



**AWARENESS AND PRACTICE OF CERVICAL CANCER SCREENING
AMONG WOMEN ATTENDING GYNECOLOGY AND OBSTETRIC
DEPARTMENT AT NYAMATA DISTRICT HOSPITAL**

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AMONG WOMEN ATTENDING GYNECOLOGY AND OBSTETRIC
DEPARTMENT AT NYAMATA DISTRICT HOSPITAL**

By

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AMONG WOMEN ATTENDING GYNECOLOGY AND OBSTETRIC
DEPARTMENT AT NYAMATA DISTRICT HOSPITAL**

a. Declaration by the Student

I do hereby declare that this *dissertation* submitted in partial fulfilment of the requirements for the degree of **MASTERS OF SCIENCE** in **NURSING**, at the University of Rwanda/College of Medicine and Health Sciences, is my original work and has not previously been submitted elsewhere. Also, I do declare that a complete list of references is provided indicating all the sources of information quoted or cited.

12 JUNE 2017

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ABSTRACT

Cervical cancer is a leading cause of death worldwide. The developing countries experience cervical cancer related death around ten times developed countries due to different factors. This includes lack of awareness about cervical cancer. Cervical cancer is preventable through screening. Despite the introduction of cervical cancer screening in Rwanda, 2012 women seek care with late stages of cervical cancer.

Aim of the study: This study aimed to assess the level of awareness about cervical cancer and the practice of cervical cancer screening among women attending Nyamata Hospital.

Specific Objectives: To assess the level of awareness of cervical cancer screening among women attending Nyamata Hospital, to identify the source of information about cervical cancer among women attending Nyamata Hospital and to assess the level of practices of cervical cancer screening amongst women attending Nyamata Hospital.

Methodology A quantitative descriptive cross sectional study was conducted at Nyamata District Hospital; 161 women seeking services in Gynaecology and obstetrics department of Nyamata Hospital were recruited. A probability sampling was used and women were selected using systematic random selection. Structured questionnaire have been used, and participants able to sign a consent form have been interviewed. Data were analysed using SPSS version 23.

Results: The findings revealed a lack of awareness about cervical cancer and an absence of cervical cancer screening practices. Only 46.6% have heard of cervical cancer, 83.8% did not know even one symptom of cervical cancer. 88.2% could not list at least one risk factor of cervical cancer but 81.4% believe that cervical cancer can be prevented. Among respondents no one has been screened for cervical cancer.

Conclusion: Cervical cancer educational sessions in health facilities will be the helpful mean to raise awareness on cervical cancer.

DEFINITION OF KEY TERMS

AWARENESS

Awareness refers to a consciousness of internal or external events or experiences that is thought by some to separate human and non-human, throughout the ability to directly know and perceive, to be conscious of events, objects, thoughts, emotions, or sensory patterns. More broadly, it is the state or quality of being aware of something (Pam,2012).In this study awareness will be the basic knowledge of women about cervical cancer including risk factors, symptoms, signs and screening services wherever they got it, without considering the educational sessions by health care providers.

PRACTICE

Practice refers to a habit or a manner of performing something (Farlex, 2016). In this study Practice is a habit of women of performing cervical cancer screening.

CERVICAL CANCER

Cervical cancer is a cancer arising from the cervix caused mainly infection by human papilloma Virus at 75%, due to the abnormal growth of cells that have the ability to invade or spread to other parts of the body with absence of symptoms in its early stage (Wikipedia, 2016).

SCREENING

Screening refers to the use of simple tests across a healthy population in order to identify individuals who have disease, but do not yet have symptoms. Examples include breast cancer screening using mammography and cervical cancer screening using cytology screening methods, including Pap smears (WHO, 2016).In this research screening is the test performed to women either voluntary or requested by physician in absence of symptom of cervical cancer to identify cervical cancer lesions.

LIST OF SYMBOLS AND ABBREVIATIONS/ACRONYMS

Ca	Cancer
CDC	Centre for Disease Control
CMHS	College of Medicine and Health Sciences
HPV	Human Papilloma Virus
MOH	Ministry of Health
Pap test	Papanikolau Test
VIA	visual inspection with acetic acid
VILI	Visual Inspection of the cervix with Lugol Iodine
WHO	World Health Organization

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CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

Cervical cancer is the disease of uteri cervix caused by persistent infection from human papilloma virus (HPV). This can be asymptomatic from the time of infection up to 20 years (Chin *et al.*, 2014). The HPV lesions are presented into precancerous lesions and cancerous lesions (Bruni, Barrionuevo-Rosas, Albero, Aldea, Serrano, Valencia, Brotons, Mena, Cosano, *et al.*, 2016). Cervical cancer is manifested by isolated vaginal bleeding or vaginal bleeding following sexual intercourse, vaginal discharge and painful sexual intercourse. Cervical cancer is among preventable disease, through vaccination and screening. It is curable disease when identified and treated early (Catarino *et al.*, 2015). The screening of cervical cancer used in most countries are Papanikolau smear test, visual inspection with acetic acid (VIA) or Visual Inspection of the cervix with Lugol Iodine (VILI) (Nawal, 2009).

1.2 BACKGROUND TO THE STUDY

Non-communicable diseases such as cancers are a public concern worldwide and the leading cause of death with 8.2 million of deaths in 2012 (Europe PMC Funders Group, 2015). Cancer burden is high in developing countries with 56.8% of all cancers where 64.9% death related to cancer occurs. Predictions of GLOBOCAN 2012 projected a significant increase in cancer new cases to 19.3 million per year by 2025 as a result from growing of world population (WHO 2014).

Cervical cancer is the first cancer causing death among female population and the fourth cancer affecting women worldwide. Cervical cancer kill 266000 women in 528 000 new cases every year worldwide (WHO 2014). In developing countries cervical cancer is the second most common cancer among women and represent 7.5% of all female cancer related death where 85% of the proportion occur (Ferlay *et al.*, 2015).

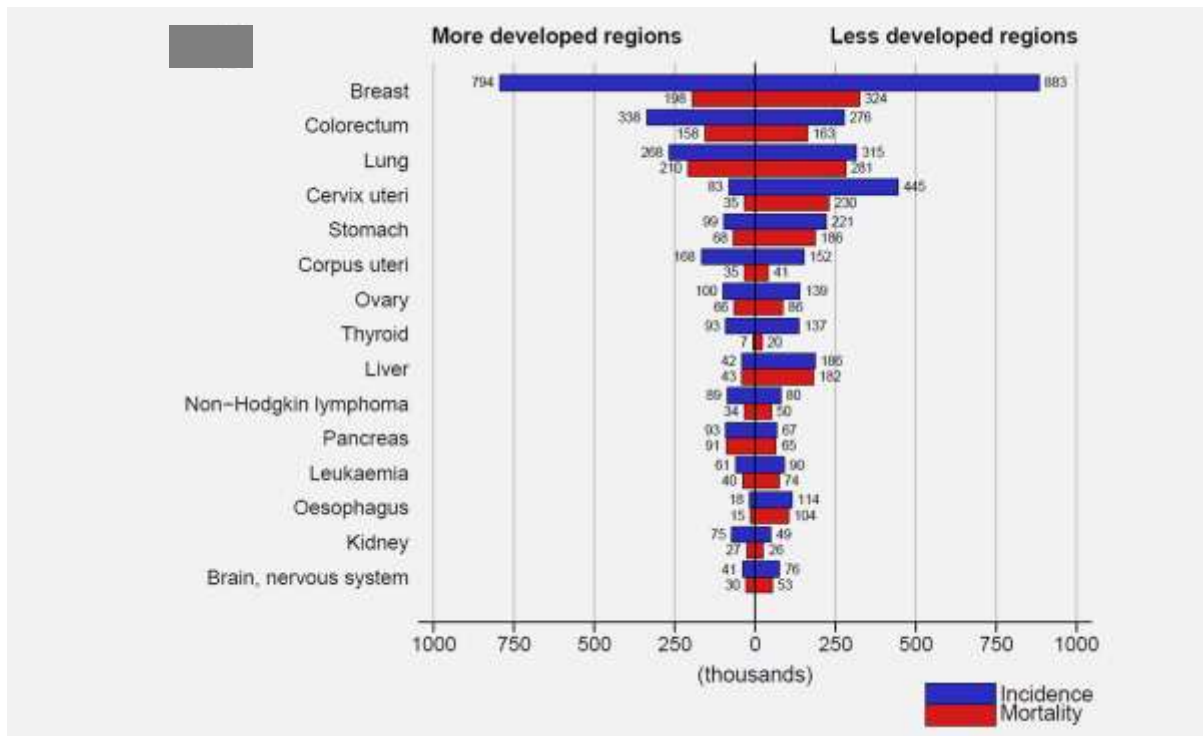


Figure 1 1: New cases and death of cervical cancer in women in developed regions and less developed

The figure 1.1 show the new cases and death of cervical cancer in women in developed regions and less developed in 2012 (Ferlay *et al.*, 2015).

Thus in developed countries cervical cancer is no more ranked among killing disease as they have advance in the prevention throughout organized screening programs (Kim *et al.*, 2009)

Therefore, the survival chance differs from developing countries to developed ones. Thailand women will have 58% of survival, while the Indian women have a 42% chance which will be dramatically different from Sub-Saharan Africa, where only 21% chance to survive is accorded as the region with high incidence of cervical cancer (Catarino *et al.*, 2015).

Furthermore in Developed countries, where screening programs for early detection and early treatment are in place have a high prevention rate of 80% of cervical cancers. In developed world only 2to3women died from cervical cancer in 100,000 thus the developing world, exactly in sub-Saharan Africa experience 22 to 23 women who died in 100,000 women (Assoumou *et al.*, 2015).

On the other hand the true incidence of cervical cancer in many African countries is unknown; due to multiple reasons. Under-reporting, poor awareness about the disease, lack of human and financial resources, non-existent cancer service policies and lack of political will as means of effective screening programs, have been appointed as factors contributing to increased mortality in developing world (Denny et al. 2006).

Cervical cancer incidence in 2012, per 100000 women show high incidence of cervical cancer in East Africa and high mortality rate compared to other African regions (Ferlay *et al.*, 2015)

Table 1 1: Cervical cancer incidence in 2012, per 100000 women

Region	Incidence	Mortality
World	14	6.8
More developed region	9.9	3.3
Less developed region	15.7	8.3
Africa	27.6	17.5
Southern Africa	31.5	17.9
Middle Africa	30.6	22.2
West Africa	29.3	18.5
East Africa	42.7	27.6

The factors contributing to the high incidence of cervical cancer were listed. The lack of awareness and knowledge on cervical cancer and poor cervical cancer screening where screening services are available were the major factors in Sub Saharan African countries (Ntekim, 2012).

Rwanda, a country in East African Region also experiences a burden of cervical cancer. Among female cancer, cervical cancer ranks as the most frequent cancer among women in Rwanda. Current estimates indicate that, in Rwanda , 804 deaths in 1,366 new cases annually at the rate of 14/100000 (Bruni, Barrionuevo-Rosas, Albero, Aldea, Serrano, Valencia, Brotons, Mena, Casano, *et al.*, 2016).

Cervical cancer prevention in Rwanda was vaccination in 2011 and 2012 which was sponsored by different partners, also introduced national screening and treatment programs based on visual inspection of the cervix with acetic acid, to test HPV DNA, cryotherapy, the loop electrosurgical excision procedure and various advanced treatment options.

Unfortunately lack of the financial resources to elaborate a national strategic plan for cancer screening delay implementation of proposed plan in all country (Binagwaho *et al.*, 2013a).

No currently available data regarding awareness of cervical cancer, risk factors, disease course, and screening measures among Rwandan women. Awareness of cervical cancer and awareness of it screening by women are the leading factors in planning of step ahead in terms of cervical cancer screening commitment.

1.2 PROBLEM STATEMENT

Cervical cancer continues to kill women in Rwanda. For the screening methods to be fully utilized, women need to be aware of cervical cancer, prevention methods and the availability of screening services (Oragudosi, 2012). These will enhance uptake of the screening for premalignant lesions and hence reduction of morbidities and mortalities resulting from cervical cancer especially in sub-Saharan African countries. Some barriers to the non-utilization of cervical cancer screening services were listed; among them there is a low level of awareness of services (Lim and Ojo, 2017).

In Rwanda, cervical cancer screening have been introduced in past four years (Binagwaho *et al.*, 2013b). The feasibility of screening using visual inspection of the cervix by acetic acid have been proved in rural health setting (Riedel, 2015). Unfortunately women present with late stage of cervical cancer at health facilities. Reason may be to lack of awareness and not utilisation of available cervical cancer screening services, while routine cervical cancer screening also is important in prevention and early detection of cervical cancer.

In Rwanda, no study has been done about awareness of cervical cancer among women and no data about screening practices using available screening services. This orient the researcher's idea to assess women's' awareness level about cervical cancer and practice of cervical cancer screening

1.3 THE AIM OF THE STUDY

The study aim is to assess the level of awareness and practice on cervical cancer screening among women attending Nyamata District Hospital.

1.4 RESEARCH OBJECTIVES

- To assess the level of awareness of cervical cancer among women attending Nyamata Hospital.
- To identify the source of information on cervical cancer among women attending Nyamata Hospital.
- To assess the level of practices of cervical cancer screening amongst women attending Nyamata Hospital

1.5 RESEARCH QUESTIONS

- What is the level of cervical cancer awareness and practice among women in Nyamata Hospital?
- What is the source of information on cervical cancer for women attending Nyamata Hospital?
- What is the practice level of women attending Nyamata Hospital regarding cervical cancer screening?

1.6 SIGNIFICANCE OF THE STUDY

The findings are expected by the researcher to have importance on different levels:

In nursing profession: The findings will be used as opener of mind on what is expected to healthcare professional in increasing awareness about cervical cancer as a preventable disease and their role in facilitation of cervical cancer screening.

In education: The findings will indicate the necessity improvement of educational sessions about preventable diseases with special focus on cervical cancer by strengthening existing preventive measures of cervical cancer

In research: The findings will be used as reference of further research on cervical cancer.

Policy maker: The findings will influence policy and guidelines on cervical cancer prevention strategies.

In the community: The findings will indicate the need of educational intervention needed to increase awareness about cervical cancer .Finding will also show how far the practice of cervical cancer screening have reached and planning for step ahead to increase practice.

1.8 DISERTATION STRUCTURE

This research project consists of six Chapter and Appendixes:

Chapter 1: Introduction

The introduction describes the background, the statement of the problem, the aim and study objectives, the research questions and the significance of the study.

Chapter 2: Literature Review

The chapter related to literature review discusses the awareness and practices related to the screening of cervical cancer.

Chapter 3: Methodology

The chapter on the methodology provides a description of the study setting, the research design, the study population, the sampling strategy and the sample size, data collection procedures, data analysis, management and dissemination of the findings. Towards the end, this chapter provides the limitations of the study.

Chapter 4: Results

Chapter 5: Discussions

Chapter 6: Conclusion and Recommendations

Appendixes

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter describes concepts related to awareness of cervical cancer and practice of cervical cancer screening. Divided into three part 4 parts include theoretical literature empirical literature, critical review and research Gap identification and .conceptual framework. The literature review contains information from Reviewed Articles, Journals, Books, retrieved on HINARI, Google scholar and Google search.

2.2 AWARENESS OF CERVICAL CANCER

2.2.1 General knowledge of cervical cancer

Cervical cancer is a gynaecological cancer most common among women in developing countries which is under-recognized and under-prioritized. Cervical cancer is a gynaecological cancer most common among women in developing countries (Oguntayo *et al.*, 2011). This under prioritization of cervical cancer contributes to poor knowledge about cervical cancer which results to lack of epidemiological data and poor awareness by women. The under recognition of cervical cancer is due to lack of human and financial resources, absence of cervical cancer service policies and lack of political determination to deal with the problem (Louie, de Sanjose and Mayaud, 2009).

Study done in Nigeria revealed that educational talks in clinics, do not include cervical cancer, therefore women who visit clinic several times for maternal and child health services with concern to get more than one health education about various topics do not get cervical cancer talk, which showed that cervical cancer is not part of their routine health talks. Instead the women were more informed about HIV screening as the only health priority (Ndikom and Ofi, 2012). In the same country, a low level of awareness about cervical cancer at 37,6% which predict the low levels of awareness about risks factors ,signs and symptoms and also it screening (Chinaka and Nwazue, 2013).

These findings are different from Elizabeth 's finding where above four fifth 87% of the women were aware about cervical cancer which means that they are sufficiently aware of cervical cancer risk factors and all other related factors (Elizabeth, Anne and Peter, 2012).

Another study conducted in Ethiopia reveal the great number of women heard about cervical cancer 78.7% and under a half 31% only have knowledge bout cervical cancer (Getahun *et al.*, 2013). Thus in Uganda, the study by Mwaka in Uganda found an interesting level of awareness about cervical cancer; above 99% of study population were aware about cervical cancer (Mwaka *et al.*, 2015).

2.2.2 Knowledge of cervical cancer risk factors

2.2.2.1 Cause of cervical cancer

The principle risk factor is HPV which is considered as necessary but not sufficient cause of cervical cancer in sexually active women and men, transmitted sexually by Skin-to-skin genital contact (Walboomers *et al.*, 1999). Several risk factors complete its necessity for the development of cervical cancer. Those risk factors include infection with human papilloma virus, young age at first sexual intercourse, young age at first full tem pregnancy, multiple sexual partners, high parity and prolonged use of oral contraceptive, family history of cervical cancer and immune depression by HIV AIDS (Chinombe *et al.*, 2014).

2.2.2.2 Human papilloma virus infection

Cervical cancer is developed from persistent infections caused by human papilloma virus with high incidence of 23.8/100000 compared to other types of women cancer. HPV Infection is prevalent in women under 25 years; about 90% disappear in a period of two years thus the persisted infections caused cervical cancer at 75% (Parkin, Pisani and Ferlay, 1999). The prevalence of HPV16 and HPV18, among women are found at low percentage in early stages of cervical cancer and increase with advanced stages successively normal cytology 4.7%, low-grade cervical lesions (LSIL/CIN-1) 26.5%, high-grade cervical lesions (HSIL/CIN-2/CIN-3/CIS) 43.9% and then cervical cancer 68.3% (Bruni, Barrionuevo-Rosas, Albero, Aldea, Serrano, Valencia, Brotons, Mena, Cosano, *et al.*, 2016). In developing countries women infected by HPV, presented late to health care settings. The cytology tests reveal in majority diagnosis of cervical cancer rather than low grade or normal cytology.

2.2.2.3 Sexual behaviour

Early age at first sexual intercourse increased risk of high-risk human papillomavirus (HPV) infection, known as sexually transmitted infection (STIS), responsible of all cases of invasive cervical cancer. This sexual behaviour determines exposure to HPV, by having unprotected sex, having multiple sexual partners, and partner having multiple partners which extends the duration of HPV infection into cervical cancer.

This is determined as risk of HPV infection because of its biological predisposition of the immature cervix during adolescence that may be more susceptible to persistent HPV infections and therefore have a greater risk of cancer development. Secondary to early sexual intercourse, early pregnancy is also a risk factor for cervical cancer by trauma experienced during early childbearing or by high-parity births (Louie *et al.*, 2009).

2.2.2.4 Hormonal Risk factors: Prolonged use of oral contraceptives and high parity

With a synthetic oestrogen and progesterone hormones contained by oral contraceptives; the same hormones as women's body, its prolonged use increases the risk of cervical cancer. These synthetic hormones, mostly oestrogen, increase their activity rather than endogenous oestrogen which results in uncontrolled cervix cell division. Same as in pregnancy, the more you get pregnant, the more exposure to elevated level of oestrogen. With the presence of Human papilloma virus, the multiple exposure to high level of oestrogen facilitates the development of cervical cancer (Brake and Lambert, 2005).

2.2.2.5 Other cervical cancer risk factors

Declined immune system in woman makes them susceptible to cervical cancer. Cervical pre-cancer with suppressed immune system can progress up to an invasive cancer sooner than normal progression. This includes women who have received organ transplants receiving immunosuppressant drugs to prevent the rejection by their body and HIV infected women which damages the body's immune system and places women at higher risk for HPV infection (Grulich *et al.*, 2007).

Smoking for a woman is noted as one among cervical cancer risk factors. Cervical mucus of smoker women contains substances which damage the DNA of cervix cells and may contribute to the development of cervical cancer (Fouda and Elkazeh, 2013).

Cervical cancer may run in some families with familial tendency caused by an inherited condition that women's ability to fight off HPV infection is less than others. That means the presence of a family member diagnosed with cervical cancer increases the chance for all females in the family to develop cervical cancer by two to three times.

Poverty is also a risk factor for cervical cancer in women with very low income, by inability to access adequate health care services. With expensive services like Pap tests, these women cannot be screened for cervical cancer nor treated for cervical pre-cancer lesions because of their progression into cervical cancer.

Various studies were conducted in assessment of awareness about cervical cancer risk factors.

A study carried out by Getahun et al. 2013 in Ethiopia, showed that a half of the women did not know whether cervical cancer have risk factors other 20% report that there is no risk factor for cervical cancer, the same proportion were unable to mention a risk factor although they believe that cervical cancer has a risk factor. Only one third of them were able to identify at least one risk factor for cervical cancer and mostly cited were STI by 21.0% and 16.4% report early onset of sexual activity as specific risk factors of cervical cancer (Getahun *et al.*, 2013).

Another study conducted in Nigeria by Balogun, Odukoya, Oyediran and Ujomu the mostly cited as major risk factors for cervical cancer were early age at first sexual debut, multiple sexual partners and male partner with other female partners (Balogun *et al.*, 2012). Contrary, a study conducted by Amos et al in Uganda, revealed an interesting level of awareness about cancer risk factors and more than 5 risks factors were cited by 88% multiple sexual partners, 82% human papillomavirus infection, and 78% early onset of sexual activity, 63% of participants believed that prolonged use oral contraceptives and injections caused cervical cancer (Mwaka *et al.*, 2015).

2.2.3 Knowledge of Signs and symptoms of cervical cancer

The signs and symptoms of cervical cancer are intermenstrual vaginal bleeding post-menopausal vaginal bleeding post coital vaginal bleeding offensive vaginal discharge and low abdominal pain.

Women seem to be aware of cervical cancer signs and symptoms considering the results in various studies conducted in developing countries. A study done in Uganda by Amos Mwaka revealed an interesting knowledge in women about cervical cancer signs and symptoms. The majority recognized 85% intermenstrual bleeding, 84% post-menopausal bleeding and 83% offensive vaginal discharge (Mwaka *et al.*, 2015).

This is different from one carried out in Ethiopia by Getahun et al. 2013 where signs and symptoms were cited by women on a percentage below 36% as follow: 35.3% know offensive vaginal discharge as major symptom and 29.7% cited excessive vaginal discharge symptom of cervical cancer thus 39.6% did not know any symptom of cervical cancer (Getahun et al. 2013).

2.2.4 Cervical cancer screening

The successful of screening services in low-resource settings will depend on accessibility of screening, diagnosis and treatment services to the majority of women at risk; the minimal costly services and test technology that facilitate immediate treatment of abnormalities; the appropriate educational programmes directed towards health workers and women to ensure correct implementation and high participation and the functioning mechanism for evaluation of the screening programme (Denny, Quinn and Sankaranarayanan, 2006). Cervical cancer is known to be preventable because of long period of pre invasive Stage but is still the major health burden for women in many developing countries. Availability of screening tools, an adequate scale of screening program and effective treatments for early invasive cervical lesions are lacking. The screening test used for many years is the Papanikolaou test (Pap smear), which is the secondary prevention after vaccination; the primary prevention (Fouda and Elkazeh, 2013).

In low resource countries, cytology-based screening programs and/or DNA typing of HPV are usually beyond the capacity of many health services. Visual inspection of the cervix using acetic acid (VIA) or Lugol iodine (VILI) to highlight precancerous lesions allows identification of pre-cancerous lesions in the clinic instead of the laboratory.

Trained health care provider: doctors, nurses and midwives, can effectively perform VIA in identifying pre-cancerous lesions. VIA has successfully been implemented as a relatively simple, acceptable, and cost effective method of treating cervical lesions and preventing development of cervical cancer in resource-limited settings countries (Denny et al. 2006).

For many years various studies indicate that cervical cancer screening services is poorly utilized and the awareness of the need for it is very low even if it have been investigate that the earl detection facilitate the treatment of cervical cancer in early stages which reduce it incidence (Ndikom & Ofi 2012).

A study conducted in Zimbabwe by Chinombe in 2014 revealed very low knowledge of cervical cancer and HPVs and unawareness of some cervical cancer preventive measures such as condoms make them presented late at health care facilities with cervical cancer (Chinombe et al. 2014).

It was found that only a single round of HPV testing was associated with a significant reduction in the numbers of advanced cervical cancers. However, most screening activities in developing countries do not reach the vulnerable women and consequently, a high proportion of cervical cancer cases are diagnosed at an advanced stage.⁸ The utilization of cervical screening services has been low due to absence of knowledge about the disease, lack of familiarity with the concept of preventive health care, poor quality of services, limited human resources and geographic and economic inaccessibility of services (Nene *et al.*, 2007).

An appropriate level of knowledge among women regarding the infectious risk factors for cervical cancer as well as regular prophylactic examinations are the essential factors reducing the risk of developing this cervical cancer (Sulima *et al.*, 2015). The results of a study done by Getahun in Ethiopia reveal that 63.9% of the women knew that cervical cancer can be prevented. The first mean of prevention cited was regular medical screening by 54.8% of the respondents and 52.8% believed that early detection facilitate the cure of cervical cancer at early stages (Getahun *et al.* 2013).

2.3 PRACTICE OF CERVICAL CANCER SCREENING

Various studies conducted in different African countries include Nwozor & Oragudosi in 2013 and Maseko in 2015 concluded the lack of awareness and knowledge about risk factors of cervical cancer contribute to poor participation in cervical cancer which justify poor practice of cervical cancer screening (Oragudosi, 2012; LaMontagne *et al.*, 2014).

Rwanda initiated training in 2010 for health providers in VIA and cryotherapy, with the goal of launching a national cervical cancer screening program for all women between 30 and 50 years old. Initial screenings were conducted in several districts to collect baseline information (Riedel, 2015).

In this research the awareness of cervical cancer causes, risk factors and awareness of preventive measures on cervical cancer as well as practice of cervical cancer preventive measures were assessed to determine the recommendation to put in action in order to avoid the definition of cervical cancer to be a death sentence in Rwandan women.

2.4 CONCEPTUAL FRAMEWORK

Research is laid on concepts and theories. Health Belief Model theory fit this study as it mainly used in health promotion. This is composed by four concepts and three influencing concepts:

1. Perceived severity of the disease considered as the effects that the disease can create in a person. In this study this is linked with knowledge of sign and symptoms of cervical cancer.
2. Perceived susceptibility of the disease as feeling at risk of developing the disease. This is considered in this study as knowledge of cervical cancer risk factors.
3. Perceived benefits of the disease defined as opinion of individual to adapt a new behaviour in order to decrease the disease burden. This is related to the study as awareness of cervical cancer screening by women.
4. Perceived barriers described as what stand in the way preventing individual to adopt new behaviour. In this study it was considered as unavailability of screening services.

The influencing concepts are:

1. Modifying factors as age, level of education, parity, culture, past experience which are personal characteristic influencing individual perception.
2. Cue to actions those are events, people or everything which stimulate individual to adopt new behaviour. In this study this is considered as means of information about cervical cancer.
3. Self-efficacy described as balance between benefit and barrier which give the capability of adopting new behaviour or not. This study link the option as capability of women to practice cervical cancer as screening is beneficial for them and screening services are available (Janz and Becker, 1984).

A woman cannot feel susceptible to cervical cancer, without being aware of it first. With perceived susceptibility of cervical cancer, it is easy for a woman to know the availability of cervical cancer preventive services which will easily facilitate the practices of screening; this explain that without awareness on cervical cancer, screening will not be exercised as various study in developing countries have pointed (Jayant *et al.*, 1996; Fylan, 1998; Saha *et al.*, 2010; Mosavel *et al.*, 2011).

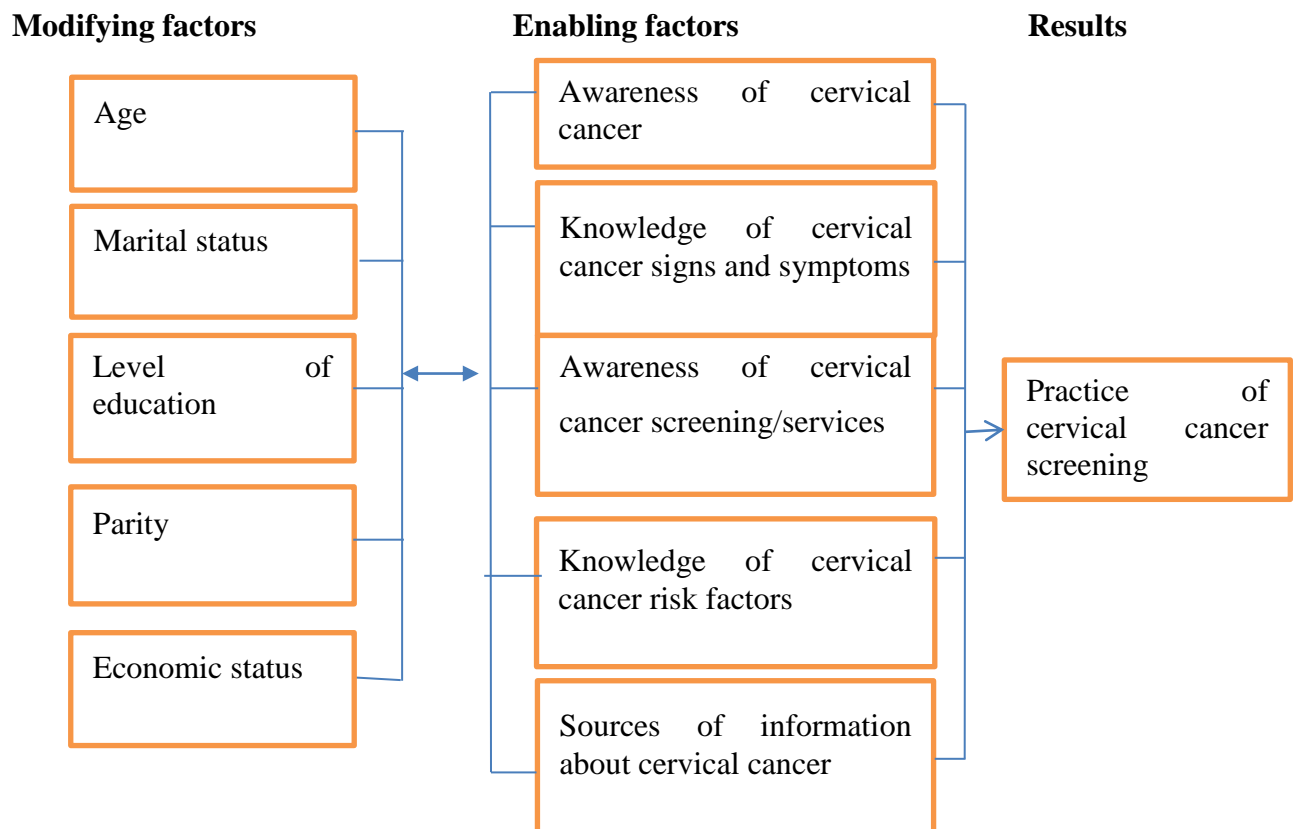


Figure 2. 1 : conceptual framework, adapted from (Janz and Becker, 1984).

CHAPTER 3 METHODOLOGY

3.1 INTRODUCTION

Methodology refers to a set of methods and principles that are used when studying a particular subject. The research methodology is designed in accordance with the aim and objectives of the study (Kumar, 2011). This chapter describes the methodology which was used to conduct this research. It describes the research setting, design, study population and sampling strategy and sample size, data collection instrument and procedures, data management and analysis, ethical considerations, dissemination and limitations of the research.

3.2 RESEARCH SETTING

The study was conducted at Nyamata District Hospital. This is a public district hospital in Nyamata Sector, Bugesera District, in Eastern Province of Rwanda. It is located in about an hour from the Kigali City. This hospital has been inaugurated by the Association of Pentecotist Churches in Rwanda (ADEPR) in 2002. It is the only hospital which serves the whole Bugesera District population and serves 15 health centres from its catchment area with bed capacity of 184 admissions.

Nyamata District Hospital provides emergency services, internal medicine, paediatrics, neonatology, surgery, Gynaecology and obstetrics, outpatients and paramedical services.

This study was conducted in the Gynaecology and obstetrics department of this hospital. This department receives all women seeking gynaecological services including those suffering from cervical cancer at an advanced stage. The received patients of cervical cancer have a relatively low level of awareness about the disease. This is what motivated the researcher to undertake the current study at Nyamata District Hospital.

3.3 RESEARCH DESIGN

A research design is a plan, a structure (organization) and strategy of a study that envisage to find response to research questions (Kumar, 2011).

This study used a quantitative descriptive cross-sectional design. The study was quantitative as it used a structured questionnaire to collect quantitative data. Therefore a quantitative approach was appropriate for this study because it was characterized by the collection of data

which was analysed quantitatively and the results were presented using statistics, tables and graphs (Acaps, 2012).

The study was descriptive as the purpose was to describe the participants' awareness and practices related to cervical cancer. The study described the patients' perceived susceptibility, perceived seriousness, the perceived benefits and barriers related to cervical cancer.

The study was a cross-sectional because it took a snapshot of time for the realization and estimated the prevalence of the awareness and described the practice of cervical cancer in a well specified time.

3.4 STUDY POPULATION

The study population was 240 women seeking out patient care services in the department of Gynaecology and obstetrics at Nyamata District Hospital. This number (240) was a minimal population received in outpatient services of Gyneco obstetric department. This provides four packages services including antenatal care, family planning, delivery, and hospitalization.

3.5 SAMPLING STRATEGY AND SAMPLE SIZE

3.5.1 Sampling strategy

The probability systematic random sampling technique was used. The study participants were selected from women attending the following services: antenatal care, family planning, and hospitalization. The researcher used systematic random selection to get a sample size **n** from **N** population and sampling interval was calculated: $k = N/n$ (SIAP, 2015).

3.5.2 Sample size

The study recruited 150 women as study participants. This number has been obtained by applying the sample size calculation formula provided by Taro Yamane (1967). This formula is provided below (Yamane, 1967):

$$n = \frac{N}{1 + Ne^2}$$

Where n= sample size,

N= minimal number of population received monthly in the department of gynaecology and obstetrics department, Nyamata District Hospital, here N=240

e= the level of precision, here e=0.05;

By replacing in the formula, $n = \frac{240}{1+240 \times 0.05^2} = 150$

The minimal sample size was 150.

3.5.3 Inclusion and exclusion criteria

3.5.3.1 Inclusion criteria

The study included all women aged 21 years and above. Included women were able to give a verbal and signed consent. In addition to this, these women were users of services provided by the department of gynaecology and obstetrics in any of its units including antenatal care, family planning and hospitalization.

3.5.3.2 Exclusion criteria

The study excluded all women younger than 21 years. These women were considered as children in Rwandan context and unable to consent themselves and it is also believed that they have not been exposed to HPV. The study excluded indeed all women with mental disorder and those in uncomfortable situations such as labour.

3.5 DATA COLLECTION

This section provides details of the data collection instrument and procedures.

3.6.1 DATA COLLECTION INSTRUMENT

The study used an adapted questionnaire to collect data (Mwaka *et al.*, 2015). Some questions were added from literature about the study subjects, mainly the literatures from East Africa and South Africa as the permission have been granted by the researcher.

A pilot study has been conducted on 8 women who responded to all questions on questionnaire. After 4 hours the same individuals have been given other questionnaires with the same questions to ascertain the comprehensibility of asked questions and the feasibility of data collection instrument, data were evaluated and refinement was made with respect to the study objectives.

A content validity has been used:

Objective 1: To assess the level of awareness of cervical cancer among women attending Nyamata Hospital. Question 6 to 17

Objective 2: To identify the source of information on cervical cancer among women attending Nyamata Hospital. Question 18 to 19

Objective 3: To assess the level of practices of cervical cancer screening amongst women attending Nyamata Hospital. Question 20 to 24

The original questionnaire in English was translated into Kinyarwanda by expert in order to facilitate comprehension to participants; different expert has been given the questionnaire in Kinyarwanda version to retranslate into English in order to assure the constancy of questions.

3.6.2 DATA COLLECTION PROCEDURES

The researcher herself collected the data. Data collection was done in a secure room. Prior to data collection, the researcher explained to the participants the aim of research and invited them to participate in the study. Each recruited participant signed a consent form before interview. Each interview lasted for a maximum period of 20 minutes.

Data collection begun after obtaining all required ethical approvals as well as permission to conduct the research at Nyamata District Hospital. The researcher then approached the nurse responsible for the gynaecology and obstetrics department to discuss the order of data collection activity in order to get the schedule of the data collection period. Data collection was collected until required sample size was completed.

3.7 DATA ANALYSIS

Data was analysed by using statistical Package for Social Sciences (SPSS for windows) version 23. To estimate the prevalence of awareness and practices of cervical cancer, descriptive statistics using frequency tables, mean and standard deviation was used to summarize data.

Chi-square test was used to assess the association between the provided answers and selected demographic variables such as age, education, occupation, marital status, and parity.

3.8 ETHICAL CONSIDERATIONS

Ethical clearance for the study was obtained from the Institutional Review Board of the University of Rwanda College of Medicine and Health Sciences. In addition to this, the researcher sought approval from the Ethics Committee of the Nyamata District Hospital after which the Nyamata Hospital administration was finally issued the permission for data collection.

Data collection was conducted in a secured room for the research purpose. The purpose of the study was explained to the participants and the researcher involved the participants who were willing to participate. Each participant signed a consent form. The participants had the right to withdraw from the data collection process if he/she wished to do so. No names of participants were collected and the questionnaire used codes instead of the participants' identification.

In the name of confidentiality, data collection took place individually in a data collection room prepared for that purpose where an informed consent was signed. The confidentiality was maintained by the researcher, alone with the participant.

3.9 DATA MANAGEMENT

Collected data were kept confidentially in a safe place, and access to data is restricted to the researcher only. Collected data will not serve other purposes than those of the current study. The data was managed in software using codes numbers. Data will be kept in a secured place, only researcher will have access and keep them for five years.

3.10 DATA DISSEMINATION

After data analysis, the study findings will be presented to a panel prescribed by the University of Rwanda College of Medicine and Health Sciences (UR/CMHS) for assessment and evaluation. In addition, the findings from this study will be presented to Nyamata District Hospital Management to plan for intervention targeting the prevention of cervical cancer. Findings will be shared with Ministry of health and will be published in an academic paper which will be submitted to the Rwanda Journal Series F: Medicine and Health Sciences.

3.11 LIMITATIONS

The only limitation in this study was that the sample size was not representative of all Rwandan population in order to be generalised.

CHAPTER 4 RESULTS

A total of 161 women participated in the study. Their socio demographic characteristics, their awareness on cervical cancer which included cervical cancer symptoms, risk factors, prevention and treatment modalities and also their practices of cervical cancer screening were determined.

Table 4. 1 Socio-demographic characteristics

Variables		Frequency	Percent
Age group of respondents	20-24	29	18.0
	25-29	59	36.6
	30-34	36	22.4
	35-39	27	16.8
	40-44	8	5
	45-49	1	0.6
	55-59	1	0.6
	Total	161	100.0
Level of education	No formal education	5	3.1
	Primary education	106	65.8
	Secondary and higher education	50	31.1
Marital status	Total	161	100.0
	Married	161	100.0
Occupation	Employed by Government	8	5.0
	self-employed	141	87.6
	Self-employed Farmer	121	75.2
	self-employed Trader	20	12.4
	Housewife	12	7.5
	Total	161	100.0
Age at first pregnancy (n=161)	15-19	45	28
	20-24	71	44
	25-29	37	23
	30-34	8	5.0
	Total	161	100.0

Table 4.1 shows that respondent were distributed in every age interval where a big number range in age interval of 25-29 on 36.6 %(59 participants).The mean of participants' age was 30.15.Most of respondent had primary education 106(65.8%) and a number of 141(87.6%) were self-employed as occupation, with 121(75.2%) of farmers .Majority of participants had

1 to 2 children as parity 75(46.6%). All respondents were married and age at first pregnancy of majority range 20-24, 70(43.8%).

Table 4. 2. Awareness of cervical cancer, N=161

Variables		Frequency	Percent
Have you ever heard of cervical cancer?	No	86	53.4
	Yes	75	46.6

Table 4.2 Describes that a number of 86 (53.4%) respondents have not heard of cervical cancer while only 75(46.6%) have heard of cervical cancer.

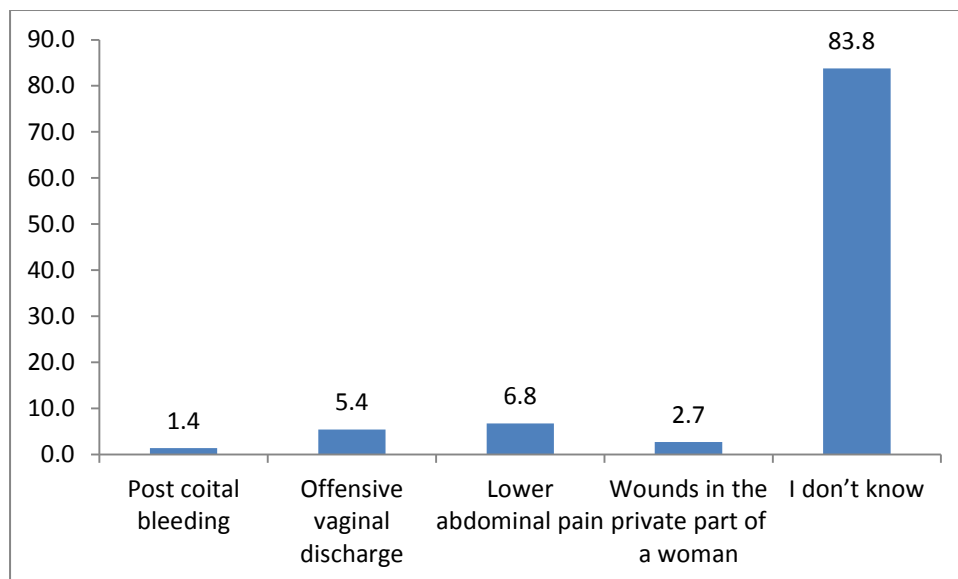


Figure 4. 1 symptoms of cervical cancer

Figure 4.1 shows that Most of respondents who heard of cervical cancer did not know any symptom of cervical cancer 63 of 86(83.8%) and the most listed symptoms were lower abdominal pain by 5(6.8%) and offensive vaginal discharge by 4(5.4%).

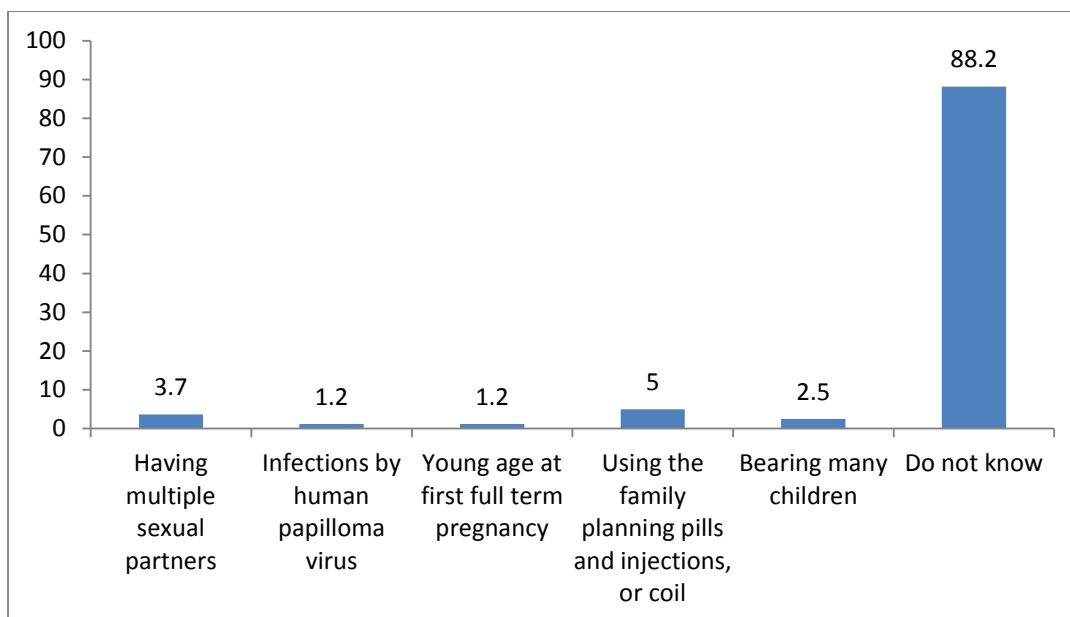


Figure 4. 2 Risks factors of cervical cancer

Figure 4.2 shows that the majority of respondents did not know even one risk factor of cervical cancer 142(88.2%).The most listed risk factors were Using the family planning pills and injections by 8(5%) and Having multiple sexual partners by 6(3.7%).

Table 4. 3 Cervical cancer prevention, N=161

Variables	Frequency	Percentage
Can cervical cancer be prevented?	No	17 10.6
	Yes	131 81.4
	Don't know	13 8

Table 4.3 shows that 131(81.4%) respondents believe that cervical cancer can be prevented while 17 participants (10.6)believe that cervical cancer cannot be prevented as well as 13 respondents (8%) do not know if cervical cancer can be prevented or not.

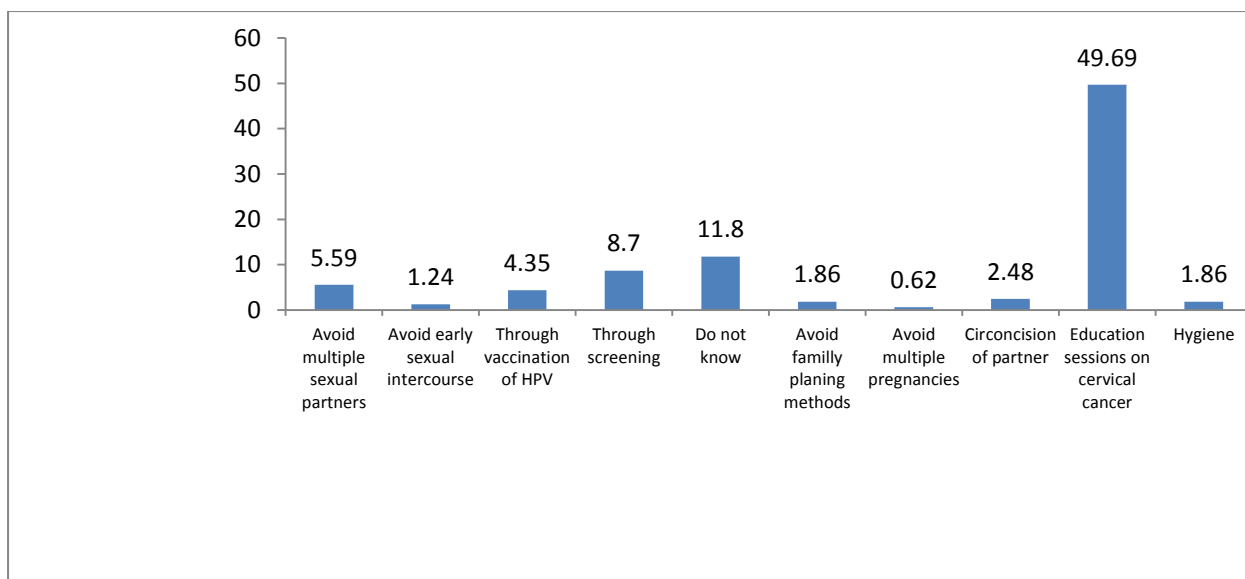


Figure 4. 3 cervical cancer prevention

Figure 3 shows that among respondents who believe that cervical cancer can be prevented 131(81.4%) of respondents, 80(49.7%) of the total listed education sessions on cervical cancer as mean of prevention while screening have been listed by 14(8.7%) of total participants .A number of 19 (11.8%) cannot list any mean of cervical cancer prevention even if they believe that it can be prevented.

Table 4. 4 Treatment modalities of cervical cancer

Variables		Frequency	Percent
Cancer of the cervix can be cured	No	36	22.4
	Yes	125	77.6
	Total	161	100
Explain	if detected early	24	14.9
	if medicine are gotten early	100	62.1
	With evidence of sign and symptoms	1	.6
Treatment:	Yes	4	2.5
Surgery	Yes	115	71.4
Specific drugs given by hospital	Yes	13	8.1
Do not know	Yes	1	.6
Other	vaccination	1	.6
How expensive do you think cancer of the cervix treatment is in this country?	It is reasonably priced	1	.6
	It is very expensive	1	.6
	Don't know	139	86.3
	Total	141	87.6

According to Table 4.4 The majority of respondents 125(77.6%) believe that cervical cancer can be cured. Among them the reason of cure were if medicine are gotten early by 100(62.1%).The most listed modality of cervical cancer was specific drugs given by hospital by 115(71.4%) and most of them do not know the situation of cervical cancer in our country 139(86.3%).

Table 4. 5 Belief that Cervical cancer can be cured

		Can the cancer of cervix be cured?			n	p
		No n (%)	Yes, n (%)	Total, (%)		
Parity	Nulliparous	2(5.9)	31(24.8)	33(20.8)	0.014	
	1 to 2 children	22(64.7)	52(41.6)	74(46.5)		
	3 to 4 children	8(23.5)	21(16.8)	29(18.2)		
	Over 4 children	2(5.9)	21(16.8)	23(14.5)		
	Total	34(100)	125(100)	159(100)		
Age group	20-24	6(17.6)	23(18.4)	29(18.2)	0.045	
	25-29	8(23.5)	51(40.8)	59(37.1)		
	30-34	13(38.2)	21(16.8)	34(21.4)		
	35 and higher	7(20.6)	30(24.0)	37(23.3)		
	Total	34(100)	125(100)	159(100)		
Age at first pregnancy	15-19	12(36.4)	33(26.4)	45(28.5)	0.132	
	20-24	17(51.5)	52(42.6)	69(43.7)		
	25-29	4(12.1)	33(26.4)	37(23.4)		
	30-34	0(0.0)	7(5.6)	7(4.4)		
	Total	33(100)	125(100)	158(100)		
	Occupation	Employed by Public sector	2(5.9)	6(4.8)		8(5.0)
Self-employed		32(94.1)	119(95.2)	151(95)		
Total		34(100)	125(100)	159(100)		
Education	Primary & lower	28(82.4)	81(64.8)	109(68.6)	0.051	
	Secondary & higher	6(17.6)	44(35.2)	50(31.4)		
	Total	34(100)	125(100)	159(100)		

Table 4.5 above showed that awareness of cervical cancer cure was highly associated with parity, age category and slightly education. The p value was statistically significant 0.014 with parity, age category with p value of 0.045 and education on a p value of 0.051.

Table 4. 6. Cervical cancer screening

Variables		Frequency	Percent
Have you ever heard of cervical cancer screening?	No	145	90.1
	Yes	16	9.9
Are there screening procedures to detect cervical cancer premalignant lesions?	Yes	2	1.2
	Don't know	159	98.8
Who should be screened?	Women under 35 years	1	.6
	Women of 35 years and above	1	.6
	Others (List)	153	95.0
	Don't know	6	3.7
Other-List	Every woman	126	78.3
	Girl and woman	25	15.5
	Suspected to have cervical cancer	4	2.5
How often should one go for screening?	Once a year	7	4.3
	Every three years	1	.6
	Don't know	153	95.0

Table 4.6 shows that most of participants have not heard of cervical cancer screening 145(90.1%). A total of 159(98.8%)respondents did not know if there were screening procedures to detect cervical cancer premalignant lesions The majority of respondents listed that every woman have to be screened of cervical cancer 126(78.3%).A number of 153(95.0%) did not know how often one should go for screening.

Table 4. 7 Source of information on cervical cancer and cervical cancer screening

Variables		Frequency	Percent
Cervical cancer:			
News Media: Radio and television	Yes	40	24.8
Brochures, posters and other printed materials	Yes	1	.6
Through health education/health units/hospitals	Yes	14	8.7
Religious leaders	Yes	2	1.2
Family, friends, neighbours and colleagues	Yes	16	9.9
Other (specify)	unresponsive	68	42.2
	cervical cancer patient	2	1.2
	Never	63	39.1
	school	28	17.4
Cervical cancer screening:			
News Media: Radio and television	Yes	6	3.7
Through health education/health units/hospitals	Yes	3	1.9
Other (specify)	Unresponsive	3	1.9
	Cervical cancer patient	8	5.0
	Never	142	88.2
	school	5	3.1

Table 4.7 shows that the majority of participants did not find any mean of information on cervical cancer 63(39.1%) the most listed mean of information about cervical cancer was News Media: Radio and television 40(24.8%).A number of 142(88.2%) have declared that they did not find any mean of information on cervical cancer screening.

Table 4. 8 Practices of cervical cancer screening

Variables		Frequency	Percent
Have you ever screened for cervical cancer	No	161	100.0
Who decides about the screening for you?	Myself	159	98.8
	Healthcare provider (Doctor)	2	1.2
When was the latest time you screened?	never	161	100.0
If no, why?	I am healthy	19	11.8
	It is expensive	2	1.2
	I am not informed/knowledge	98	60.9
	I don't know where the service is delivered	41	25.5
	Other (specify)	1	.6
Other	pregnancy	1	.6

Table 4.8 shows that among respondents no one have been screened of cervical cancer 161(100%).The most listed reason of not been screened were that they were not informed 98(60.9%) and they did not know where the service were offered 41(25.5%).

CHAPTER 5 DISCUSSION

5.1 INTRODUCTION

In this study the awareness of cervical cancer which included cervical cancer symptoms, risks factors, prevention and treatment modalities were assessed. Also the source of information on cervical cancer and practices of cervical cancer screening have been evaluated.

5.2 SOCIO DEMOGRAPHICS CHARACTERISTICS

A total of 161 women were recruited. Given their ages majority of respondents range in age interval of 25-29, on 36% and all respondents were female and the mean age was 30.15. A total of 65.8% had primary education level and 87.6 were self-employed while 75.2 were farmers. All respondents were married and the age of first pregnancy range in age interval of 20-24, on 44%. This is in contrast with the study done in Nigeria where the majority of respondents were within 30–49 years of age (46.7%) and female (62.1%) and 70.3% had secondary level education and above (Wright *et al.*, 2014).The mean age of this study respondents is very different from the mean age of similar study done in India where the mean age of participants were 40.38 (Elamurugan, Rajendran and Thangamani, 2016).Some socio demographic characteristics of this study seem to be similar to the ones of the study conducted in Tanzania 2011 by James John where the majority were in the age range 20-29 (42.7%) and the mean age was 31 years and majority were employed/self-employed 54.4% (John, 2011a).

5.3 AWARENESS OF CERVICAL CANCER

This study found out that women were not aware of cervical cancer neither symptoms nor risk factors. Among all the respondents, 53% had not heard of CC, 46% had heard. This is slightly similar to a study conducted in Nigeria 2014 where only 37.2% of respondents had heard about cervical cancer (Wright *et al.*, 2014). However the findings of this study are in contrast with various studies ; one conducted in Ethiopia 2013 where 78.7 have heard of cervical cancer (Getahun *et al.*, 2013) .Another stud in Indian where Among the housewives showed that 72% knew about cervical cancer (Elamurugan, Rajendran and Thangamani, 2016),and also the other conducted in Ethiopia where, 60.6% have heard about cervical cancer (Enquselassie and Ayele, 2015).The other study conducted in Nigeria revealed high level of awareness of cervical cancer on 74.6% (Ubajaka *et al.*, 2015).Contrary, the study done in India revealed that 93% of the respondents had no knowledge regarding cervical cancer (Pattupara *et al.*, 2016).

A great number of respondents, 83.8% in this study did not know any symptom of cervical cancer, even some who heard of cervical cancer cannot list one symptom of cervical cancer. The most listed symptoms of cervical cancer were lower abdominal pain by 5(6.8%) and offensive vaginal discharge by 4(5.4%). This is in contrast with the study conducted in Ethiopia 2013 which revealed that signs and symptoms were cited by women on a percentage below 36% as follow: 35.3% know offensive vaginal discharge as major symptom and 29.7% cited excessive vaginal discharge symptom of cervical cancer thus 39.6% did not know any symptom of cervical cancer (Getahun *et al.*, 2013). The study findings were in contrast also with another study done in Uganda by Amos Mwaka which revealed an interesting knowledge in women about cervical cancer signs and symptoms where the majority 85% recognized intermenstrual bleeding, 84% post-menopausal bleeding and 83% offensive vaginal discharge (Mwaka *et al.*, 2015). Another study conducted in Tanzania also contrast the present study which revealed the poor knowledge on symptoms of cervical cancer. Almost a half of the respondents didn't know the symptoms for cervical cancer and Vaginal bleeding was the commonly mentioned symptom of cervical cancer (John, 2011b). The present findings were almost similar with the findings of Abiodun in Nigeria where 97.9% had no or poor knowledge of risk factors and knowledge of symptoms of cervical cancer (Abiodun *et al.*, 2013).

Regarding risks factors where 88.2% of respondents did not know even one risk factor of cervical cancer; the most listed risk factors were using the family planning pills and injections by 5% and Having multiple sexual partners by 3.7%. This also were among risk factors listed in the study conducted in Nigeria where he found early age at sexual debut, multiple sexual partners and male partner with other female partners as risk factors of cervical cancer (Balogun *et al.*, 2012). The findings were similar to the study conducted in United Arab Emirates 2015, where also only 10% were aware of one or more cervical cancer risk factors meaning that 90% were not aware of one risk factor of cervical cancer (Metwali *et al.*, 2015). But in contrast with the study conducted by Amos *et al.* 2015 in Uganda, where they found an interesting level of awareness about cervical cancer risk factors and 5 risks factors were cited by 88% multiple sexual partners, 82% human papillomavirus infection, and 78% early onset of sexual activity, 63% of participants believed that prolonged use oral contraceptives and injections caused cervical cancer (Mwaka *et al.*, 2015).

In this study the findings showed that women believe that cervical cancer can be prevented 81.4%; a percentage of 49.7% suggested education sessions on cervical cancer as a helpful mean to increase awareness of cervical cancer in order to fight the morbidity and mortality of cervical cancer. Two different studies conducted in different countries also revealed that health education was effective in improving the knowledge and perception of women regarding cervical cancer and screening. The greatest improvements were observed in an experimental study done in Jamaica 2015, where responses to questions on knowledge, symptoms and prevention, with some items increasing from pre-test to post test on up to 62%. A total of 123 women reached for follow-up, 40.7% of them were screened for cervical cancer (Fouda and Elkazeh, 2013; Interis *et al.*, 2015).

The necessity of educational sessions was explained by a study conducted in Nigeria which revealed that educational talks in clinics, do not include cervical cancer, therefore women who visit clinic several times for maternal and child health services with concern to get more than one health education about various topics do not get cervical cancer talk, which showed that cervical cancer is not part of their routine health talks (Ndikom and Ofi, 2012). Screening have been also listed by 8.7% as preventive measure of cervical cancer. This is in contrast with the results of a study conducted in Ethiopia by Getahun *et al.* in 2013 where the first mean of prevention cited was regular medical screening by 54.8% (Getahun *et al.*, 2013); while in this study, 11.8% do not know if cervical cancer can be prevented. The present findings are also not very different from the Abiodun's results in Nigeria, 2013 where 4.1% identified cervical screening as a way to prevent cervical cancer (Abiodun *et al.*, 2013).

In general this study gave the image that more than 53.4% women were not aware of cervical cancer given. This level of awareness is low compared to various studies done in African countries; one in Nigeria 2013 where they found a low level of awareness about cervical cancer at 37.6% which predicted the low levels of awareness about risks factors, signs and symptoms and also its screening (Chinaka and Nwazue, 2013). Contrary to the other in Kenya 2012; where above four fifth 87% of the women were aware about cervical cancer which means that they are sufficiently aware of cervical cancer risk factors and all other related factors (Elizabeth, Anne and Peter, 2012).

5.4 SOURCE OF INFORMATION ON CERVICAL CANCER AND CERVICAL CANCER SCREENING

The information about cervical cancer are from media 24.8% while 39.1% did not get any information on cervical cancer through any mean whether about screening 88.2% did not get any mean of information about cervical cancer screening. The finding also shows that 90.1% have not heard of cervical cancer screening. This is a bit different from a study done in Nigeria where Result indicated that greater percentage of the respondents 90% have heard about cervical cancer screening and their major source of information was the media; television 35.2%, and radio 32.4% (Ingwu, 2016). This result were slightly the same as the results from Nigeria where also 39% listed Television as the commonest source of the information about cervical cancer (Wright *et al.*, 2014).

In the present study 98.8% do not know the existing of some measure to detect cervical cancer. This was similar to the study done in India where about 80% of subjects did not know that it was possible to detect cervical cancer early nor were they aware of different screening methods as well as limited understanding of the types of cervical cancer screening techniques and poor disposition towards undergoing cervical cancer screening (Gupta *et al.*, 2013).In this survey the majority of women 78.3% believe that every women not below or above which age have to be screened for cervical cancer.

5.5 PRACTICES OF CERVICAL CANCER SCREENING

This study found out that cervical cancer screening is not practiced 100%. This is in contrast to the study conducted by Mentwali, in the United Arab Emirates which revealed that a proportion of only 37.2% have not been screened (Metwali *et al.*, 2015). Also a study conducted in Indian 2012 by Anjali Modi and colleagues revealed a high level of non-utilization of cervical cancer screening among nurses as health care providers on 80% but with an interesting level of awareness of 70% (Alok *et al.*, 2012). The result were not very different from ones of a Nigerian Study where only 1.4% of the women have had cervical screening done; meaning that 98.6% did not have cervical cancer screening (Abiodun *et al.*, 2013).

As revealed by various African studies that lack of awareness and knowledge about risk factors of cervical cancer contribute to poor participation in cervical cancer which justify poor practice of cervical cancer screening (Oragudosi, 2012)(LaMontagne *et al.*, 2014)(Chidyaonga-Maseko, Chirwa and Muula, 2015).The most listed reason of not been

screened were that they were not informed 60.9% and they did not know where the service was delivered 25.5%. This was in the same context as the reported barriers to cervical cancer screening in a study conducted in Kenya, where the majority reported little understanding of cervical cancer (85.9%) and lack of information (77%) (Nthiga, 2014). This is also not different from a study conducted in Nigeria by Abiodun which revealed that the major reason of not having had cervical cancer screening done was 90.5% a lack of awareness about cervical cancer and screening on 90.5% identified lack of awareness as the barrier to uptake of cervical screening (Abiodun *et al.*, 2013).

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1. CONCLUSION

Cervical cancer continues to be a major public health problem in Rwanda. This study revealed that 53.4% of women were not aware of cervical cancer, which contributes to lack of cervical cancer screening practice on 100%. The findings highlighted lack of information on cervical cancer, symptoms, risk factors and preventive measures which are barriers to cervical cancer screening.

Education and communication about cervical cancer are needed to increase level of awareness about cervical cancer and to facilitate the practice of cervical cancer screening in order to reduce the mortality rate of cervical cancer.

6.2 RECOMMENDATIONS

Efforts to initiate cervical cancer awareness among women with a focus on educating women of their susceptibility to cervical cancer and making them to know that the preventives measures exist such as screening in order to detect the pre-cancerous stage which could predict the early treatment and prevention of cancer development.

To the ministry of health

A national guideline of cervical cancer prevention which include education and screening. The ministry of health have to establish a schedule of training in non-communicable diseases especially cervical cancer as a health threatening disease and national burden. Trained professionals must be on each district hospital with capacity to provide trainings districts nurses on cervical cancer screening perform cervical cancer screening as expert. A regular and permanent media coverage through television, radio and pictures regarding cancers, especially cervical cancer to create community awareness will be helpful.

To the Hospital

To have a schedule of cervical cancer education by a midwife for all women seeking an outpatient services in antenatal and family planning, women were from different health centre of Nyamata Hospital's catchment area which will facilitate the dispersion of information about cervical cancer.

To the Education institutions

Further research on awareness of cervical cancer and its screening among health care providers is also recommended; as in the present study, no respondent has cited health care providers as a source of information about cervical cancer whereas the study conducted in India, 2012 assessing knowledge, attitude and practice about cervical cancer and screening revealed an interesting level of knowledge among nurses but minimal 80% never took screening and also 87% did not recommend screening to others (Alok *et al.*, 2012).

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APPENDIXES

CONSENT FORM

RESEARCH TOPIC: AWARENESS AND PRACTICE OF CERVICAL CANCER SCREENING AMONGST WOMEN ATTENDING GYNECO-OBSTETRIC DEPARTMENT AT NYAMATA DISTRICT HOSPITAL

Principal Investigator: Uwamariya Albertine, email: uwalbine@yahoo.co.uk

Organization: University of Rwanda College of Medicine and Health Sciences, School of Nursing and Midwifery; website: www.ur.ac.rw

Supervision:

Supervisor: Mrs. Evelyne NANKUNDWA

Co-Supervisor: Ruth SEGO

Sponsor: None

PART I: INFORMATION SHEET

My names are Albertine Uwamariya. I am a student in Master's Program at the School of Nursing and Midwifery, College of Medicine and Health Sciences, University of Rwanda. I am inviting you to participate in the research entitled "Awareness and Practice of Cervical Cancer Screening amongst Women Attending Gynaeco-Obstetric Department at Nyamata District Hospital".

Your acceptance to participate in this research will help to get new insights about your awareness and practice of cervical cancer screening.

We will ask you questions in an interview which will take almost 45 minutes to complete. You have been randomly selected to participate in this research because we think your thoughts are valuable for the study and will greatly contribute to address the problem of cervical cancer.

Participation

We invite you to participate in this research. However, your participation is entirely voluntary. You may decide at any time of the research to withdraw from this research and such decision will not affect you in any way.

Procedures

We will ask you questions related to awareness and practice of screening cervical cancer. If you accept you will be asked to sign the consent form at the bottom of this form. The interview was conducted by the researcher.

Risks

There is no risk of participating in this interview. However, I may ask you to reveal some very personal and confidential information, and you may not feel uncomfortable to provide some answers. You are not obliged to answer any question that makes you feel uncomfortable. You will not be required to give reasons for this lack of comfortability.

Benefits

There will be no direct benefits to you. However, this research will help us to find more about the population's awareness and screening practice of cervical cancer.

Reimbursement

You will not be provided any incentive related to participating in the current research.

Confidentiality

The information you provide will not be shared with a third party, not involved in the research. No personal details will be shared with anyone out of the research team and collected data will be subject to strict confidentiality during and after the research process. The interview will be conducted with you in a secured room without anyone other than you and the researcher. Your name will not be collected and matched with any findings from this study. The questionnaire will rather reflect a code that represents you.

Sharing the results

Nothing that you tell us in this research will be shared under your name. However, for academic advancement, the findings from this research will be shared with your community and you, and health care providers, and may be published in a peer-reviewed journal.

Withdrawal from the research

You may stop you participation to this research at any time whenever you wish to do so. This will not affect your relatives and you in any way.

Who to contact

If you have any questions, you can ask them today or later. For more details about this research, you may contact the Chairperson of the University of Rwanda College of Medicine and Health Sciences Institutional Review Board, Professor Jean-Bosco Gahutu, at +250783340040 or email: jbgahutu@yahoo.com or jbgahutu@ur.ac.rw.

PART II: CERTIFICATE OF CONSENT

I,, [Participant’s names], have read [or it has been read to me] and understood the aforementioned details about the current research. I therefore consent voluntarily to be a participant in the research.

Print Name of Participant _____

Signature of Participant _____

Date _____ (DD/MM/YYYY)

If illiterate

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness _____ Thumb print of participant

Signature of witness _____



Date _____ (DD/MM/YYYY)

Statement by the researcher/person taking consent

I [Researcher's names] have read out the research information sheet to the participant and understand, to the best of my ability, that the participant understands the requirements and conditions of the current research.

I confirm that the participant was given an opportunity to ask questions and that her worries have been addressed efficiently to the best of my ability. I confirm that the participant has not been compelled to give consent, and that her participation was freely and voluntarily decided.

A copy of this form was given to the participant for further reference.

Print Name of Researcher/person taking the consent _____

Signature of Researcher/person taking the consent _____

Date _____ (DD/MM/YYYY)

QUESTIONNAIRE FOR RESEARCH

Questionnaire number.....

Part 1. SOCIODEMOGRAPHIC CHARACTERISTICS

1. Age (in years)

2. Level of education:

- a) No formal education
- b) Primary education
- c) Secondary education
- d) Higher education

3. Occupation:

- a) Employed by Government
- b) self-employed
- c) Housewife
- d) Other mention _____

4. Marital status:

- a) Single
- b) Married
- c) Widow
- d) Separated
- e) If ever married age at first Marriage.....

5. Parity:

- a) Nulliparous
- b) 1 to 2 children
- c) 3 to 4 children
- d) Over 4 children
- e) If beared age at the first pregnancy

Part 2: AWARENESS OF CERVICAL CANCER

6. Have you ever heard of cervical cancer?

- a) Yes (go to 7)
- b) No (go to 8)

7. What are the symptoms of cervical cancer? (Please check all that are mentioned.)

- a) Post-menopausal bleeding
- b) Post coital bleeding
- c) Inter-menstrual bleeding
- d) Offensive vaginal discharge
- e) Lower abdominal pain
- f) Wounds in the private part of a woman
- g) I don't know
- h) Other (List)

8. What are the risk factors for cervical cancer? (Please check all that are mentioned.)

- a) Infections by human papilloma virus
- b) Having multiple sexual partners
- c) Early sexual intercourse (young age in sexual intercourse)
- d) Young age at first full term pregnancy
- e) Using the family planning pills and injections, or coil
- f) Smoking cigarette
- g) Bearing many children
- h) Do not know
- i) Other (list): Starting to have sex too early

9. Can cervical cancer be prevented?

- a) 1. Yes
- b) No (go to 12)
- c) Don't know (go to 12)

10. How can a person prevent getting cervical cancer? (Please check all that are mentioned.)

- a) Avoid multiple sexual partners
- b) Avoid early sexual intercourse
- c) Abandon smoking
- d) through vaccination of HPV
- e) Through screening
- f) Do not know
- g) Other (list)

11. Can cancer of the cervix be cured?

- a) Yes
- b) No (go to 14)
- c) Don't know (go to 14)
- d) Explain.....

12. How can someone with cervical cancer be treated? (Check all that are mentioned.)

- a) Herbal remedies
- b) surgery
- c) Specific drugs given by hospital
- d) radiotherapy
- e) Do not know
- f) Other.....

13. How expensive do you think cancer of the cervix treatment is in this country? (Please check one response.)

- a) It is free of charge
- b) It is reasonably priced
- c) It is somewhat/moderately expensive
- d) It is very expensive
- e) Don't know

14. Have you ever heard of cervical cancer screening?

- a) Yes
- b) No

16. Are there screening procedures to detect cervical cancer premalignant lesions?

- a) Yes
- b) No
- c) Don't know

17. Who should be screened?

- a) Women under 35 years
- b) Women of 35 years and above
- c) Others (List).....

18. How often should one go for screening?

- a) Once a year
- b) Every three years
- c) Every 5 years
- d) Any other (.mention)

Part 3: MEANS OF INFORMATION ABOUT CERVICAL CANCER

19. Where did you first learn about cervical cancer? (Check all that are mentioned)

- a) News Media: Radio and television
- b) Brochures, posters and other printed materials
- c) Through health education/health units/hospitals
- d) Family, friends, neighbours and colleagues
- e) Religious leaders
- f) Other (specify)

20. Where did you first learn about cervical cancer screening? (Check all that are mentioned)

- a) News Media: Radio and television
- b) Brochures, posters and other printed materials
- c) Through health education/health units/hospitals
- d) Family, friends, neighbours and colleagues
- e) Religious leaders
- f) Other (specify)

Part 4. PRACTICE OF CERVICAL CANCER SCREENING

21. Have you ever screened for cervical cancer?

- a) Yes (go to 19)
- b) No (go to 22)

22. When was your latest screening test done?

- a) less than 6 months
- b) 12 months ago
- c) Less than 2 years ago
- d) 3 years and above

23. Who decides about the screening for you?

- a) Myself
- b) Healthcare provider (Doctor)
- c) My husband

24. When was the latest time you screened?

- a) within the past three years
- b) More than three years ago.
- c) Other (List).....

25. If no, why?

- a) It may be painful.
- b) I am healthy
- c) I am afraid a screening test would reveal cervical cancer

- d) It is expensive
- e) I am not informed/knowledge
- f) I don't know where the service is delivered
- g) Other (specify).....

END OF QUESTIONNAIRE

ETHICAL CLEARANCE



UNIVERSITY OF
RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 16/01/2017
Ref: CMHS/IRB/085/2017

UWAMARIYA Albertine
School of Nursing and Midwifery, CMHS, UR

Dear UWAMARIYA Albertine

RE: ETHICAL CLEARANCE

Reference is made to your application for ethical clearance for the study entitled "*Awareness And Practice Of Cervical Cancer Screening Amongst Women Attending Gyneco-Obstetric Department At Nyamata District Hospital*".

Having reviewed your protocol and found it satisfying the ethical requirements, your study is hereby granted ethical clearance. The ethical clearance is valid for one year starting from the date it is issued and shall be renewed on request. You will be required to submit the progress report and any major changes made in the proposal during the implementation stage. In addition, at the end, the IRB shall need to be given the final report of your study.

We wish you success in this important study.

for Professor Kato J. NJUNWA
Chairperson Institutional Review Board
College of Medicine and Health Sciences, UR



[Handwritten signature]
Prof. JB Gashuku
IRB Vice-Chair

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate Studies, UR

TO WHOM IT MAY CONCERN



COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

Kigali, on 30 / 01 / 2017

Ref. No: 95 / UR-CMHS/SoNM/17

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

Re: Request to collect data

Referring to the above subject, I am requesting for permission for **Albertine UWAMARIYA**, a final year student in the Masters of Science in Nursing at the University of Rwanda/College of Medicine and Health Science to collect data for his/her research dissertation entitled: **AWARENESS AND PRACTICE OF CERVICAL CANCER SCREENING AMONGST WOMEN ATTENDING GYNECO-OBSTETRIC DEPARTMENT AT NYAMATA DISTRICT HOSPITAL**

This exercise that is going to take a period of 2 months starting from 13th February 2017 to 12th April 2017 will be done at **NYAMATA DISTRICT HOSPITAL**.

We are looking forward for your usual cooperation.

Sincerely,

A handwritten signature in blue ink, appearing to be 'DM'.

Dr. Donatilla MUKAMANA, RN, PhD
Dean, School of Nursing and Midwifery
College of Medicine and Health Sciences



Email: schoolofnursingandmidwifery@ur.ac.rw, P.O.Box: 3286 Kigali-Rwanda, Website: www.ur.ac.rw

APPROVAL BY NYAMATA HOSPITAL

REPUBLIC OF RWANDA

09th February, 2017

BUGESERA DISTRICT

ADEPR

NYAMATA HOSPITAL

B.O.Box : 7112 Kigali

Tel : 0788130100

E-mail: nyamata.hospital@moh.gov.rw

Dear UWAMARIYA Albertine

RE: Approval of conducting research project

After review of your protocol for your research project entitled "**Awareness and practice of cervical cancer screening among women attending gyneco obstetric service at Nyamata District Hospital**", the Nyamata Hospital Ethics Committee has decided to give you permission to conduct your research. You will be required to ensure confidentiality of health information from patients and health professionals of the hospital, and to consult Nyamata Hospital administration in case you need to publish the findings. In addition, at the end, the Ethics Committee finally recommends you to submit a final copy of your research findings after completion of the research.

We wish you success in your research project.

Dr Samuel NDAYISHIMIYE

Chair Person of Ethics Committee



Approved by Dr Alfred RUTAGENGWA

Hospital Director

