuko wa uzazi (Jibu **Ukweli** au **La**)?

(1)Ni kama chanjo, mwanamke akifanyiwa uchunguzi hawezi kupata saratani ya shingo la mfuko wa uzazi ___
(2)Inasababisha uchungu ___
(3)Mwanamke anaweza kuuliza uchunguzi hata akihisi ana afya nzuri ___
(4)Uchunguzi unaonyesha mwanamke ana ugonjwa usio na kinga ___
(5)Matokeo mabaya yanaonesha mwanamke ana saratani ___
(6)Mwanamke anafaa kuchunguzwa mara moja maishani ___
(7)Mwanamke anafaa kuchunguzwa wakati wowote ___
(8)Uchunguzi unafaa kufanywa mara kwa mara ___
(9)Mwanamke anafaa kuchuguzwa akishauriwa achunguzwe na muhudumu wa afya ___
(10)Itasaidia mwanamke kujua kama ana shida ya shingo la mfuko wa uzazi ___

24. a) Umewahi kusikia habari kuhusu HPV (Human papillomavirus)? (Ikiwa jawabu ni **La** endelea na nambari 25).

(1) Ndio ☐ (2) La ☐

b) Ikiwa jawabu ni **Ndio**, inaenezwa kwa njia gani? (Andika majibu yote):

_____

25. Je, unaweza kushauri wanawake katika familia yako na marafiki kuchunguzwa?

(1) Ndio ☐ (2) La ☐

26. Je, umeshaambiwa na daktari ya kwamba una saratani?

(1) Ndio ☐ (2) La ☐

27. Je, unaweza kusema kuwa hatari ya wewe kupata saratani wakati ujao ni:

(1) Kidogo ☐ (2) Katikati ☐ (3) Juu ☐

28. Je, mpenzi/bwana wako anajua kuhusu saratani ya shingo la mfuko wa uzazi?

(1) Ndio ☐ (2) La ☐

29. Je, unaona ni vigumu kuzugumzia dalili zinazohusika na sehemu za siri za wanawake?

(1) Ndio ☐ (2) La ☐

30. Je, unaona ni vigumu kuzugumzia dalili zinazohusika na sehemu siri za wanawake na:

(1)Muhuduma wa afya wa kiume ☐
(2)Mtu wa kabila/utamaduni lingine ☐
(3)Mwanamke mwengine ambaye ni rafiki/jamaa yako ☐
(4)Muhuduma wa afya wa kike ☐

Appendix 5: Key Informant Interview Consent Form

Title: Cervical cancer screening uptake among women attending Naivasha County Referral Hospital

Introduction

Hallo. My name is Serah Mbatia. I am a student from JKUAT. I am inviting you to participate in this research study titled "Cervical cancer screening uptake among women attending Naivasha County Referral Hospital". We hope that from this study we will get information necessary to provide guidance to key stakeholders on improving access to cervical cancer screening services.

The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read this form carefully and ask any questions you may have before agreeing to be in the study.

Study objective

The aim of this study to determine the factors that influence uptake of cervical cancer screening among women attending the family planning clinic at Naivasha County Referral Hospital.

Participation in the study

We are asking for your participation in this study so that we are able to address the objectives. You are free to refuse to participate and to withdraw from the study at any time without penalty or loss of benefits to which you are otherwise entitled.

Voluntarism

Participation in this study is voluntary. You do not have to talk about anything you do not want to and can end the interview at any time.

Procedures

This is what will happen if you decide to participate in this study. You will be asked several questions. The interview will take about 20 minutes**.** It will be tape recorded and notes will be taken. This will be to ensure that everything said is remembered. You will not be required to identify yourself by name. There are no right or wrong answers.

Risk and benefits in participation

You may become embarrassed, worried or anxious because of some of the questions asked. Participation in the study will require you commit your time; however you will be served as quickly as possible. This study will be of benefit by identifying challenges faced by women in accessing cervical cancer screening services so that they can be addressed to improve health care.

Confidentiality

Your identity as a subject will be kept confidential. Only the investigator, KEMRI ethical review committee and other regulators like the national bioethics committee of NACOSTI can access information about you. The information about you will be identified only by the study number and will not be linked to your name in any records. The recordings and notes will be kept under lock and key. Your identity will be kept confidential. Thank you for agreeing to participate.

Costs and reimbursement

You will not be charged to be involved in this study. You will also not receive any money for participating in this study

Contacts

You can ask any questions you have about the study. The researcher conducting this study is Serah Mbatia a master's student from JKUAT. If you have any questions regarding the study you can contact the following:

The director, Institute of Tropical Medicine and Infectious diseases ITROMID-KEMRI office

P.O. Box 54840-00200 Nairobi

Tel: 254-020-2722541

Email: itromid@kemri.org

Contact for KEMRI ERC

In case you need to get more information about your rights to participation in this study, contact the secretary, KEMRI- Ethical Review Committee

P. O. Box 54840 – 00200 Nairobi

Tel: 020- 2722541, 2713349

Study participant's statement

This study has been explained to me and I have had a chance to ask questions. I consent to take part in this research.

Participants name: _____

Signature or
Left thumb print: _____

Date of interview: _____

Appendix 6: Key Informant Interview Guide

Title of study: Cervical cancer screening uptake among women attending Naivasha County Referral Hospital

Participant number: _____

Interviewer number: _____

Date of Interview: __ __ / __ __/ __ __ __ __

Part A: Background information

I will begin by asking a few questions about yourself.

1. Sex: Male ☐ Female ☐
2. What is your age? Years__ __
3. What is your current marital status?

Single ☐ Married (monogamous) ☐ Married (polygamous) ☐

Divorced/ separated ☐ Widowed ☐

4. In which profession are you involved in? _____

Part B: Guide

5. What are the common health problems affecting women in Naivasha?
6. I would like you to start with what you do that brings you in contact with cervical cancer screening issues in your community?
7. When did you first get involved with cervical cancer screening? How would you describe your involvement in cervical cancer screening?

Now I would like to ask a few questions on cervical cancer screening:

8. How can you describe cervical cancer screening uptake?
9. What strategies are used to inform women in this area of cervical cancer screening? What factors facilitate their participation?
10. What are the major barriers facing cervical cancer screening? How can they be overcome?
11. What are the major strengths to cervical cancer screening? How can they be built on?
12. Can you describe ways that you feel could be successful in reaching the community? Probe on key sources of information for cervical cancer screening by the community.
13. Are there any additional comments you would like to share on cervical cancer screening?

Appendix 7(a): Focus Group Discussion Consent Form - English

Title: Cervical cancer screening uptake among women attending Naivasha County Referral Hospital

Introduction

Hallo. My name is Serah Mbatia. I am a student from JKUAT. I am inviting you to participate in this research study titled "Cervical cancer screening uptake among women attending Naivasha County Referral Hospital". We hope that from this study we will get information necessary to provide guidance to key stakeholders on improving access to cervical cancer screening services.

The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read this form carefully or listen as it is read to you and ask any questions you may have before agreeing to be in the study.

Study objective

The aim of this study to determine the factors that influence uptake of cervical cancer screening among women attending the family planning clinic at Naivasha County Referral Hospital.

Participation in the study

We are asking for your participation in this study so that we are able to address the objectives. You are free to refuse to participate and to withdraw from the study at any time without penalty or loss of benefits to which you are otherwise entitled.

Voluntarism

Participation in this study is voluntary. You do not have to talk about anything you do not want to and can end the interview at any time.

Procedures

This is what will happen if you decide to participate in this study. You will be asked several questions. Every participants input is valuable. The discussion will take approximately one hour. It will be tape recorded and notes will be taken. This will be to ensure that everything said is remembered. You will not be required to identify yourself by name. There are no right or wrong answers.

Risk and benefits in participation

You may become embarrassed, worried or anxious because of some of the questions asked. Participation in the study will require you commit your time. This study will be of benefit by identifying challenges faced by women in accessing cervical cancer screening services so that they can be addressed to improve health care.

Confidentiality

Your identity as a subject will be kept confidential. Only the investigator, KEMRI ethical review committee and other regulators like the national bioethics committee of NACOSTI can access information about you. The information about you will be identified only by the study number and will not be linked to your name in any records. Some confidentiality may be lost if some of those participating do not keep confidentiality. Therefore participants are requested to keep the discussion of the focus group discussion confidential. The recordings and notes will be kept under lock and key. Your identity will be kept confidential. Thank you for agreeing to participate.

Costs and reimbursement

You will not be charged to be involved in this study.

Contacts

You can ask any questions you have about the study. The researcher conducting this study is Serah Mbatia a master's student from JKUAT. If you have any questions regarding the study you can contact the following:

The director, Institute of Tropical Medicine and Infectious diseases ITROMID-KEMRI office

P.O. Box 54840-00200 Nairobi

Tel: 254-020-2722541

Email: itromid@kemri.org

Contact for KEMRI ERC

In case you need to get more information about your rights to participation in this study, contact the secretary, KEMRI- Ethical Review Committee

P. O. Box 54840 – 00200 Nairobi

Tel: 020- 2722541, 2713349

Study participant's statement

This study has been explained to me and I have had a chance to ask questions. I consent to take part in this research.

Participants name: _____

Signature or
Left thumb print: _____

Date of interview: _____

Appendix 7(b): Consent Form for FGD - Kiswahili

FOMU YA KUKUBALI KUSHIRIKI KATIKA UTAFITI

Matumizi ya uchunguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake wanaohudumiwa katika hospitali ya Naivasha.

Utangulizi

Habari yako. Jina langu ni Serah Mbatia. Mimi ni mwanafunzi kutoka chuo kikuu cha JKUAT. Nakukaribisha kushiriki katika utafiti huu uitwayo "Matumizi ya uchunguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake wanaohudumiwa katika hospitali ya Naivasha". Tunatarajia kuwa utafiti huu utatoa habari zinazohitajika kutoa mwelekeo utakao saidia washikadau kuimarisha ukaguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake. Lengo la fomu hii nikukupa habari itakayokusaidia kuamua ikiwa utashiriki katika utafititi huu. Tafathali soma au sikiza kwa makini unaposomewa fomu hii. Unaweza kuuliza maswali kabla ya kukubali kujiunga na utafiti huu.

Lengo la utafiti

Lengo la utafiti huu nikujua hali ya matumizi ya uchunguzi wa saratani ya shingo la mfuko wa uzazi katika wanawake wanaohudumiwa katika hospitali ya Naivasha.

Kushiriki katika utafiti

Tunaomba kushiriki kwako katika utafiti huu ili tuweze kufanikisha lengo hili. Unauhuru wa kukataa kushiriki na kujiondoa kutoka utafiti huu wakati wowote bila kupoteza faida.

Kujitolea

Kushiriki katika utafiti huu ni wa kujitolea. Sio lazima ujadili jambo lolote ambalo hautaki na pia unaweza kusitisha mahojiano wakati wowote.

Utaratibu

Utafanyiwa ifwatavyo: Baada ya kukubali kujiandikisha katika utafiti huu, utaulizwa maswali kadhaa. Kinasa sauti kitatumika. Pia majibu yataandikwa na mtafiti kwa kitabu. Hii ni kuhakikisha kwamba yote yanayojadiliwa yamekumbukwa. Usijitambulishe kwa jina. Unauhuru wa kupatiana jibu lolote utakalo; hakuna jibu lililo sahihi ama lisilo sahihi.

Adhari na manufaa ya kushiriki kwa utafiti huu

Unaweza kupata aibu, wasiwasi au kubabaika kutokana na maswali utakayoulizwa. Kushiriki katika utafiti huu kutahitaji utoe wakati wako. Utafiti huu utanufaisha kwa kuonyesha changamoto ambazo wanawake wanapata wakati wanatafuta huduma za uchunguzi wa saratani ya shingo la mfuko wa uzazi na jinsi hizi huduma zinazoweza kunufaishwa.

Usiri

Habari zako zitawekwa kwa usiri kama anayetafitiwa. Mtafiti, watafiti wa kamati ya utafiti na maadili ya KEMRI na kamati ya NACOSTI wanaweza kupata habari kukuhusu. Habari kukuhusu itatambulika na nambari ya utafiti utakayo pewa na kwa hivyo haitalinganishwa na habari zingine zozote. Ingawa tutajaribu kuweka habari kukuhusu siri, mtu anaweza kugundua ya kwamba ulishiriki kwa utafiti huu na hivyo basi akapata habari kukuhusu. Kwa hivyo tunaomba washiriki wote kuweka mazungumuzo haya siri. Habari zitakazochukuliwa zitafungiwa ili kuimarisha usiri. Asante kwa kukubali kushiriki.

Gharama kwako

Hakuna gharama ya kushiriki katika utafiti huu.

Mawasiliano

Unaweza kuuliza maswali kuhusu utafiti huu. Mtafiti wa utafiti huu ni Serah Mbatia mwanafunzi wa JKUAT. Ikiwa una maswali yeyote kuhusu utafiti huu, unaweza kuwasiliana na Mkurugenzi,

ITROMID-KEMRI

S.L.P 54840-00200 Nairobi

Simu: 254-020-2722541

Barua pepe: itromid@kemri.org

Mawasiliano KEMRI ERC

Ikiwa ungehitaji kujua mengi kuhusu haki yako ya kushiriki katika utafiti huu, wasiliana na karani, KEMRI- kamati ya maadili na utafiti

S.L.P. 54840-00200

Simu: 020-2722541, 2713349

Taarifa ya mshiriki

Nimeelezwa kuhusu utafiti huu. Nimekua na nafasi ya kuuliza maswali. Najitolea kushiriki katika utafiti huu.

Jina la anayetafitiwa: _____

Sahihi ya anayetafitiwa au

Kidole cha Gumba cha mkono wa kushoto _____

Tarehe ya mahojiano: _____

Appendix 8(a): Focus Group Discussion Guide - English

Title of Study: Cervical cancer screening uptake among women attending Naivasha County Referral Hospital

Participant Number: _____

Date of Focus Group Discussion: __ __ / __ __/ __ __ __ __

Name of moderator: _____

Focus group number: _____

Number of respondents: _____

Start Time: _____ End Time: _____

Part A: Background information

1. What is your age? Years__ __
2. What is your current marital status?
   - (1) Single, ☐
   - (2) Married (monogamous) ☐
   - (3) Married (polygamous) ☐
   - (4) Divorced/separated ☐
   - (5) Widowed ☐
3. What is the highest level of formal education you have attained?
   - (1) None ☐
   - (2) Primary ☐
   - (3) Secondary ☐
   - (4) College(post-secondary) ☐
4. Occupation: _____

Part B: Guide

5. What are the common health problems affecting women in Naivasha?
6. What do women know of cervical cancer (causes, who is at risk, its importance to women's health)?
7. What things increase a woman's chances of developing cervical cancer?
8. How can women protect themselves from cervical cancer?
9. What do women think about cervical cancer screening (if ever screened what would a woman tell others; about it, seeking treatment, its benefits, the challenges; if not screened what barriers do women face)?
10. What would make it easier for women to seek cervical cancer screening?
11. How would women like information on cervical cancer screening to be given to them? (When? from whom?)

Appendix 8(b): Focus Group Discussion Guide - Kiswahili

Kidadisi cha Kukagua mazugumuzo

Ukaguzi wa Matumizi na Manufaa ya Uchunguzi wa Saratani ya Shingo la Mfuko wa Uzazi

Sehemu A

2. Je, unamiaka mingapi? Miaka __ __
3. Je, umeolewa?
   (1)Pekee ☐
   (2)Ameolewa (mke na mme mmoja) ☐
   (3)Ameolewa (wake wengi mme mmoja) ☐
   (4)Kukosana/kuwachana ☐
   (5)Mke aliyefiwa na mme ☐
4. Je, ulisoma hadi kiwango gani?
   (1) Sijasoma ☐
   (2) Shule ya msingi ☐
   (3) Sekondari ☐
   (4) Chuo (baada ya sekondari) ☐
5. Je, unajimudu kivipi maishani? _____

Sehemu B

6. Je, ni shida gani za kiafya ambazo ni kawaida kwa wanawake Naivasha kupata?
7. Je, wanawake wanajua nini kuhusu saratani ya shingo la mfuko wa kizazi (Kinachosababisha, nani anayeweza kupata ugonjwa huu, umuhimu wake kwa afya ya wanawake)?
8. Je, ni nini ambacho kinaogeza uwezekano wa mwanamke kupata saratani ya shingo la mfuko wa kizazi?
9. Wanawake wanawezaje kujikinga kutokana na saratani ya shingo la mfuko wa kizazi?
10. Wanawake hufikiria nini kuhusu saratani ya shingo la mfuko wa kizazi (kama mwanamke amechunguzwa anaweza kuambia wanawake wengine nini kuhusu kuchunguzwa, kutafuta matibabu, faida zake, changamoto ambazo atapata akichunguzwa; na kama mwanamke hajachunguzwa ni nini kinafanya wanawake wasichunguzwe)?
11. Je, ni nini kinachoweza kufanywa ili kurahisisha wanawake kutafuta uchunguzi wa saratani ya shingo la mfuko wa kizazi?
12. Je, wanawake wanawezapenda kujulishwa aje habari za saratani ya shingo la mfuko wa uzazi? (Lini? kutoka kwa nani?)

Appendix 9: SSC Approval Letter

KENYA MEDICAL RESEARCH INSTITUTE

P.O. Box 54840-00200, NAIROBI, Kenya
Tel (254) (020) 2722541, 2713349, 0722-205901, 0733-400003; Fax: (254) (020) 2720030
E-mail: director@kemri.org info@kemri.org Website:www.kemri.org

KEMRI/SSC/102445 **15th January, 2014**

Serah Mbatia

Thro'
Director, CPHR
NAIROBI

17/01/2014

REF: SSC No. 2723 (Revised) – Cervical Cancer Screening Uptake among Women Attending Naivasha District Hospital

I am pleased to inform you that the above mentioned proposal, in which you are the PI, was discussed by the KEMRI Scientific Steering Committee (SSC), during its **210th** meeting held on **6th January, 2014** and has since been approved for implementation by the SSC.

Kindly submit 4 copies of the revised protocol to SSC within 2 weeks from the date of this letter i.e., 29th January, 2014 for onward transmission to the ERC office.

We advise that work on this project can only start when ERC approval is received.

Sammy Njenga, PhD
SECRETARY, SSC

Appendix 10: ERC Approval Letter

KENYA MEDICAL RESEARCH INSTITUTE

P.O. Box 54840-00200, NAIROBI, Kenya
Tel (254) (020) 2722541, 2713349, 0722-205901, 0733-400003; Fax: (254) (020) 2720030
E-mail: director@kemri.org info@kemri.org Website:www.kemri.org

KEMRI/RES/7/3/1 **April 04, 2014**

TO: **SERAH F. W. MBATIA,**
PRINCIPAL INVESTIGATOR

THROUGH: **DR. CHARLES MBAKAYA,**
ACTING DIRECTOR, CPHR,
NAIROBI

Forwarded
11/10/2014

Dear Madam,

RE: **SSC PROTOCOL No. 2723 (*RESUBMISSION*): CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING NAIVASHA DISTRICT HOSPITAL (*VERSION 1.2 DATED 17TH MARCH 2014*)**

Reference is made to your letter dated 17th March 2014. ERC Secretariat acknowledges receipt of the receipt of the revised proposal on March 21, 2014.

This is to inform you that the Ethics Review Committee (ERC) reviewed the documents submitted and is satisfied that the issues raised at the 224th meeting of the KEMRI ERC on 18th February 2014 have been adequately addressed.

The study is granted approval for implementation effective this **4th April, 2014**. Please note that authorization to conduct this study will automatically expire on **April 3, 2015.** If you plan to continue with data collection or analysis beyond this date, please submit an application for continuing approval to the ERC Secretariat by **February 20, 2015**.

Any unanticipated problems resulting from the implementation of this protocol should be brought to the attention of the ERC. You are also required to submit any proposed changes to this protocol to the SSC and ERC prior to initiation and advise the ERC when the study is completed or discontinued.

You may embark on the study.

Yours faithfully,

EAB

DR. ELIZABETH BUKUSI,
ACTING SECRETARY,
KEMRI/ETHICS REVIEW COMMITTEE

Appendix 11: African Journal of Health (AJHS) Manuscript

Cervical cancer screening uptake among women in Naivasha

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Summary

Background: About 86% of the cases of cervical cancer occur in developing countries. In Kenya, cervical cancer represents 21% of all cancers in women. With a development period as long as ten years, cervical cancer is possible to control through screening and treatment. Several projects in reproductive health have been offering cervical cancer screening using visual methods through visual inspection with acetic acid or visual inspection with Lugol's iodine (VIA/VILI). Family planning counselling programs are a good opportunity to discuss the benefits of cervical cancer screening with gynaecological examination more easily accepted. The study looked at the outcomes in relation to screening.

Methods: A total of 384 women aged 18 – 49 years were enrolled through systematic sampling in the descriptive cross sectional study. These were clients who attended the family planning clinic in June-July 2014. Participants answered questions from semi-structured questionnaires.

Results: Participants who reported to have been screened for cervical cancer were 15.4%. Those screened during the study period were 2.3% and of these, 44.4% had positive VIA/VILI results. Age-group, residence, employment status and usual treatment centre were significant in relation to cervical cancer screening uptake.

Conclusion: The availability of screening services in clinics that clients normally attend does not translate into high proportions in cervical cancer screening uptake. However, targeted screening will result in more positive cases being reported.

Keywords: Cervical cancer screening uptake, VIA/VILI, family planning clinic, Kenya

[Afr J Health Sci. 2016; 29(1):13-24]

Introduction:

Cancer has become a major source of morbidity and mortality globally. Worldwide, breast and cervical cancers represent 33% of the new cancer cases in females. Cervical cancer is the second most common cancer among women worldwide and the tenth most common cancer in developed regions [1]. About 86% of the cases occur in developing countries [1]. This represents 13% of female cancers. High-risk regions include Eastern and Western Africa with a cumulative risk (0-74) of 3.8%. Age-specific incidence rates peak at around 55-64 years [1, 2].

Breast cancer represents 22% of all the cancers while cervical cancer represents 21% in Kenya as reported at the Nairobi Cancer Registry (2003-2007). In Kenya, 10.32 million women 15 years older are at risk of developing cervical cancer [2].

Human papillomavirus (HPV) infection is a well-established cause of cervical cancer and though it is a necessary cause, it is not sufficient. Infection with one or more of the high-risk oncogenic types leads to invasive cervical cancer after around 10 years. About 38.8% of women in the general population are estimated to harbour cervical HPV infection at a given time. Other cofactors associated with the progression from cervical HPV infection to cancer include tobacco smoking, high parity and age at first sexual intercourse and co-infection with HIV [2].

Cervical cancer screening can reduce the incidence of cancer by early detection and treatment. In an effort to reduce the incidence, morbidity and mortality associated with cervical cancer, the Kenyan government is placing greater emphasis on the need for system strengthening to facilitate provision of primary prevention, screening, early detection, diagnosis and appropriate management of pre cancer and cancers [3].

Visual inspection with Acetic Acid (VIA) and Visual Inspection with Lugol's Iodine (VILI) are used in low-resource settings. In Kenya, several projects in reproductive health and HIV have been offering cervical cancer screening using visual inspection methods VIA/VILI [3]. The family planning clinic also offers family planning and contraceptive methods services. Despite this service being offered, not all clients take up cervical cancer screening.

There are six levels of health care delivery in Kenya (Kenya Essential Package for Health-KEPH). Specialization increases with each increasing level with level 6 being the highest. District and sub-district hospitals are in Level 4. They are the first referral hospitals and form an integral part of the district health system [4]. The family planning clinic is a setting that offers the opportunity for health providers to add value to the visit of a woman through cervical cancer screening [5]. Though easily preventable, the cervical cancer screening coverage is low with some studies showing that cervical cancer screening uptake lower than 30% [3, 6, 7].

Since most cervical cancer cases are diagnosed late, the scope for successful treatment is limited and very expensive and consequently the mortality rate is high among the affected patients. Cervical cancer thus claims the lives of women in the prime of their life. It has been estimated that the average life years lost due to cancer of the cervix is 25.3 years [3]. Hence the target of the national cervical cancer prevention program strategic plan is to ensure that women have access to cervical cancer prevention and control services through family planning clinics. The objective of the study was to determine the uptake of these services through a descriptive study. By knowing how these services are working, measures can be put in place to make them more effective. This will lead to a reduction of incidence of cervical cancer and have a positive impact on health and development.

Materials and Methods:

This was a descriptive cross-sectional study to determine cervical cancer screening uptake in a family planning clinic.

Study site

The study was carried out at Naivasha District Hospital, a level four referral hospital located in a major catchment area bordering highly populated areas. It is in Naivasha District in Nakuru County which lies northwest of Nairobi. Naivasha district's main industry is agriculture especially horticulture. It is also a popular tourist destination. It is cosmopolitan with many people migrating there in search of work. The poverty rate is at 40% and the urban population at 45.8% [8, 9].

Study participants

The study population was the clients treated at the family planning clinic at the hospital. The sample size was 384 participants (Cochran formula 1977). With the facility attending to approximately 1200 clients during the study period, systematic sampling with a sampling interval of 3 was used to choose the study participants. Those included were between 18-49 years of age who were willing to give consent and participate.

Data collection

Data was obtained through semi-structured questionnaires from the study participants. Questionnaires were interviewer-administered to participants after they were attended to by the healthcare providers. Information sought for in the questionnaires included socioeconomic factors, access to healthcare, exposure to risk factors.

Data analysis

Data was entered, cleaned and analysed using Statistical Package for Social Sciences (SPSS) version 20.0. The economic group level was achieved by first undertaking factor analysis. Then the two factors contributing the most were analysed using a standardized index (SI) and divided into three

economic groups [10]. For continuous data, distribution characteristics were confirmed using Kolmogorov-Sminorv test and Exploratory Data Analysis (EDA). The risk level was a composite variable obtained by grouping those exposed to any co-factors (like tobacco smoking, high parity, and co-infection with HIV [2]) necessary for progression of HPV infection to cervical cancer and those not exposed. During analysis, the participants were divided into three age-groups. This was based on high risk HPV being more common in women under 25 years and considering the approximately 10 year-developmental period to cervical cancer, the best age to be screened if only screened once is over 35 years of age [2].

Ethical considerations

Approval was obtained from the KEMRI Ethical and Research Committee and the Scientific Steering Committee. All participants provided written informed consent.

Results:

Demographic and economic characteristics

A total of 384 participants were enrolled for the descriptive study. Age-group of 25-34 had the highest number of participants at 47.4% (Table 1). The participants had a mean age of 26.81 with a standard deviation of 6.14 and ranged from 18 to 48 years. They had a median of 2 children with a minimum of 1 and a maximum of 9. A large percentage of the participants, 94.8% were married. Secondary education had 44.5% of the participants followed closely by 42.4% with a primary level education. Almost half of the participants, 44.3%, were dependent on relatives with 43.2% of them being housewives depending on their husbands/partners. Those working for an income were either in salaried or self-employment and accounted for 55.5%. Those who lived in the area near the hospital accounted for 68.5% (Table 1). Over three-quarters (83.9%) were living in rented houses.

Table1: Socio-demographic characteristics of study participants (N = 384)

Variable	Frequency	Percent (%)
Age group (years):		
24 and below	160	41.7
25-34	182	47.4
35 and above	42	10.9
Marital status:		
Single	17	4.4
Married (monogamous)	356	92.7
Married (polygamous)	8	2.1
Divorced/separated	3	0.8
Widowed	0	0
Education level:		
None	4	1
Primary	163	42.4
Secondary	171	44.5
College (post-secondary)	46	12
Source of income:		
Employed (salaried)	82	21.4
Husband/ partner/relative	170	44.3
Self-employed	131	34.1
Non-response	1	0.3
Residence:		
Area near the hospital	263	68.5
Other areas in Naivasha	118	30.7
Area outside Naivasha	3	0.8
Economic level:		
Lower	30	7.8
Medium	347	90.4
Higher	7	1.8

Access to the hospital

The hospital was the nearest health facility for 83.3% of the participants and yet it was the usual health facility for 86.7%. Walking to the hospital was the common mode of transport for 58.9% of the participants (Table 2a).

Table 2a: Access to hospital

Variable	Frequency N=384	Percent (%)
Nearest facility to client's home:		
Yes	320	83.3
No	64	16.7
Usual facility for health care:		
Yes	333	86.7
No	51	13.3
Mode of transport:		
Motor vehicle/Matatu	120	31.3
Walking	226	58.9
Motorbike	36	9.4
Both walking and Matatu	2	0.5

Table 2b: Access to hospital (continuous variables)

Variable	N	Median	Interquartile range (IQR)	Minimum-Maximum
Time (minutes) to reach hospital via:				
Matatu/Motor vehicle:	120	30	20-35	5-180
Walking:	226	30	15-30	2-120
Motorbike:	36	20	10-30	1-60
Both walking and Matatu:	2	40	40-40	40-40

Participants History

Table 3: Participants history

Variable	Frequency N=384	Percent (%)
Client's risk level on exposure to co-factors:		
Low level	307	79.9
High level	77	20.1
Method of family planning (N=381)		
Pill	97	25.5
IUD	45	11.8
Injectable	194	50.9
Implant	42	11
Male/female condom	1	0.3
Non-response	2	0.5

About 20.1% of the study participants reported to being exposed to co-factors that increased their risk of cervical cancer. For the 99.2% who were using a family planning method, 50.9% were on the injectable contraceptive method (Table 3).

Cervical cancer screening uptake

A total of 59 participants (15.4%, 95% confidential interval (CI) 11.8-19.0%) had been screened both from ever screened and screened during the study period for cervical cancer. Cervical cancer screening uptake as reported by participants screened before was higher in recent years (Figure 1).

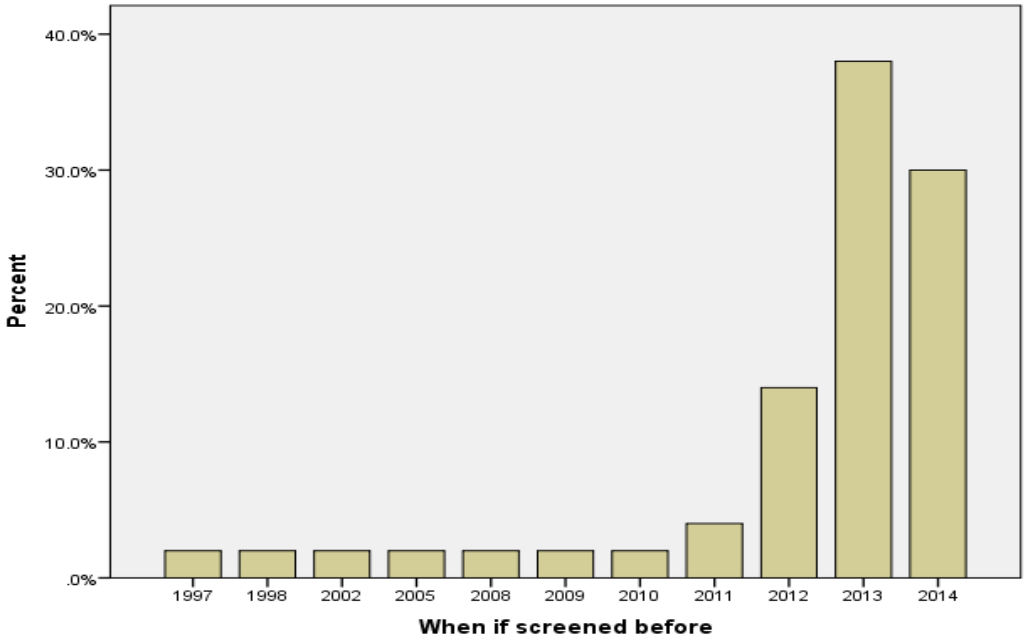

Figure 1: Percentage per year for participants reporting having being screened before study period (N=53)

Variables with a significant p-value of <0.05 in the bivariate analysis were age group, residence, employment status, usual treatment centre. Age group was significant at p=<0.001 with age group of 25-34 with the highest frequency at 49.2% of those screened. The residence of the participants was also significant at p-value of 0.010. Having been screened had a higher frequency for those living near the hospital at 54.2% compared to those living farther from the hospital at 45.8%. Those working was significant at p=0.001 with those working having a higher frequency (76.3%) of having been screened (Table 4).

Table 4: Association between screening and other variables

Variable	**Screened**				**P-value**
	Yes = 59		**No = 325**		
	Frequency	%	Frequency	%	
Age group (years):					
24 and below	14	23.7	146	44.9	
25-34	29	49.2	153	47.1	<0.001
35 and above	16	27.1	26	8.0	
Residence					
Area near Hospital	32	54.2	231	71.1	
Other areas	27	45.8	94	28.9	0.010
Educational level					
Primary and below	25	42.4	142	43.7	0.851
Secondary and above	34	57.6	183	56.3	
Marital status					
Single	2	3.4	15	4.6	
Married (monogamous)	54	91.5	302	92.9	0.436
Married (polygamous)	2	3.4	6	1.8	
Divorced/separated	1	1.7	2	0.6	
Employment status					
Working	45	76.3	168	51.9	
Unemployed	14	23.7	156	48.1	0.001

Economic level					
Low	6	10.2	24	7.4	
Middle	53	89.8	294	90.5	0.544
High	0	0	7	2.2	
Nearest facility					
Yes	45	76.3	275	84.6	
No	14	23.7	50	15.4	0.114
Usual treatment centre:					
Yes	43	72.9	290	89.2	
No	16	27.1	35	10.8	0.001
Risk of cervical cancer					
High	17	28.8	60	18.5	
Low	42	71.2	265	81.5	0.068

VIA/VILI results among those screened

During the study period, the prevalence of screening was 2.3%. Of these, 44.4% had positive VIA/VILI results (Table 5). All of the study participants screened (100%) reported that they would tell people they knew closely about cervical cancer screening.

Table 5: Screening during study period

Variable	Frequency N=9	Percent (%)
Screened during study period:		
Yes	9	2.3
No	375	97.7
Screening results:		
Positive VIA/VILI	4	44.4
Negative VIA/VILI	5	55.6
Tell others know closely of screening(if screened today):		
Yes	9	100
No	0	0

Discussion:

This cross-sectional study determined cervical cancer screening uptake in a family clinic which is a setting where gynaecological examination is expected to be more easily accepted. The overall cervical cancer screening uptake was 15.4%. The findings of this study show a lower cervical cancer screening uptake compared to other regions where a study done in Embu County had an uptake of 25% [11] and another in Kisumu had 17.5% [12]. However, this study showed that in those who had been screened, the percentage uptake was higher in the recent years shown in Figure 1 in contrast to an Eldoret study [13] that showed previous screening was uncommon. This could be due to increased dissemination of cervical cancer information.

Those screened during the study period were 2.3%. This low screening uptake is reflected in other studies with 4.1% in low income countries [14], 0.6% in South-east Nigeria [6] and 22.6% in Moshi Rural District Tanzania [7]. A 2010 study in a similar setting in Eldoret, Kenya showed an uptake of 12.3% [5]. This data shows that though screening has been there for at least five years, screening uptake is still low. In contrast, high income countries have higher uptake. In 2009, a study in Italy found that only 65% of women regularly undergo pap testing due to public health programmes used to promote cancer screening [15]. The difference may be due to different knowledge levels of cervical cancer between the high- and low-income countries. Despite a large number of participants reporting that the hospital was the nearest facility the target population of 75% to be screened has not been reached even with active promotion of cervical cancer screening through VIA/VILI [16].

There was a similar significant association in age reported in other studies [12-13, 15]. Similar to the Napoli *et al.*, 2011 [15] and a Kisumu [12] studies, a significant association was found between having a source of income and cervical cancer screening uptake. Screening involves payment and those in the low income level may not be able to spare any money. High risk participants have been found to be more likely to accept screening. A retrospective cohort study done using patient chart data

from HIV-infected women enrolled at a centre in Nairobi found acceptance of cervical cancer screening at 44% [17]. Another study done on 3642 women in HIV care and treatment clinics in Kenya and had an uptake of 87% [18]. Though the participants' level of education was not significant, a study in Tanzania [7] found women's level of education was significant in relation to uptake of cervical cancer screening service.

Of those who were screened during the study period 44.4% had positive VIA/VILI results. A cross sectional survey of 219 women in Eldoret found the test positivity rate was 13.9% and 16.9% for VIA/VILI respectively [5]. Another study was done on 3642 women in HIV care and treatment clinics in Kenya found that among the women offered screening 15% of them had a positive or unsatisfactory VIA [18]. Claeys [19] study found 4.5% of Pap smears were abnormal while Gatune [20] study reported 4.3%. The reason for the high positive results in this study could be as a result that participants reporting genital tract problems may be targeted for screening. The family planning clinic has one nurse at a time resulting in long queues. Clients attended to during the study period were 1200. According to the World Health Organization, the recommended provider: client ratio is 2.3:1000 [4]. The result is a limited ability to offer the screening to everyone.

A limitation of this study was that the study participants were those accessing family planning services. This could mean that the outcome from this study may not be generalized to those not using family planning services. The family planning clinic also focuses on screening using VIA/VILI which is not suitable for postmenopausal women [21].

Conclusion:

Though there is active promotion of cervical cancer screening through VIA/VILI in family planning clinics, it does not translate into high proportions in cervical cancer screening uptake. This is despite the fact that these services are offered in a clinic where clients normally attend and gynecological examinations are expected to be more easily accepted. When screening is targeted on specific cases presenting with symptoms or those in the peak age for occurrence of cervical cancer (35-45 years), it will result in more positive cases being reported than in those studies where screening is not based on these factors. These findings suggest that more needs to be done by hospital management teams and healthcare providers to reach those accessing the family planning clinics. This can be by easing access to services through the increase of the number of VIA/VILI trained healthcare providers and screening rooms and improving public health programmes used to promote cancer screening resulting in an increase in the use of cervical cancer screening services.

Acknowledgement:

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Appendix 12: Journal of Health, Medicine and Nursing Manuscript

Factors Associated with Cervical Cancer Screening Uptake in Naivasha District, Kenya

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Abstract
The objective was to determine and explore factors associated with cervical cancer screening uptake among women attending the family planning clinic at a public hospital in Naivasha District. A concurrent triangulation mixed study method was used. Using systematic sampling, 384 women aged 18-49 years of age were enrolled into the study. Data was collected through semi-structured questionnaires. After purposive sampling 7 key informant interviews and 2 focus group discussions were conducted using interview guides among women treated at the family planning clinic. Data from the quantitative study was analyzed for descriptive statistics, bivariate (unpaired student's t-test, Chi-square) and multivariate analysis (Binary logistic regression analysis) while themes were used to analyze data from the qualitative study. Using multivariate analysis, employment status, usual treatment center, risk of cervical cancer, having heard of cervical cancer and knowing someone who had been screened were factors found to be significantly associated with cervical cancer screening uptake. Large number of clients, inadequate screening rooms, inadequate information and misconception of facts on cervical cancer screening were identified as common barriers to uptake of screening. Hospital talks were the most preferred source of getting information related to cervical cancer. In conclusion, policy makers should establish a comprehensive strategy that ensures programs in health facilities and outreaches educate those accessing their facilities well so as to increase cervical cancer screening uptake.
Keywords: Cervical cancer screening; VIA/VILI; family planning clinic; Naivasha referral public hospital; Health access.

[Journal of Health, Medicine and Nursing. 2016; 24: 43-51]

Introduction

Worldwide, cervical cancer is the second most common cancer among women while in developed countries it is the tenth. Statistically, 86% of the cases occur in developing countries. High-risk regions include Eastern and Western Africa (Ferlay *et al.* 2010, WHO/ICO 2010). In Kenya, 10.32 million women aged 15 years and over are at risk of developing cervical cancer (WHO/ICO 2010). Cervical cancer is the second most common cancer type, at 21%, of all cancers as reported at the Nairobi Cancer Registry (2003-2007).

Cervical cancer screening can reduce the incidence of cancer by early detection and treatment. However there are barriers to cervical cancer screening uptake. In developing countries barriers include: absence of knowledge about the disease, lack of familiarity with the concept of preventive healthcare, geographic inaccessibility of services, lack of support from families and communities and fear of the speculum exam (Huchko *et al.* 2011, ACCP 2004, MOPHS 2012).

Visual inspection with Acetic Acid (VIA) and Visual Inspection with Lugol's Iodine (VILI) are used in low-resource settings. In Kenya, several projects in reproductive health and HIV have been offering cervical cancer screening using VIA/VILI methods (MOPHS 2012).

Hence the target of the national cervical cancer prevention program strategic plan (NCCPPSP) is to ensure that women have access to cervical cancer prevention and control services through family planning (FP) clinics. This will lead to a reduction of incidence of cervical cancer and have a positive impact on health and development.

Most studies do not distinguish between women not seeking healthcare and those using the health care system but not receiving appropriate preventive care because women avoid cervical examinations (Rigal *et al*. 2011). A study by Were *et al.* (2011) stated that limitations to its findings were referable to women who accepted to participate and then undergo screening using visual inspection hence the likelihood that the women that did not accept screening were significantly different. This study aimed to identify the factors influencing women to participate in VIA/VILI screening. The expected outcome was generation of information that can be applied in policy making and outreach programs to reach women and increase coverage rates.

Methods

Study design and setting

This was a concurrent triangulation mixed method study using a cross-sectional study design, key informant interviews (KII) and focus group discussions (FGD). The study was carried out at Naivasha District Hospital, a level four referral hospital located in a major catchment area bordering highly populated areas. The hospital has a family planning clinic that offers cervical cancer screening services using VIA/ VILI.

Study participants

These were clients, 18-49 years of age, treated at the family planning clinic at the Naivasha District Hospital. They were the participants for both the cross-sectional study and the FGD. Doctors and nurses were the study participants for the KII.

Sampling strategy

A cross-sectional study sample size (Cochran formula, (Bartlett et al., 2001)) of 384 was used and systematic sampling used to select the study participants. Purposive sampling was used to select participants for the qualitative study. This included 2 FGDs. Each group had minimum of 5 and a maximum of 6 participants. There were 7 KII. The KII participants were recruited on the basis of having first-hand knowledge on cervical cancer screening.

Data was collected through semi-structured questionnaires from the study participants for the cross-sectional part and guides for the KII and FGD part of the study. Both note taking and tape recording were used to record information for the qualitative part of the study.

Data analysis

Data was entered, cleaned and analyzed using Statistical Package for Social Sciences (SPSS) version 20.0 for the quantitative data. Qualitative information was coded thematically by researcher and a research assistant. Data was then analyzed manually using content analysis.

Ethical considerations

Ethical and scientific approval was obtained from the Ethical and Research Committee and the Scientific Steering Committee in Kenya Medical Research Institute (KEMRI).

Results

From June to July 2014, data was collected using a concurrent triangulation mixed method study method. The themes are represented by a few quotes from both the FGD and KII (Table 1). These themes are linked with the cross-sectional part of the study.

Participants' characteristics

The 384 cross-sectional participants had a mean age of 26.81 with a standard deviation (SD) of 6.14 and ranged from 18 to 48 years. All the FGD participants were married and had at least a primary education. Median age was 29 and ranged from 23 to 47 years. The 7 KII participants ranged in age from age 35 to 59 and consisted of 5 females and 2 males. They were all involved in various ways in cervical cancer screening.

Table 1: Illustrative quotes from the FGD and KII

Theme	Quotes
Reason for not screening	-*"There is no need to stress myself finding out if I have cervical cancer now, it is better to wait until that day reaches and I am told I have it (FGD-5, 8)."* -*"So we really do screening on women using IUCD and if there is a mother who has a problem (KII-1, 3)."* -*"Some of them are elderly mothers, if they find whoever is screening is a grandchild and because of the position for screening they are ashamed and don't want to be screened (KII-3)."*
Knowledge of cervical cancer	-*"If we who are the women are ignorant, we don't expect most of our husbands to know about cervical cancer (FGD-7)."* -*"You can get cervical cancer by getting pregnant early, for example, 15 years or getting pregnant in older age, for example, 40 years (FGD-8)."* -*"I know someone whose problems with cervical cancer started after she had a C-section (FGD-7)."* -*"Women also ask if men can be treated for HPV (KII-5)."*
Knowledge of cervical cancer screening	-*"I think women are screened after every 3 months (FGD-5)."* -*"I heard screening is painful so I wouldn't like to be screened unless I am in pain from illness (FGD-8)."* -*"Watching what we eat and by being clean will prevent cervical cancer (FGD-2, 3 and 5)."* -*"When we treat a woman, she tells others that if you go to Naivasha you are screened and if there is a problem it is solved there so you find the women coming because they have been informed by one of their own (KII-3)."* -*"We don't want to be just told to enter and get ready to be screened without guidance. This causes women to fear to be screened (FGD: 3-5)."*
Source of information	-*"There are those who do not have radios or TVs; or the information might be brought when we are not listening therefore it is better when we get the information at the hospital (FGD-2, 5 and 7)."* -*"Women who have heard of cervical cancer screening in outreaches, but missed also come to the hospital to ask for screening (KII-7)."* -*"I heard of cervical cancer because someone I knew died from it. Though I was not taught but did my own research (FGD-7)."* -*"After the church service, time can be taken to inform us as it is difficult for women to leave their chores and also to get many women together other times (FGD-7)."* -*"We talk on the importance of screening and making it routine during health education talks at the maternal child health (MCH) plus we spare a few minutes so that the clients can ask questions (KII-5)."* -*"Visual aids have an impact as when women look at them and they think that they look like that, they say now let me be screened (KII-7)."*

Of the 384 participants, 70.1% were aware that cervical cancer can be screened for. More than three-quarters of the study participants did not know of someone who had been screened for cervical cancer (Table 2). In the KII the uptake was seen from two different perspectives; one was that some challenges discouraged women going to the hospital from being screened while another group described screening uptake to be high during outreach campaigns in churches and women groups.

Table 2: Participants information on cervical cancer (N=384)

Variable	Frequency	Percent (%)
Cervical cancer preventable: (N=257)		
Yes	146	56.8
No	42	16.3
Do not know	69	26.8
***Causes of cancer:**		
Do not know	198	51.6
Family planning methods	33	8.6
Food eaten	34	8.9
Multiple partners	33	8.6
Sexual activity	32	8.3
Lack of awareness	32	8.3
Cervical wounds	15	3.9
STDs	5	1.3
Stress	5	1.3
Smoking	5	1.3
Ever heard of HPV:		
Yes	39	10.2
No	344	89.6
Non-response	1	0.3
Ways of transmission: (N=39)		
Do not know	29	74.4
Contagious	1	2.6
Sexually	9	23.1
Advice women they know closely to be screened:		
Yes	374	97.4
No	9	2.3
Non-response	1	0.3
Future risk of cancer:		
Low	164	42.7
Medium	109	28.4
High	72	18.8
Do not know	39	10.2
Partner/Husband know of cervical cancer:		
Yes	160	41.7
No	186	48.4
Do not know	33	8.6
Non-response	5	1.3
Hard to discuss symptoms of female genital tract:		
Yes	67	17.4
No	315	82
Non-response	2	0.5
Know someone screened:		
Yes	95	24.7
No	289	75.3

**Other mentioned causes for cervical cancer by participants were pregnancy at an early age, early start of sexual activity, natural occurrence, inheritance and abortion at 0.5%; long duration without pregnancy, dirt, wet clothes, method used to deliver baby and drugs each at 0.3%.*

Reasons for not screening

Study participants who were not screened during the study period gave various reasons (Table 3) similar to the FGD. These included: not knowing that cervical cancer can be screened for and not being asked to be screened. Other reasons in the FGD included long waiting queues, fear of the screening process, belief that one needs to first get the symptoms and belief that a health care practitioner will notice a problem during other routine practices such as a C-section.

Table 3: Reasons for not being screened (N=375)

Variable	**Frequency**	**Percent (%)**
Reason not screened:		
No reason	98	26.2
Do not know of cervical cancer screening	78	20.9
No information on cervical cancer	37	9.9
Not aware of where cervical cancer screening is done	31	8.3
Will be screened at a later date	24	6.4
Been screened before	20	5.3
Not sick	20	5.3
Not decided	17	4.5
Busy schedule	13	3.5
Not asked by healthcare worker	11	2.9
Fear	8	2.1
Do not want to be screened	5	1.3
Financial constraints	5	1.3
Was waiting to deliver	2	0.5
Others*	1	0.3

**Other reasons for not being screened mentioned by participants include: long waiting queue, distance from facility, forgot to go for screening, advised to wait until 30 years of age and just out of high school each at 0.3%.*

In the KII additional reasons for not screening clients for cervical cancer were: inadequate screening rooms, lack of enough trained workers, inadequate screening equipment and reagents; and resistance to new services by some clients and staff (Table 1). The large number of clients was reported to be as a result of referrals from health centers and dispensaries in rural facilities where staff were not trained on cervical cancer screening. Many services in addition to VIA/VILI were also offered at the same FP clinic. As a result, screening was done on specific cases. This proved to be a challenge especially when encouraging other clients whose target visit had not been the FP clinic to be screened.

Some key informants responded that cost of screening was a challenge for some clients while others said it was affordable. High turnout in the villages when free cervical cancer screening was offered was also reported. It also came out that the FGD participants were not aware of the cost of screening though they hoped it was affordable.

Knowledge on cervical cancer

More than half of the study participants at 51.6%, did not what causes or increases the chance of a woman getting cervical cancer. The others gave different reasons (Table 2). Some things that some FGD participants thought caused cervical cancer included those mentioned in the cross-sectional study plus: Food eaten especially crops grown with chemicals, re-cycling cooking fat, family planning methods for example the coil and long duration of using family planning. Participants at 89.6% had not heard of Human papilloma virus (HPV) though 56.8% thought cervical cancer was preventable (Table 2). Most of the FGD participants mentioned that they did not know about prevention of cervical cancer while others gave some ideas (Table 1).

While a large percentage at 97.7% had not been told they have any kind of cancer by a doctor those who saw their risk of getting cancer in the future as low were 42.7% (Table 2). Some of the FGD study participants had different views on who they thought was at risk of getting cervical cancer. These included women at menopause, women with children, very young and very old women. Husband/partner lack of knowledge of cervical cancer was high at 48.4% (Table 2). In the KII it also came out that though spousal support was good, men were not actively involved.

Knowledge on cervical cancer screening

Participants who mentioned that women can be screened for cervical cancer even if they were healthy were 93% (Table 4). However responses on when the screening was to be done was varied with 75% saying it should be done whenever a woman wants (Table 4).

Table 4: Knowledge factors (N = 384)

Variable Knowledge	**Frequency**	**Percent (%)**
A woman can be screened if healthy	357	93
Screening helps a woman know if there is a problem with her cervix	357	93
Screening should be done whenever a woman wants	288	75
A positive screen test means a woman has cancer	210	54.7
Screening should be routine	203	52.9
Screening should be only at advice of health worker	151	39.3
Screening tells a woman she has a fatal condition with no cure	116	30.2
Screening is painful	89	23.2
The screening process is like getting a vaccine	85	22.1
Screening should be once in a lifetime	16	4.2

In the FGD, views on the number of times a woman should be screened were varied from several months to a year. The FGD participants also preferred waiting until a healthcare practitioner advised them to be screened.

Women of age 30 and above, who have children, were seen as being more receptive to screening by key informants. Almost all the study participants at 97.4% would advise the women they knew closely to be screened for cervical cancer (Table 2). Some FGD participants also reported that if screened they would tell other women.

Communication methods on cervical cancer

The most common means study participants got cervical cancer information was from health workers and media both at 32.7% (Figure 1). Nurses at 81% were the main source of information among these health workers.

While radio at 51.2% followed by television (TV) at 25% were the most common sources of media information.

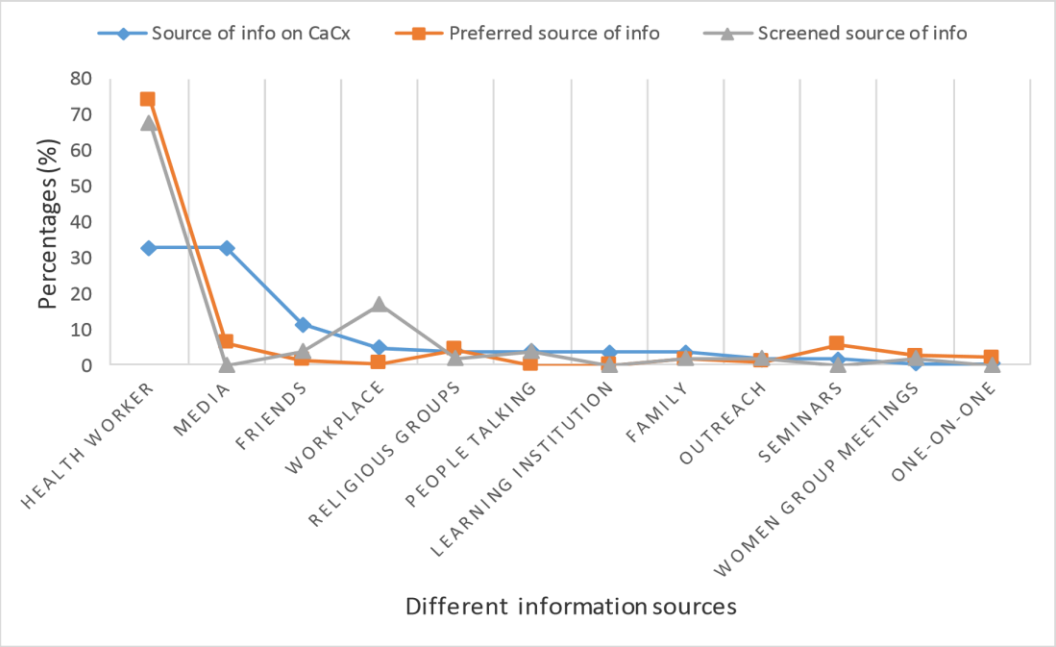

Figure 1: Trends in information sources

**Figure 1 shows where the source of information that the participants reported having heard about cervical cancer was. It also showed the future preferred source of information for all the participants. The participants who had been screened also indicated the source where they had got information on cervical cancer screening.*

When asked about how they would prefer to be given information on cervical cancer, 74.2% wanted to be given educational talks at the hospital (Figure 1). This was also the preferred source in the FGD. The most preferred form of media for getting information was the radio at 45.8%. This was slightly lower than the 51.2% who had heard about cervical cancer through that same means of communication. Posters, TV and pamphlets were preferred by the more educated FGD participants who could read. The preferred language for communication by FGD participants was Kiswahili or English for those in urban areas with local languages favored in rural areas.

Factors associated with cervical cancer screening

Variables which had a p-value ≤ 0.25 in the bivariate analysis were subjected to binary logistic regression analysis following Hosmer and Lemeshow (1989). These were age group, residence, income level, nearest hospital facility, usual treatment center, risk of cervical cancer, ever heard of cervical cancer, knowing someone screened, knowledge level, perceived risk of getting cancer and partner/husband knowledge of cervical cancer. Some of the variables were retained in the model and were associated with screening uptake (Table 5). Those working were 2.35 times more likely to have been screened than those not working. The hospital as a usual treatment center was significant at p=0.041. Those who indicated that the hospital was the usual treatment center were less likely to have been screened (OR=0.43).

Table 5: Multivariate analysis result

Variable	α – value (P-value)	Exp (β) (Odds Ratio)	95% C.I.
Employment status:			
Working		1.0	
Unemployed	0.023	2.35	1.13-4.92
Usual treatment center:			
Yes		1.0	
No	0.041	0.43	0.19-0.97
Risk of cervical cancer:			
High		1.0	
Low	0.028	2.41	1.1-5.27
Ever heard of cervical cancer:			
Yes		1.0	
No	0.006	5.64	1.64-19.41
Know of someone screened:			
Yes		1.0	
No	<0.001	9.97	4.99-19.92

Exposure to factors that increased the risk of cervical cancer was significant with those at high risk 2.41 times more likely to have been screened than those at low risk. Knowing someone who has been screened was highly significant at $p<0.001$. Those who knew someone who had been screened were 9.97 times more likely to have been screened (Table 5).

Discussion

A woman's ability to make an informed decision and act on it is influenced by existing social networks and institution or community in addition to her own beliefs and behavioral patterns (ACCP 2004). This came out in this study as participants gave various reasons for lack of screening despite the fact that it was offered in a facility they were visiting. Those wishing to be screened at a later date were much lower than expected in relation to other studies (Were *et al*. 2011). Lack of awareness and knowledge on screening and where it is done were main barriers to cervical cancer screening. Similar findings were found in other studies (ACCP 2004; Claeys *et al*. 2003). During the interviews, screening for cervical cancer was often compared with screening for HIV or for a fatal condition with no cure. This may be due to perception that cancer is untreatable and eventually leads to death (MOPHS 2012, WHO 2006). Fear of screening process and abnormal results were findings similar to other studies (ACCP 2004; Were *et al*. 2011). Screening is often viewed as an unnecessary procedure by women who perceive themselves as healthy (Gatune *et al*. 2005). This was also reported in the study. In the KII, this was also a problem because clients reported late for screening when they were already in the cancer stage. Other participants waited for a healthcare worker to advise them to be screened. Thus screening could be directly linked to health practitioners.

The long waiting period in the FGD due to the large number of clients resulted in healthcare workers being rushed with little time allocated for each client. Some KII participants reported that this could be solved by training more healthcare workers on cervical cancer screening, having specific rooms for VIA/VILI where clients feel their privacy is protected and adequate reagents and instruments for screening.

In this study, having heard of cervical cancer had a higher percentage than other studies (Gatune *et al*. 2005; Eze *et al*. 2012). It was also significantly associated with screening uptake. Those who had heard of cervical cancer were 5.6 times more likely to be screened. Those who thought it was preventable were higher than other studies (Eze *et al*. 2012; Agurto *et al*. 2004). This could be due to increased dissemination of cervical cancer information over the years.

Most of the participants in this study did not know how to prevent cervical cancer and were higher than reported in other studies (Gatune *et al*. 2005). Causes of cervical cancer similar to other studies were mentioned and included family planning methods, sexual activity and type of food eaten.

There is a perception that all cancers in general have similar causative factors such as diet. Those who perceived they were at high risk of getting cancer were low, similar to another Kenyan study (Were *et al*. 2011). This could lead to low screening uptake. Only 10.2% had ever heard of HPV similar to other studies (Wong *et al*. 2013) with many not knowing how it is spread. The need not to associate cervical cancer with STIs due to promiscuity while giving information to clients so that they can make choices about their sexual behaviors is a challenge (Lee *et al*. 2007; Waller *et al*. 2004).

While one of the barriers to cervical cancer screening was lack of support from families and communities (ACCP 2004), support given by husbands may encourage women to get screened as indicated by a key informant who reported that husbands who knew of screening told their women to go and be screened. Though participants reported that a woman can be screened even if she's healthy, some participants thought a woman should be screened three times in a year. This was in contrast to the recommended screening cycle in Kenya which is every five years except for HIV positive women (MOPHS 2012).

It was also noted that women satisfied with the services they received were more likely to describe their experience to family members and friends (ACCP 2004). Knowing someone who had been screened was significantly associated with screening uptake. However, few participants in this study knew someone who had been screened. This could be one of the reasons for low screening uptake.

Privacy and unavailability of female providers were some similar main barriers identified (Agurto *et al*. 2004). In both the KII and FGD, preference of older more experienced female healthcare practitioners was mentioned. This shows the sensitivity with which matters dealing with the female genital tract are hence the need to understand the culture and attitudes within an area.

Most of the participants in the FGD were not for media being how they would like to learn more on cervical cancer which was the opposite of Gatune *et al*. (2005) study. They reported that the information may be aired when they were not tuned in. The fact that media was not mentioned by those who had been screened supports this. Educational talks at the hospital as a preferred source of information was more than three times the Gatune *et al*. (2005) study. This could be as a result of the trust clients have with the healthcare providers. Another reason came out in the KII where it was reported that clients interact with the healthcare workers and can ask questions.

High risk participants have been found to be more likely to accept screening (Huchko *et al*. 2011; McKenzie *et al*. 2007). This also came out in this study with those at a higher risk more likely to be screened. The definition of high risk were those participants who indicated they were exposed to co-factors.

The study limitation was that study participants ranged in age from 18-49 years. This could mean that the outcome from this study may not be generalized to younger and older women. Further research may be needed to confirm this. However, the family planning clinic focuses on screening using VIA/VILI which is not suitable for postmenopausal women (WHO 2006).

Conclusion

Various challenges like inadequate knowledge on cervical cancer and screening are worrying considering studies conducted over five years before the current one have reported similar findings. Clients not knowing the cause and associated risk factors may hinder them from taking adequate measures to protect themselves. Results of this study show that knowing someone who was screened was highly significant in relation to having been screened. Therefore it may be advisable for reproductive health programs to ensure that women who have been screened are adequately informed on cervical cancer. This will have a ripple effect on other women they associate with, demystify the screening process and in turn influence other women to be screened.

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