FACTORS INFLUENCING THE UTILIZATION OF CERVICAL CANCER SCREENING SERVICES IN GESIMA DIVISION, NYAMIRA COUNTY, KENYA

BY

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DECLARATION

This research project report is my original work and has not been presented for a degree in any other university or institution of higher learning.

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DEDICATION

I dedicate this work to my dearest parents Joseph Nyachae Matoke and Joyce Gesare Joseph who have sacrificed their all to ensure that all their children acquire education to their highest possible levels.

I also dedicate this work in memory of my beloved late grandmother, Mama Alice Nyakerario Ogeto whose hunger and thirst for Education was demonstrated up to the last minute, and whose spirit of hard work and determination has inspired me to date, and who succumbed to death due to ovarian cancer and total renal failure.

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And finally to my Heavenly father, you are truly Ebenezer. Thank you.

ABSTRACT

Cancer of the cervix is a leading cause of deaths among women. It is preventable through regular screening of women at risk for abnormal changes in the cervix and treating those who have positive results. The international goal to achieve universal access to reproductive health cannot be achieved unless women are brought into the mainstream and included in policies and programs to improve their sexual and reproductive health. In Kenya, the incidence and mortality from cervical cancer remains high and many women visit health facilities with late stage diseases. The purpose of the study is to find out the factors influencing the uptake of cervical cancer screening services in Gesima Division in Nyamira County, Kenya and design the intervention to improve the utilization of cervical cancer screening services. A cross-sectional survey-based descriptive study was undertaken in Gesima Division targeting women 18 years and above. Data collection was performed by means of questionnaire, observation and interview. A total of 174 respondents were enumerated as respondents to a structured questionnaire and 3 medical officers interviewed to give qualitative data on the status of screening services in the region in regard to the objectives of the study. Gesima Division is in a rural setting where the awareness levels and knowledge on cervical cancer and cervical cancer screening services is limited. As such, the objectives of the study were to assess the factors that influence the utilization of cervical cancer screening services in Gesima Division, Nyamira County. Such factors included awareness and knowledge levels, accessibility to health facilities, and availability of qualified personnel and economic factors. Gesima Division has a total population of about 53,000. The sample size of 174 women aged 18 years and above was targeted as respondents to questionnaires administered by 5 research assistants. 3 medical/clinical officers were also interviewed to provide qualitative information. Proportionality was determined by Chi-square, while associations were carried out through logistic regression using SPSS version 16.0. The study findings showed that adequate cervical cancer screening coverage was dependent on knowledge of the benefits of cervical cancer screening and enabling environment to enhance screening. The study findings would be used for planning and designing appropriate interventions by the Ministry of Health, NGOs and other stakeholders in a view to create awareness and enhance cervical cancer screening services utilization in the region and beyond in order to avert the trend and prevalence of cervical cancer. This project report does not claim to capture the complex reality of factors influencing the utilization of cervical cancer screening services in Kenya, but highlights some key issues in a hitherto largely under-research domain.

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ABBREVIATIONS AND ACRONYMS

ACCP- Alliance for cervical cancer prevention

AIDS- acquired immune-Deficiency Syndrome

CC- Cervical cancer

CDC- Centre for disease control

DALY- Disability adjusted life years

HIV- Human immunodeficiency virus

HPV- Human Papilloma Virus

KDHS- Kenya Demographic and Health Survey

KNBS-Kenya National Bureau of statistics

LEEP- Loop electrosurgical excision procedure

MOH- Ministry of Health

NHIF- National Health Insurance Fund

PATH- Program for Appropriate Technology in Health

Pap smear- Papanicolaou's smear

PEPFAR-President's Emergency Plan for AIDS Relief

UNDP- United Nations Development Fund

VIA- Visual Inspection with Acetic Acid

WHO- World Health Organisation

WRA-women of reproductive age

CHAPTER ONE

INTRODUCTION

1.1 General introduction

Cancer is becoming a rampant health menace in human kind in the twenty first century. There are several types of cancer, broadly categorized as either genetically or that which comes as a result of unhealthy lifestyle.

Cervical cancer is the second most common cancer worldwide and the most common in developing countries. Globally, 529,409 women are diagnosed and 274,883 women die from cervical cancer every year. Developing countries represent 86% of the new cases and 88% of the deaths. 80% of the cases occur in low income or middle income countries. This condition not only affects the health and lives of the women, but also their children, families, and their communities at large. Worldwide, Eastern Africa is the region that is most affected with cervical cancer with an age standardized incidence rate and mortality rate of 25.3% and 34.5% per 100,000 women respectively (WHO, 2010). The low cervical cancer rates have been rates in developed countries have largely been attributed to high quality screening programs. However, these programs require robust health infrastructure and considerable financial and human resources. Therefore implementation of screening in developing countries is difficult (WHO, 2010).

In Kenya, cervical cancer is the most frequent cancer and the leading cause of cancer related deaths among women of reproductive age. Currently the estimated annual number of cases in Kenya is 2454 while the annual number of deaths due to cervical cancer is 1676. It is projected that by the year 2025, the number of new cervical cancer cases annually will reach 4261. Data from hospital-based registries in Kenya indicated that cancer of the cervix accounted for 70 to 80% of all cancers of the genital tract and 8 to 20% of all cancer cases for the 10 year period of 1981 to 1990. It has been reported that there are 10 to 15 new cases of cervical cancer in Nairobi each week (Kenya Cancer Registry). Cervical cancer has a crude incidence rate at 16.5 per 100,000 women and a corresponding age standardized incidence rate of 28.7 per 100,000 women (WHO, 2010). Like most developing countries, Kenya lacks the financial and human resources to implement a nationwide screening program (Gachangi et al., 2003).

Cervical cancer is defined as the AIDS-defining illness in HIV infection. The prevalence of HIV in invasive cervical cancer patients in Kenya is 15%. This is double the national average of 7%. it is also recognized that about 80% of HIV-positive clients in Kenya are not aware of their HIV status. This means that the majority of the at-risk population, an estimated 10-plus million women of reproductive age (WRA), do not benefit from the cervical cancer screening program when the comprehensive care centers (CCCs) are used as the only entry points for screenings. To reach these other women as well, it is important that other cervical cancer screening is integrated into the routine services that the majority of women are exposed to regardless of their knowledge of HIV status. These routine services are offered at maternal child health (MCH) clinics.

Despite the existence of a 2002-2006 cervical cancer prevention strategic plan, implementation of the national screening program is still low and haphazard. Cervical cancer screening occurs, but only in a few selected sites and in a disjointed projects rather than a fully fledged national level program. This explains why screening coverage is still negligible. Furthermore, there is lack of additional diagnostic and treatment options at the secondary levels of care. Additionally the link between screening and treatment has been dysfunctional. This augurs poorly especially for HIV-positive women who tend to have larger lesions and more aggressive diseases.

In lieu of this, this paper will focus on the factors responsible for the shockingly low utilization of the cervical cancer screening services.

Cervical cancer results from the uncontrolled growth of severely abnormal cells in the cervix and the opening of the uterus. It is considered a disease of early and late middle age. Isolated cases are found to occur among young women, but incidence rates are seen to rise sharply from age 35 years with approximately 87% of cases in women over the age of 35 years (Sitas, Et al., 1997). The common risk factor is sexually transmitted infection caused by Human Papilloma Virus (HPV) and it is estimated that 50 to 80 % of sexually active women are infected at least once in their life time with the virus (Laura , 1997, Christopher, et al., 2003). The other known risk factors are early onset of sexual activities, multiple sex partners, long use of oral and injectable contraceptives, immunosuppresion, smoking, family history of cervical cancer, HIV infection, etc (Blanche, 1989)

Public health program such as screening women for precancerous changes, treating and follow-up care at early stages of the disease can potentially protect women from developing cervical cancer and thus reducing the incidence, morbidity and mortality from this condition (Jacqueline, Christina, 2000). To date screening efforts have relied largely on the Papanicolaou (Pap smear) test, a cytological screening test that has long been used to detect abnormal cell changes in the cervical mucosa.

However, while the screening test has achieved tremendous success in industrialized countries through public health programs, it has failed to reach a significant proportion of women in developing countries. For example, in the United States, the incidence of cervical cancer has fallen by 75% over the last 40 years and the mortality from cervical cancer in the United Kingdom has reduced by 40% between 1979 and 1995 (Dorothy, Sasieni, et al., 2005). This success is explained as the attribution to the increased uptake of women participating in the cervical screening program as a result of increased awareness amongst women from health education and the media, reduced anxiety around a smear taken, and the final incentives to general practitioners for achieving higher coverage targets within their populations (Sasieni, et al., 2005, Barton-Smith, 1999). On the contrary, a nationwide screen initiative in Mexico failed to reduce mortality rate from cervical cancer because of low coverage to the target population (Lazcano-Ponze, et al., 1999). In a recent report it was shown that only 5% women in low income countries have undergone a Pap smear test (Population reference bureau 1992).

The National government of Kenya through the ministry of health has developed a policy (national guidelines for cervical cancer screening). Its goal is to reduce the incidence, prevalence, morbidity and mortality from cervical cancer and to improve the quality of life of cancer patients in accordance with the Kenya health policy framework, National Reproductive Policy and the National Reproductive Health Strategy 2007, (National Cervical Cancer Prevention Strategic Plan 2002-226).

Despite the existence of previous National Cervical Cancer Prevention Strategic Plan (2002-2006), implementation of the national screening program is still low and haphazard. Cervical cancer screening occurs, but only in a few selected sites and in disjointed projects rather than a fully fledged-national level program. This explains why screening services are still negligible. Furthermore, there is lack of additional diagnostic and treatment options at the

secondary level of care. Additionally the link between screening and treatment has been dysfunctional. This augurs poorly especially for HIV positive women who tend to have larger lesions and more aggressive diseases. The other main challenge to increasing access to and improving the quality of cervical cancer screening services include; lack of updated National guidelines on cervical cancer prevention and control, low level of community awareness on the importance of screening coupled with low knowledge of common symptoms of cervical cancer. Inadequate skills among service providers, inadequate equipment and supplies (despite the fact that these are inexpensive for visual screening methods), lack of treatment facilities when there is pre-cancer or cancer diagnosis, inadequate monitoring and evaluation-especially data collection and management of existing programs and low prioritization of cervical cancer among policy makers and opinion leaders also plays a role in derailing cervical cancer screening programs. The HPV vaccine that could be used in primary prevention is also not provided as part of the national vaccine immunization program.

Kenya only has a cancer registry that collects data for hospitals in Nairobi including the National referral hospitals (NCR, 2006). It is assumed that the patients at the national hospital represent the burden of cancer in the country. However, many women in rural areas with cancer have no access to treatment at the national hospital due to distance and cost hence the statistics in the registry represent only a proportion of the actual figure. Furthermore, this data is updated irregularly; the latest data published by the registry was for the year 2000-2002 (Musibi, 2008). This underreporting subsequently leads to poor prioritization and planning of cervical cancer prevention programs.

1.2 Statement of the Problem

Cervical cancer is a preventable disease yet it is the leading cause of cancer related mortality and morbidity among women in Kenya with 2625 cases and 2111 deaths reported annually. Despite this large disease burden, the platform for cervical cancer screening and prevention is largely underdeveloped in Kenya. To start with, there is currently no clear policy that offers guidelines for cancer screening and prevention among women including those who are HIV infected (Gichangi et al., 2003). Furthermore a national cervical cancer screening program does not exist. Screening is opportunistic and offered in uncoordinated fashion in many health facilities. A situation analysis of cervical cancer screening and diagnostic services in East Africa showed that most screening in Kenya is carried out in family planning clinics.

This is ineffective as majority of women attending family planning clinics in Kenya are below 25 years of age and therefore considered low risk for cervical cancer (Chirenje et al., 2001). According to WHO (2010), cervical cancer cases and deaths are expected to rise by between 55% and 36% respectively by the year 2025, if no intervention is carried out.

However, these figures are most likely an underestimate as there is no national cancer registry in Kenya hence most cases and deaths are not reported (Musibi, 2008). Cervical cancer is more prevalent in poor communities who do not have access to screening services, this distribution is inequitable. This is attributed to the fact that rural women are more impoverished and less educated (KDHS, 2003), hence are likely to lack the financial means to seek screening services and to be unaware of cervical cancer and methods of preventing it, (Gatune, 2005).

Cervical cancer screening is only done by a few donor-supported HIV programs such as the United States Government's Emergency Program for Aids Relief (PEPFAR). These programs are only present in selected districts and even in these districts, there coverage is limited and they only screen women enrolled in their programs. As a result, many women do not know of their increase risk of cervical cancer and do not have adequate access to screening services.

Screening which can lead to early detection of the onset of cervical cancer is more cost effective than treatment. A World Bank study report showed that screening and treatment for precancerous lesions is more cost effective than treatment or palliative care of cervical cancer. In this study, screening was estimated to cost US$ 100 per DALY compared to treatment and palliation which was estimated at US$ 2600 per DALY (Jamison et al, 1993)

Organized Pap smear test screening strategies have been responsible for significantly reducing the cervical cancer rates in developed countries. However, Kenya, and in particular Rigoma Division being low income area lacks the necessary financial and human resources to establish similar programs. With this low cost effective cervical cancer prevention strategies are urgently needed. Despite the magnitude of the problem in Kenya and the fact that it is easily preventable, the cervical cancer screening coverage in Kenya for all women 18 to 69 years is only 3.2%.

1.3 Purpose of the Study

The purpose of the study was to investigate the factors that influence the utilization of cervical cancer screening services and make recommendations to enhance its utilization in Gesima Division, Nyamira County.

1.4 Specific Objective

The specific objectives of the study were:

i. To find out how human resource capacity influences the utilization of cervical cancer screening services in Gesima Division, Nyamira County

ii. To investigate the influence of socio-cultural factors on the utilization of cervical cancer screening services in Gesima Division, Nyamira County

iii. To establish the influence of health system factors on the utilization of cervical cancer screening services in Gesima Division, Nyamira County

iv. To examine how economic factors influences the utilization of cervical cancer screening services in Gesima Division in Nyamira County

1.5 Research Questions

1. How does human resource capacity influence the utilization of cervical cancer screening services in Gesima Division, Nyamira County?
2. How do the socio-cultural factors influence the utilization of cervical cancer screening services in Gesima Division, Nyamira County?
3. How do health system factors influence the utilization of cervical cancer screening services in Gesima Division, Nyamira County?
4. How do economic factors influence the utilization of cervical cancer screening services in Gesima Division, Nyamira County?

1.6 Justification and Significance of the Study

In general, there is limited data on the screening programs; patterns and distribution of cervical cancer in Kenya as little research and reporting have been done. The overall cervical cancer screening coverage is unacceptably low in Kenya. It is estimated that only 3.2% of all eligible women aged 18-69 years are screened every 3 years. The screening coverage of

urban women is higher than that of rural women (4% vs. 2.6%) (WHO, 2010). As cervical cancer is more prevalent in poor countries which do not have access to screening services, this distribution is inequitable. This is attributed to the fact that rural women are more impoverished and less educated (KDHS, 2003), hence are likely to lack the financial means to seek screening services and to be unaware of cervical cancer and methods of preventing it (Gatune, 2005). Organized cervical cancer screening services and strategies have been responsible for significantly reducing the cervical cancer rates in developed countries. However, Kenya being a low income country lacks the necessary financial and human resources to establish similar programs. With this claim, low cost and effective cervical cancer prevention strategies are urgently needed, and hence this study in the rural Gesima Division.

1.7 Limitations of the Study

There was language barrier since the research was done in the rural villages and the research tools ware written in English language but the researcher and his assistants come from the same area and thus adequately interpreted the questions to the respondents. It was difficult to analyze the current state of cervical cancer screening in Kenya and particularly Gesima Division as data on cervical cancer screening programs is limited a limitation difficult to handle but the researcher reviewed the available secondary data in the regional health facilities.

Also, there was a limitation of time and respondents' attention since most of them were domestic workers and thus interrupting their work time in their work places. The researcher had to meet them at their work places and request for their time and promise to be as fast as possible in order to save their time.

Another limitation to the study was the perception the rural women would develop upon being asked questions touching on their sexuality which is considered an omen in the region. The researcher followed research ethics and explained clearly the intention of the study to enable them develop confidence to give correct information.

1.8 Delimitations of the Study

The study was carried out in the rural villages of Gesima Division, Nyamira County which comprises of entirely the Kisii community with relatively medium literacy level and thus little language barrier and if any, interpretation was paramount and necessary.

Transport and communication network was also relatively good since the rain season had ended. Data collection was carried out during the day before rains to reduce the impact of bad weather. The involvement of the local authorities reduced suspicion and acceptance by the local community. The researcher used the available resources and time wisely to achieve the set goal.

1.9 Research Assumptions

i. The research was carried out with the expectation that all the respondents, both general and the key informants would cooperate with the researchers...

ii. The researcher also assumed that the respondents gave truthful and precise information upon which objective conclusions were be made.

iii. The researcher also hoped that the findings in the study sample would be representative and reflect the actual situation of the entire population.

1.10 Definitions of Significant Terms

Biopsy- the process of removing tissue samples for diagnostic purposes

Carcinogenesis/Oncogenesis- the process of altering normal cells to cancer cells

Cervix- the lower part or opening of the uterus (womb)

Cervical pre-cancers- abnormal cervical lesions that have potential to progress to cervical cancer

Cryotherapy- treatment of cells under extremely low temperatures

Cytology- a method of examining cells using a microscope

Economic factors- individual economic capacity and national economic capacity

Health system factors- availability of health facilities, accessibility to health facilities, and quality of health services

Histology/Histopathology- the examination of tissue under the microscope

Human resource capacity- the number of health workers, their qualification and their ability to screen and treat cervical cancer

Socio-cultural factors- Knowledge, cultural beliefs and myths and male support in cervical cancer screening

1.11 Summary of the chapter

This chapter describes the background of the factors influencing the utilization of cervical cancer screening services in Gesima Division, Nyamira County and the importance of such study to the general population with the aim of proposing relevant recommendations to the concerned parties to effect workable interventions to enhance the utilization of the screening services which will seek to reduce the prevalence of the said cancer, since it is preventable and treatable at early stages. It also covers the objectives of the study, scope, delimitations and limitations of the study and means of tackling such limitations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction of literature review

The growing number of cases of cervical cancer around the world has been one of the most hotly debated topics on the international arena over the past few years. There has been rapid increase of cervical cancer cases nationally and internationally. Notably, cervical cancer has generated significant international debate and concerns to the effect that it has led to the increase of morbidity and mortality. Research has and continues to be undertaken on the subject to expanded information and literature on the subject. The literature will be discussed under the following headings.

2.2 Human resource capacity

Though there has been an increase of health workers in Kenya, Kenya still has a critical shortage of health workers. There were 204 health workers in 2009 compared to 169 health workers per 100,000 populations in 2007. This is short of the WHO minimum recommendation of 228 health workers per 100,000 populations. There were 18 doctors and 124 nurses per 100,000 populations in 2007 (MOH, 2009).

Shockingly, health workers are inequitably distributed. Many are concentrated in urban areas leaving rural hard to reach areas like Rigoma Division understaffed. Between the years 2005-2007, the annual attrition rate from the ministry of health was 4.5% with the main reason of attrition being retirement of resignation (MOH, 2009).

The human resource required in the screening and treatment of cervical cancer are the oncologists and support staff. Lack of adequate staff available to screen and treat women inhibits timely screening, diagnosis and treatment of pre-cancers and early stage cervical cancer (Denny et al, 2006). In a study in rural Kenya, women reported that they did not go for Pap smear test because the health workers sent them away when clinics were busy (Gatune, 2005).

Shortage of health staff hinders effective screening and treatment of cervical cancer. A study in Kenya showed that a woman's chance of being screened decreased by 41% when they

heard that clinics were too busy and health staff were strained (ACCP, 2004). There were only 14 cancer specialists in Kenya. Of these specialists, only two were gynecological oncologists (Musibi, 2008). In the year 2001, there were no cytology technicians or pathologists in any of the District hospitals (Chirenge et al., 2001). Furthermore, cancer training for health workers is inadequate. Duration of cancer training for medical students is short and done in outpatient clinics. Continuous medical education on cancer is carried out mainly in Nairobi (Musibi, 2008). This means that health workers especially in rural areas lack information concerning cervical cancer screening and treatment and hence the study.

2.3 Socio-cultural factors

Socio-cultural factors entail knowledge concerning cervical cancer, cultural beliefs and myths and male support in the utilization of cervical cancer screening services. In Kenya, women (especially rural women) with low or no education are more likely to be married early, be in polygamous marriages and have high parity (KDHS, 2003) therefore putting them at high risk for cervical cancer. Poor education is associated with low screening attendance in Kenya (ACCP, 2004). About 30% of Kenyan women are illiterate (UNDP, 2009), a factor that contributes to the high cervical cancer rates in the country. A study in rural Kenya of 160 women showed that only 40% of these women had heard about cervical cancer and even though they had heard about it, they could not explain its impact or importance (Gatune, 2005). Another study at the national referral hospital in Nairobi revealed that 29% of women with cervical cancer were illiterate and only 51% of women interviewed knew about cervical cancer. Furthermore, only 32% were aware of the Pap smear test (Gachangi et al., 2003). This could be attributed to the fact that they lack knowledge on methods of preventing cervical cancer (Gatune, 2005).

Misconceptions that the screening test was actually a HIV test, the fear of cervical cancer diagnosis, the fear of the screening procedure and the embarrassment associated with pelvic examination have been cited as reasons why Kenyan women have avoided going for cervical cancer screening (PATH, 2004, Gatune, 2005). Also some Kenyan women reported that they would appreciate it if their male partners supported them in seeking screening services (ACCP, 2004). In many cultures, women tend to be subservient to men and lack authority to make decisions concerning their health (Denny et al., 2006)

2.4 Health system factors

The health sector is plagued by inequalities. For example, while 70% of urban dwellers have access to health facilities within 4 km, only 30% of the rural population has a similar access (Ngigi A., 2008). About 44% of patients in Kenya do not seek health care services due to insufficient funds (MOMS, 2008). In addition, women's hospitalization costs are more than twice that of men yet women are less likely to be insured than men (Wamai, 2009).

Kenya suffers lack of adequate screening, diagnostic and treatment facilities. Laboratories are also inadequate in number and poorly equipped (ACCP, 2004). In 2001, only 56% of government health facilities had basic equipment for cervical cancer screening and reagent shortages for performing screening tests like Pap smears were frequent. Furthermore, outpatient treatment options such as cryotherapy and LEEP were unavailable in most districts and provincial hospitals surveyed.

In many health facilities in Kenya, it takes 6-8 weeks to get cytology results after initial screening (Chirenge et al., 2001) and histopatology specimens take months to be reported. Consequently, there are often delays in definitive diagnosis and treatment (Musibi, 2008). Additionally, poor handling of women by health workers is a hindrance to screening. Women studied in a rural town in Kenya cited insensitive health care givers as a reason they shunned being screened (Gatune, 2005).

The quality of health services particularly in the public sector is often low due to insufficient funding, lack of equipments, poor supplies and staff. Furthermore, regulatory standards meant to ensure high quality are poorly developed.

2.5 Economic factors

The health sector in Kenya is underdeveloped. For example, in the fiscal year 2007/2008, the total expenditure on health was 7.3%of the total government expenditure (MOMS, 2008). This is well short of the 15% expectation as outlined in the Abuja declaration.

The major source of health care financing includes the government, households and donors. For example, in the year 2001/2002 health expenditure by major sources included, government (29.6%), out of pocket/user fees (53.1%), donors (16.3%), private for-profit (2.35 %) and NGOs (0.6%) (Wamai, 2009).

A Social National Health Insurance Fund (NHIF) is a place but it has low population coverage of only 25% and it neither covers nor caters for the poor and unemployed (MOMS, 2008) like the rural women in Rigoma Division, Nyamira County. This has led to high out of pocket spending and placed financial burdens on Kenyans. It is estimated that 88% of the people with insurance are covered by NHIF, the rest are covered by private insurers (Wamai, 2009).

To improve coordination among key health sector, a Health Wide Approach (SWAP) is in place. However, commitment to its obligation by stakeholders including governments is sub-optimal. Parallel financing is still present and only some funds are directed towards the agreed priority areas (MOMS, 2008)

Poverty hinders women from seeking good care. For instance, many Kenyan women delay seeking diagnosis and treatment due to the travel and costs they incur. Furthermore, the opportunistic costs of forfeiting work and income even for a day prevents them from going to health facilities (Goldie et al., 2005, Gatune, 2005). Also women with low socio-economic status are more likely to have unprotected sex and multiple sex partners (Akwara et al., 2003) hence exposing them to HPV and stay for long before going for screening because of financial constrains.

2.6 Conceptual framework

This conceptual framework (figure 1 below) explains the relationship between dependent variable, i.e., utilization of cervical cancer screening services and the independent variables, i.e., factors influencing the utilization of cervical cancer screening services test in Gesima Division in Nyamira County.

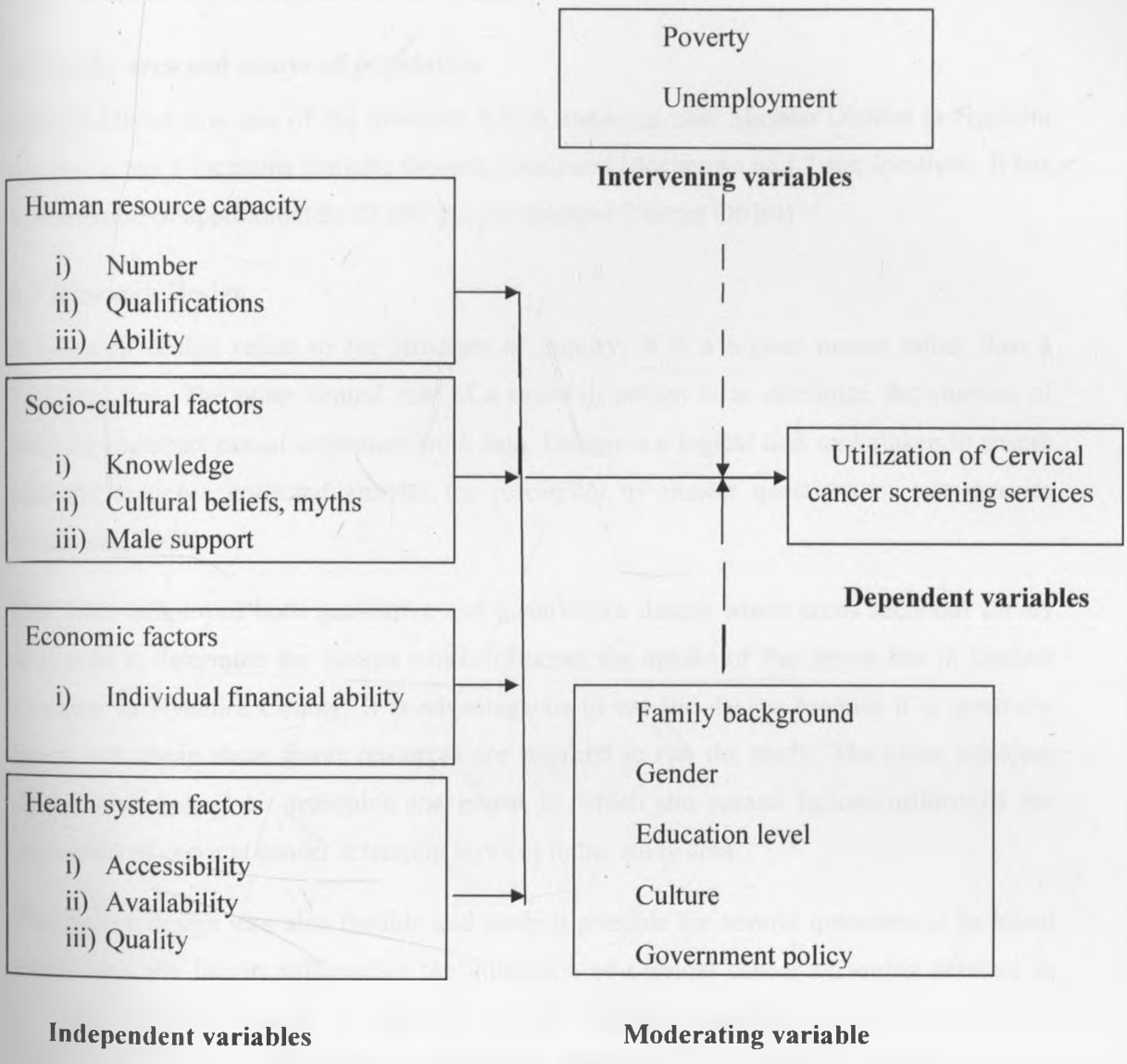

Fig. 1. Conceptual framework

CHAPTER THREE

METHODOLOGY

3.1 Introduction of the chapter

This chapter presents the methods and techniques that the researcher employed in the study. In particular, the chapter describes the research design, study area, sampling size and sampling techniques as well as the data collection tools and methods. Data analysis and tools of presentation are also examined in the chapter.

3.2 Study area and source of population

Gesima Division is one of the divisions which make the new Masaba District in Nyamira county. It has 3 locations namely; Gesima, Esani and Mochenwa and 7 sub locations. It has a population of approximately 53,000 people (Masaba District Office)

3.3 Research Design

A research design refers to the structure of inquiry. It is a logical matter rather than a logistical one. The other central role of a research design is to minimize the chances of drawing incorrect casual inferences from data. Design is a logical task undertaken to ensure that the evidence collected enables the researcher to answer questions or test theories (Niemann, 2004).

The study employed both qualitative and quantitative design where cross sectional survey was used to determine the factors which influence the uptake of Pap smear test in Gesima Division in Nyamira County. It is advantageous to use the design because it is generally quick and cheap since fewer resources are required to run the study. The cross sectional design also helped to determine the extent to which the named factors influenced the utilization of cervical cancer screening services in the study area.

The survey design was also flexible and made it possible for several questions to be asked concerning the factors influencing the utilization of cervical cancer screening services in Gesima Division. Further to that, the survey made it possible for the researcher to appropriately describe the people's knowledge, attitudes and perceptions of cervical cancer and screening services.

3.4 Target Population

The target population is that population to which the researcher wants to generalize the results of the study (Mugenda and Mugenda, 1999). The targeted population was women of 18 years and above who had lived in the division for the past twelve or more months; and who are women and at risk of developing cervical cancer. This population constitutes persons of various gender, religious, educational and occupational statuses and backgrounds. The medical officers who ware in direct contact with the women at risk on a daily basis were enlisted as key informants. The study targeted only those who voluntarily consented to participate in the study.

3.5 Sample Size and Sampling Techniques

It included female of 18 years and above either married or unmarried in the study area. The sample size was calculated using Fischer et al., (1998) formulae as below;

$$n = \frac{z^2 pq}{d^2}$$

Where:

z =standard normal deviate set at 1.96 z-score corresponding to 95% confidence level

p= will be set at 0.13 because the prevalence of cervical cancer in Kenya is 13%

q =1-p

=1-0.127

=0.863

d=the chance this study was willing to take in not capturing the population parameters in the study estimates .It's also called the alpha value. This value at 95% confidence level is given as 0.05.

Therefore $n = \frac{1.96^2 \times 0.127 \times 0.863}{0.05^2}$

=173.79, rounded off upwards to 174

The total number of respondents was 174 as calculated above. A total of 58 respondents were randomly selected for interview from the 3 locations of the entire Division. Clinical and medical officers drawn from the 7 public health facilities in the Division were interviewed as key informants as per the interview schedule provided in the appendices. A combination of purposive, snowball and random sampling techniques was used in the study. Purposive sampling techniques allowed the researcher to identify potential respondents with respect to the objectives of the study (Mugenda and Mugenda, 1999). The Division has 3 locations and 7 sub locations but because there is no satisfactory sampling frame for the whole population, it was advantageous to divide the population into area groups here known as locations and since the population density was almost the same and sample are the same, equal samples was drawn from each sub-location. To simplify the field work of the survey, the 7 sub-locations were used as clusters which were further clustered into villages. This method was appropriate since clusters usually contained near equal number of the respondents. Women of 18 years and above were sampled randomly in every sub-location by counting every tenth home. Only one member as per the sampling frame below i.e. was served with the questionnaire so as to enable the researcher to cover a bigger area of the study. After identifying people who met the inclusion criteria, the researcher employed snowball method on the respondents who proved elusive.

Table 3.1: administrative areas showing sampling frame

Division	Locations	Sub-locations	Sample size	Sampling frame	Age group of respondents	Frequency	Percent
Gesima	Esani	Sungututa	25		18-25	63	36.2
		Nyatieno	25		26-30	39	22.4
	Gesima	Gesima	25		31-35	31	17.8
		Nyakongo	25		36-40	30	17.2
		Riamoni	25		46 and above	11	6.3
	Mochenwa	Karatina	25		Total	174	100.0
		Nyabiosi	24				

3.6 Data Collection Methods

Basically the research utilized three types of data collection methods. These included the questionnaires, interviews and observation. Structured interview schedules with both closed and open ended questions were used to extract data from the selected 174 respondents that represented the entire population (see appendices). The structured interview schedules provided quantitative data that was objective and reliable. The principle researcher coordinated and ensured the interview schedule was properly filled. The research assistants were trained beforehand on how to carry out interviews effectively. Each adult woman was interviewed separately so as to enable independent answers to the questions. This was because of the larger number of standardized responses the researcher wanted to compare. Respondents were made to feel free and confident to express themselves and the researcher and the assistants enlisted the help of interpreters who assisted the respondents who understood neither English nor Kiswahili. Similar help was also given to the respondents who neither read nor wrote.

Interview questions with both open and closed ended questions (see appendix 2) were administered to the key informants who included the ministry officers and medical officers. This method was useful in collecting personal information, attitudes, perceptions and beliefs. The researcher established rapport with the respondents, to enable them give frank responses on issues that ware personal or sensitive. The observation guide to be used was simpled and non-participant. This was necessary as the researcher focused on the predetermined aspects of behavior. For example, gathering information about the lifestyle of the people in their natural habit as they go about their ordinary activities (Herman, 2008).

3.7 Data Collection Procedure

This research relied on both secondary and primary data. The use of primary data enabled the researcher to get detailed and first hand information that included qualitative facts (Mutuai, 2006). Primary data was collected through observation, interviews and questionnaires. The researcher personally visited the research site and collected the said data. Additionally, the researcher relied on information from books, journals, and biographies which formed part of secondary data.

3.7.1 Data Collection questionnaires

Data was collected using questionnaires which comprised a set of structured questions directed at the respondents. Both open ended and closed ended questionnaires were used. Open ended questionnaires allowed the respondents to delve deeper into the subject while closed ended questionnaires comprising a yes and a no answer (Collins, 1998). This instrument was designed and used to obtain as much information as possible about the respondents in regard to drug abuse and domestic violence. The questionnaires were administered by research assistants who were recruited from the area of the study and trained on the basic skills necessary for conducting interviews. The responses were recorded in the interview guide sheet before venturing into the actual research. Also, a pilot survey was carried out whereby some of the questions were recorded to improve clarity while others were changed or replaced altogether.

3.8 Validity and Reliability

Validity tests the data collection tools and methods and ensures they are measuring the right concept and not something else. Reliability indicates the stability and consistency with which the data collection instrument measures the concept

Validity is the accuracy and meaningfulness of inference, which are based on research results. It is the degree to which results obtained from the analysis of data actually represent the phenomena under study (Mugenda and Mugenda 1999). The information on the research instrument was cross checked, inspected and scrutinized to ensure accuracy, relevance, completeness, consistency and uniformity of the collected data. Pilot testing was done in the same constituency in areas where data for the actual study was not to be collected and adequate adjustments implemented to enhance validity.

Pre-testing of the research instruments was done before the actual data collection to enhance the validity and reliability of the responses. This was done using a purposive sample of 25 respondents in three of the sub locations which were not enumerated in the real study. This included people who had similar characteristics to those in the study area. Vague questions were rephrased to convey the same meaning to all the participants. Some comments made by the respondents were also incorporated into the final questionnaire.

Reliability is a measure of the degree to which the research instrument yields results or data after repeated trials (Mugenda and Mugenda 1999). The conditions under which the measurements took place were standardized by minimizing external variations such as fatigue and boredom. Broadening the sample of respondents improved the aspect of equivalence. Reliability was tested after a pilot study that was carried on an independent group of people who would not take part in the study. Reliability was determined by using split half method. A measure of internal consistence was used to establish whether the items used in the instrument were reliable.

3.9 Data Analysis

Once the completed questionnaires are returned, data was edited for completeness and coded using the Statistical Package for Social Sciences (SPSS) software version 11.5. All variables of the study including age, educational levels, gender, degree of religiosity, marital status, and the factors influencing the utilization of cervical cancer screening services were subjected to descriptive method where data was quantitatively and qualitatively analyzed. Such statistics as the mean, median and mode were organized and summarized in a way that could be meaningfully understood and communicated. After the analysis, frequencies, bar graphs, distribution tables and pie charts were used to describe, organize and summarize the data. The mode will be used to measure the frequency of the variables and this will help predict the actual scale value. In addition, the association between dependent and independent variables were used to determine using Odd's ratio (O.R.) with 95% confidence interval. Logistical regression analysis was performed to control for potential confounders.

3.10 Ethical Considerations

Permission to carry out the study was sought from the relevant authorities and institutions including the Office of the president, Ministry of Science and Technology and the University of Nairobi Graduate School. The District Commission of Divisional Officer of Gesima Division and all the local leaders were informed of the intended study and their permission and co-operation was requested. Confidentiality of information and anonymity in data recoding was assured. Participants were informed of the nature of the study before commencing the interviews. Only people who voluntarily consented to take part in the study were interviewed.

3.11 Summary of the chapter

This chapter highlights the methodology of the study. It explains the profile of the study area and source of the sample, the design for the study, data collection methods and means of ensuring validity and reliability are enhanced. It also explains the data analysis process for the study and ethical consideration for the study.

3.12 Operationalization of variables

Table 2: Operationalization of variables

S/N	Objectives	variables	Indicators	Measurements	Scale	Data collection method	Data analysis
1.	To find out the influence of human resource capacity on the utilization of cervical cancer screening services in Rigoma Division	Deployment of more qualified health workers dealing with cervical cancer	Number of qualified health workers to deal with cervical cancer screening and treatment	Increased in number of health workers and their qualifications	ratio	survey	Measure of central tendency and percentages
2.	To investigate the influence of socio-cultural factors on the utilization	Awareness and cultural change	. Knowledge, cultural beliefs and myths, male	Increased awareness, changed cultural beliefs and myths about cervical cancer	ratio	survey	Measure of central tendency and percentages

	of cervical cancer screening services in Rigoma Division.		support	screening and increased male support.			
3.	To establish the influence of economic factors on the utilization of cervical cancer screening services in Rigoma Division.	Economic empowerment of women and reduction of cervical screening costs	Budgetary allocation cost of screening for cervical cancer screening and treatment.	Increased budgetary allocation for cervical cancer screening and reduction of the cost of screening	ratio	survey	Measure of central tendency and percentages
4.	To examine the influence of health system factors on the on the utilization of cervical cancer screening services in	Organized cervical cancer screening programs, quality of health care, availability of health facilities	Cervical cancer screening programs, health facilities, accessibility of health facilities	Increased cervical cancer screening programs, increased availability of screening services and increased accessibility of health facilities	ratio	survey	Measure of central tendency and percentages

	Rigoma Division.	and accessibility of the health facilities					
5.	To suggest recommendations for enhancing the utilization of cervical cancer screening services in Rigoma Division	Policies, budgeting, human resource, health infrastructure.	Policy implementation level, local authority empowerment, etc.	Increased budgetary allocation for the management of screening services, policies governing screening utilization	ratio	survey	Measure of central tendency and percentages

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION OF FINDINGS AND INTERPRETATION

4.1 Introduction of the chapter

This chapter presents the findings of the data collected from the sampled women in Gesima Division, Nyamira County, Kenya on factors influencing the utilization of cervical cancer screening services. Out of 174 respondents that the study targeted there were 174 respondents. This is 100% of the target group. The data was interpreted according to the research questions. The analysis was done through descriptive statistics and findings of the study were presented in form of frequency tables, percentage charts and pie-charts. The discussion of the outcomes is based on the outputs from Statistical Package for Social Sciences (SPSS)

4.2 Results and Discussion

This section provides results and discussions of the findings and data analysis of the study. The discussion is linked to the questions of the study and research objectives in accessing the factors influencing the utilization of cervical cancer screening services in Gesima Division, Nyamira County.

4.2 Response rate

Out of 174 respondent who were required to respond to household questionnaires, 174 responded adequately due to the self administration of the questionnaires which ensured 100% response rat. This translates to 100% response rate. The return rate is statistically representative, therefore enhancing generalization of the research results. Also, there was effective interview with the medical officers and ministry officers as they were interested in the area of study and the research output.

4.3 Socio-demographic data

It includes the age of respondents, their marital status, their occupation and level of education which have a direct effect on cervical cancer screening utilization.

4.3.1 Age of the respondents

The age of the respondents may determine their ability to seek cervical cancer screening services depending on their experience, knowledge and exposure to information. I am of the

opinion that if this should include women of reproductive age and who are mature enough and entitled to give an informed consent as this research will touch their reproductive health and private life.

Table 4.1

Age in years	Frequency	Percent	Valid Percent	Cumulative Percent
18-25	63	36.2	36.2	36.2
26-30	39	22.4	22.4	58.6
31-35	31	17.8	17.8	76.4
36-40	30	17.2	17.2	93.7
46 and above	11	6.3	6.3	100
Total	174	100.0	100.0	

Table 4.1 above reveals that, 36% of the respondents were over the age of 18-25, 24% of age between 26-30,18% of age 31-35, 17% and 6% of ages between 36-40 and above 40 respectively.

4.3.2 Level of education of the respondents

Figure 4.2: level of education of respondents

Reason	Frequency	Percent	Valid Percent	Cumulative Percent
None	6	3.4	3.4	3.4
primary	77	44.3	44.3	47.7
secondary	40	23.0	23.0	70.7
tertiary	51	29.3	29.3	100
Total	174	100.0	100.0	

The graph above shows that out of the 174 respondents sampled, less than 4% did not have any formal education while 14% had achieved only primary education. Secondary and tertiary education accounted for 23% and 30% respectively.

4.3.3 Marital status of the respondents

Figure 4.3: table showing the marital status of the respondents

Marital status	Frequency	Percent	Valid Percent	Cumulative Percent
yes	130	74.7	74.7	74.
No	44	25.3	25.3	100
Total	174	100	100	

Of the respondents interviewed, 130 (74.7%) were married and 44 (25.3%) were not married.

4.4 Human resource capacity

It includes the number of health workers in the division who are qualified to handle health matters of the population. In the whole of Gesima Division with 8 health facilities, there are 21 health care providers of whom 4 are trained to mobilize, screen and disseminate information on cervical cancer alongside other duties.

On top of that, the researcher's keen interest was on those particularly trained on cervical cancer screening where out of the 8 health facilities in the region, namely; Gesima, Esani, Machuririati, Mochenwa, Mosobeti, Nyamakoroto, Nyaiguta and Riakworo, only 4 nurses have been trained in the past 6 months by APHIA Plus, an international non-governmental organization (APHIA Plus), which provides technical support, capacity building, and supplies of equipments for cervical cancer screening in the region deal with cervical cancer screening. (MOH, Masaba District).

Table 4.4: number of health workers in the Gesima division

Title	Number
Medical officers	1
Clinical officers	5
Pharmaceutical technologists	3
Nurses	10
total	21

Source, MOH, Masaba District

4.5 Socio-cultural factors

They included the knowledge of the respondents, their awareness on cervical cancer, awareness on cervical cancer screening services and ability of screening to prevent the spread of cervical cancer. It also included the male support in efforts to seek cervical cancer screening services which have a direct effect on the utilization of the available screening services.

4.5.1 Knowledge on cervical cancer

Table 4.5: Knowledge on cervical cancer

	Frequency	Percent	Valid Percent	Cumulative Percent
yes	95	56.6	56.6	56.6
No	79	45.4	45.4	100
Total	174	100	100	

A larger proportion of the sampled respondents (55%) were aware of cervical cancer and the remaining proportion (45%) claimed that they do not know what cervical cancer is.

4.5.2 Knowledge on cervical cancer screening

Table 4.6: knowledge on cervical cancer screening by respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
yes	62	37	37	3
No	112	63	63	100
Total	174	100	100	

When asked if they were aware of the existence of cervical cancer screening, 62 respondents who accounted for 37% said they were aware and 112 respondents who accounted for 63% said they were not aware.

4.5.3 Knowledge on the ability of screening to prevent cervical cancer

Table 4.7: frequency table showing respondents beliefs on the ability of screening to prevent cervical cancer

Ability of screening to prevent cervical cancer	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	43	24.7	24.7	24.7
No	3	1.7	1.7	26.4
Don't know	128	73.6	73.6	100
Total	174	100	100.0	

There is a knowledge gap on whether cervical cancer screening can help prevent cervical cancer. When asked if screening can prevent cervical cancer, the largest proportion (72%) said they did not know. It is only 22% who said that screening can prevent cervical cancer.

4.5.4 Myths and beliefs about cervical cancer screening

The largest proportion of women which accounted for about 36% did not seek screening due to shyness and fear of the method that could be used to do the screening. Fear that they may be tested for HIV against their will followed and fear on how to request for the test accounted for 20% and 6% respectively. This is shown in table 4.8 below.

Table 4.8: reason for not going for screening based on their myths and beliefs

Reason	Frequency	Percent	Valid Percent	Cumulative Percent
fear that you may be tested for HIV	34	19.5	27.2	27.2
fear on how to request for the test	11	6.3	8.8	36.0
Shyness and fear of the methods of screening	62	35.6	49.6	85.6
Lack of knowledge of cervical cancer	18	10.3	14.4	100
Total	174	100.0	100.0	

Also, when asked how much they think cervical cancer screening costs, the largest proportion which accounted for 67% claimed they do not know. About 15% said it costs between Ksh 1000 and Ksh 2000. It's the smallest proportion which said that it costs more than Ksh 5000 as shown in the table 7 below

Table 4.9: The amount respondents think cervical cancer screening costs

Amount in Ksh	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 500	13	7.5	7.5	7.5
Between 1000-2000	26	14.9	14.9	22.4
Between 2000-5000	12	6.9	6.9	29.3
Above 5000	6	3.4	3.4	32.8
Don't know	117	67.2	67.2	100
Total	174	100.0	100.0	

4.5.5 Male support in the utilization of cervical cancer screening services

Response if their husbands have ever talked to them about cervical cancer and encouraged them to seek screening

Table 4.10: male support in cervical cancer screening

Husband support	Frequency	Percent	Valid Percent	Cumulative Percent
yes	13	7.6	9.6	9.6
No	123	90.4	90.4	100
Total	136	98	100	

Of those who are married, it is only about 7% who have ever been told about the importance of cervical cancer screening by their husbands. Close to 90% of the sampled population has never discussed cervical cancer with their husbands.

4.6 Health system factors

They include accessibility to health facility and screening services, availability of the health facilities and screening services and the quality of care and screening in the health facilities.

4.6.1 Accessibility of health facility

Table 4.11: cost of access the nearest preferable health facility

Amount of fare in Ksh	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 100	31	17.8	26.1	26.1
Between 100-200	62	35.6	52.1	78.2
Between 200-500	26	14.9	21.8	100
Total	119	68.4	100.0	

Most of the respondents claimed that the health facilities are far from their reach. In terms or fare they pay to access them, the largest proportion of 36% claimed that they pay a total of between Ksh. 100 and Ksh. 200 to reach their preferred nearest health facility. About 18% said they pay less than Ksh. 100 and 26% claimed they pay between Ksh. 200 and Ksh. 500.

4.6.2 Availability of screening services

Table 4.12: availability of cervical cancer screening services in health facilities

Husband support	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	13	100	100	9.68
No	0	00.0	00.0	100
Total	13	100		

In terms of the availability of the cervical screening services, all those who went purposely to be screened, were screened, a sign that the screening services are easily available.

4.6.3 Quality of care

Table 4.13: time taken to receive the test results

Husband support	Frequency	Percent	Valid Percent
Immediately	3	23.1	23.1
No	10	76.9	100
Total	13	100	

Despite the fact that it is a small proportion that had gone for screening, the rate of result reception was fast, as about 77% received their results within 24 hours and 23% received the results immediately as it was answered when the respondents were asked how long it took for them to receive the screening results as shown in table11 above.

Table 4.14: quality of care during screening

Husband support	Frequency	Percent	Valid Percent
Immediately	13	100	100
No	0	0	00
Total	13	100	

A small percentage had been screened, and out of those who were screened, all of them said they liked the care they received from the health workers, a sign that the health workers were handling them well as they responded to the question, if they liked the care they received from the health workers during the screening process.

4.7 Economic factors

Most of the respondents interviewed composing the largest proportion of 30% is casual workers and laborers who in most cases earn less than a dollar a day. They are closely followed by those who are jobless and small scale businesswomen at 26% and 22% respectively. Peasant farmers account for 15%. It is only 6% who are in formal salaried employment and 1% large scale business women as shown in the figure 6 below. There spouses occupation gives more or less simiar results.

Table 4.15: frequency table showing the occupation of the respondents

Nature of occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Salaried employment	11	6.3	6.3	6.3
Casual employment	50	28.7	28.7	35.1
Small scale business	40	23.0	23.0	58.0
Peasant farmer	26	14.9	14.9	72.9
Jobless	46	26.4	26.4	99.4
Large scale business	1	0.6	0.6	100
Total	174	100.0	100.0	

When asked if they have any medical insurance, only 25% said yes and the largest proportion of 75% said they are not members of any medical scheme. All those who are members of medical insurance said it does not cater for cervical cancer screening. Economic factors hindering the utilization of cervical cancer screening are reflected in the table below where the largest proportion accounting for 40% claimed they did not go for screening due to opportunistic forfeiting work and income when they go to health facilities for screening. Others cited other factors apart from those highlighted by the researcher accounting for 32%. High pocket spending, 18% and burden of other diseases 11% followed respectively as shown in the frequency table 13 below.

Table 13: economic factors hindering the utilization of screening services

Reason	Frequency	Percent	Valid Percent	Cumulative Percent
High pocket spending	33	19.0	19.1	19.1
Opportunistic forfeiting work and income	65	37.4	37.6	56.6
Burden of other diseases	19	10.9	11	67.6
Others	56	32.2	32.4	100
Total	174	100.0	100.0	

4.8 Summary of the chapter

This chapter makes an assessment of the results of various named factors influence the utilization of cervical screening services in Gesima Division, Nyamira County. The factors discussed here include, human resource capacity, social-cultural factors, health system factors and economic factors. It has been able to confirm the conceptual framework that if the above factors are not well looked at, the utilization of cervical cancer screening will continue to be low and thus putting the general population at risk of being infected with cervical cancer.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction of the chapter

This chapter discusses the summary of the findings; conclusions reached and then give the recommendations as per the responses from the respondents. This is in relation to factors influencing the utilization of cervical cancer screening services in Gesima Division, Nyamira County. The chapter also looks at the conclusions and recommendations as deduced from the study findings. Finally the chapter points out the areas the researcher thought would require further research in related fields.

5.2 Summary of findings

Adequate cervical cancer screening can be ensured if all the stake holder work hand in hand in a well coordinated manner. A number of previous attempts in the past were introduced for well organised cervical cancer screening programs at National, Provincial and local levels in South Africa which failed due to poor health education program at the community level (Lieman, 1987).

5.2.1 Human resource capacity

It is a determinant that has a substantial effect on the consumption of cervical cancer screening services more especially at the grass root level. From the findings, there is chronic inadequacy of health personnel in the division which has a population of approximately 53,000 people, which is still exponentially increasing. Using outreach staff to promote cervical cancer screening can show positive effects in the rural areas. As such, use of community health workers to educate our rural population on prevention of cervical cancer can boost their knowledge and ability to seek cervical cancer screening. Similar positive effects have observed from physician and patient prompts as well as opportunistic screening both in outpatient and inpatient settings. But, surprisingly, there is iniquitability in allocation of health workers to rural areas as the records from the ministry of health show where people in rural areas are disadvantaged.

There is general lack of understanding by health care workers of the importance of screening services so as to dedicate their time to work outside their job description and specification for

the benefit of the poor rural community. This is a common phenomenon in rural areas where there are few health workers who have to multitask to meet the health requirements of the larger population, for instance, there are only 2 medical doctors serving a population of almost 60,000 people in Gesima division. This has a negative impact on cervical cancer screening in rural areas.

Allocating more health workers to rural areas and informing them on the importance of improving the acceptability of screening to women by providing accessible, accurate information, reduce waiting time during screening, results and treatment that are more acceptable will help to promote utilization of screening services. This study has confirmed that health care workers' contribution to inform the communities are higher compared to other modes of communications thus strategies at health facilities to educate clients should be considered as an opportunity.

5.2.2 Socio-cultural factors

This study is limited to rural women in Gesima Division, Nyamira County in Kenya. The demographic information indicates that these rural women in Gesima Division are less educated (bellow tertiary education, 70.7%) and unemployed. This is the characteristic of underdevelopment and poverty and comparing with the findings of the census 2009 (statistics Kenya) for the same population.

The study indicates low level of knowledge on cervical cancer (54.5 %) more especially on women of age 46 years and above (6.3%) and cervical cancer screening (31%) on the general population. This might be due to low education level and lack of community education through health campaigns since no massive health campaign that has ever been carried out in the region despite the magnitude of the problem.

Women who have a higher educational background and better knowledge of cervical cancer screening also have a higher rate of cervical cancer screening (2% out of 29% who attained tertiary education). The low coverage of cervical cancer screening thus could be due to low level of knowledge on the benefits of the screening and prevention of cervical cancer. Most women (above 70%) do not know the relationship between cervical cancer screening and reduction in the prevalence of cervical cancer.

Although more than half of these women (54.5%) have knowledge on cervical cancer, and 37% of them know cervical cancer screening services exist, it is only less than 5% who have undertaken the screening. This was attributed to fear of screening method to be used (30%) followed by distance to the health facility (20%) and to a larger extent the fear that they may be unwillingly be tested for HIV which accounted for (19%) and lack of male spouse support. Bad attitude and treatment of the medical personnel was ruled out as a hindrance for seeking screening services as almost all those who undertook the screening (100 %) acknowledged being treated with respect and given the information they required about cervical cancer and screening process. Efforts to enhance positive family communication and access to accurate and timely information to both husband and wife will eliminate the myths and beliefs which negatively impact on the utilization of cervical cancer screening services.

5.2.3 Health system factors

Morbidity and mortality from cervical cancer has been found effectively reduced in many developed countries with the use of systemic screening programs. Although the availability and accessibility of screening services are important, this does not guarantee successful screening since despite the availability of the screening services in the division for the past half a year, only less than 2% have been screened, compared to 31% who have knowledge on the cervical cancer screening services.

Despite a significant proportion 20% claiming that they have not sought screening services due to long distance they have to travel to their nearest most preferred health facility, my opinion is that, the importance of screening supersedes all and distance may not matter as such. The same findings were also found in the study done in the United States among Vietnamese immigrants which showed that most of them never had Pap smear test inspite of availability of the services (Christopher, 1987). Similar findings were reported from Mexico and revealed that in disadvantaged rural communities, only 30% had Pap smear test and more than 60% were not informed about Pap smear test. This is attributed to lack of community mobilization and communication difficulties in the area.

5.2.4 Economic factors

Economic factors have a substantial effect on the utilization of cervical cancer screening services. Most of the women as revealed from the study (93%) had not made any attempt to seek screening. This was because of the fact that most women accounting for 30% are casual

workers and jobless 26% respectively and thus earn less than a dollar a day and thus cannot afford both direct and indirect charges required for effective screening. The findings also revealed that a substantial proportion of 37% of women had not sought any cervical screening services because of opportunistic forfeiting of work and income. This could be explained through their nature of work as casual workers, small businesses and peasant farmers who work majorly for consumption.

Most of these rural women do not have savings and alternative sources of income they can use for consumption in case they do not work on a daily basis to seek cervical cancer screening. High pocket spending and believe that screening is expensive is a great hindrance towards screening because of their economic situation and dependence on consumptive budget. They handle situations on priority basis and since cervical cancer takes long to show symptoms, they do not give it first priority unlike malaria, upper respiratory tract infection on children, diarrheal diseases and opportunistic infection as a result of HIV which have an immediate impact and effect. That is why 10% claimed that the burden of other diseases hinders them from effectively going for cervical cancer screening.

5.3Discussion of findings

Adequate coverage is thus dependent on knowledge on the benefits of screening, availability of the screening services at the health facilities and proper functioning of health system (timely testing, receiving of test results, referral of abnormal results to appropriate level of care), and perception and attitude of local community including men to encourage their wives to go for screening. Provisions should be made available for target women when they attend health facilities for any (such as family planning and antenatal care) other care, health care workers should educate health care users targeting the risk group on the importance of screening and motivate them to be screened.

Therefore, it is also important that health care workers are well informed about national cervical cancer screening policy and develop institutional policy to implement national policy on screening. On the other hand community health workers who would then educate the community to improve awareness on cervical cancer and availability of screening. Therefore, the success of screening program in reaching its aim on achieving adequate coverage and thus could reduce morbidity and mortality from cervical cancer.

5.4 Conclusion of the study

Most of these rural women are less educated, have less knowledge and experience on cervical cancer and screening programs, are most important factors in determining the success of cervical cancer screening services utilization in any area since they are the direct recipients and beneficiaries of the services. It seems therefore, unlikely that the national cervical cancer policy would succeed unless it institutes a comprehensive community and health facility initiated education program, which would involve health care workers, media and other institutions.

5.5 Recommendations of the study

Based on findings from this study, the following recommendations are made so as to improve the utilization of cervical cancer screening services;

i) Adequate coverage is therefore dependent on knowledge of the benefits of cervical cancer screening, availability of the test at the health facilities and proper functioning of health system (timely testing, receiving test results and acting on the results alongside giving important information about cervical cancer to clients), and attitude and presentation of health workers to the clients.

ii) Provisions should be made available for target women who attend health facilities for any (such as family planning and antenatal care) other care, health care workers could educate health care users targeting the risk group on the importance of screening and motivate them to screen. Therefore it is also important that health care workers are well informed on community entry and mobilization strategy to ensure the utilization of cervical screening services is enhanced.

iii) On the other hand, community health workers who are close to communities and visit households regularly, educate the target population of the benefits of cervical cancer screening.

iv) Further training is needed for community health workers who would then educate the communities to improve awareness through their routine to households.

v) There should be comprehensive combined efforts from all the stakeholders, right from the ministry level to the local authorities focused towards the success of the screening program in reaching its aim of achieving adequate coverage and thus reduction in the morbidity and mortality from cervical cancer.

5.6 Suggestion for further research

a) A situational analysis to assess the current capacity of the health system to handle a cervical cancer screening program is needed to give guidelines in the planning and implementation of the program

b) A study to assess the acceptability of cervical cancer screening methods available for women to guide the introduction of a nation-wide screening program right from the community level

c) A cross-sectional survey to determine the current consumption and distribution of cervical screening services in Kenya. This will assist in the proper planning of the cervical cancer screening program

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APPENDIX 1: LETTER OF INTRODUCTION

Alexander O. Matoke
University of Nairobi,
College of Extra Mural studies,
School of Continuing and Distance Education,
Nairobi, Center.

The MOH
Masaba District
Dear sir/ madam.

RE: Academic Research

I am a student of University of Nairobi pursuing a Masters Degree in Project Planning and Management. Am conducting an academic research on factors influencing the utilization of cervical cancer screening services in Gesima Division, Nyamira County. Gesima Division has been chosen because it's a rural area where the stated factors are believed to be significant. I hereby request you to kindly accord me with the required support to achieve the required goal as this research is purely for academic purpose and not any other purpose. Thank you in advance.

Yours faithfully,

Alexander Matoke

APPENDIX 2: QUESTIONNAIRE

Request for Participation

This questionnaire is prepared to facilitate in the collection of relevant data for an academic research whose aim is to study the factors influencing the utilization of cervical cancer screening services utilization in Rural Kenya Rigoma Division in Nyamira County. The information gathered will only be used for the study and shall not be used to victimize any one and the respondents will remain anonymous and their names shall not be revealed to anyone. We would like you to participate in this survey. You were randomly chosen from among many people and everything that you tell us will be kept confidential. The information that you provide us will be combined with information from about 173 other women, and will not be identifiable as coming from you. Your participation is voluntary. You do not have to participate. If you do, you can choose not to answer a particular question, or even stop the interview at any point. You or your family will not get into any trouble if you decide not to participate.

Would you like any more information before making your decision to participate or not?

SECTION 1: SOCIO-DEMOGRAPHIC DATA OF THE RESPONDENTS

Q. NO	QUESTION	RESPONSES	☒	CODE
.	How old are you?	.....Years		
.	What is your level of education? *(Mark one appropriate box only)*	1= None	☐	
		2= Primary	☐	
		3=Secondary	☐	
		4= Tertiary	☐	
		5=Others, *Specify*.....	☐	
.	What do you do for a livelihood?	1=Salaried employment	☐	
		2=Casual employment	☐	
		3=small scale business	☐	
		4=large scale business	☐	
		5=peasant farmer	☐	
		6=large scale farmer	☐	
		7=beggar	☐	
		8=others,	☐	

		Specify.....		
.	Do you have a spouse? *(If response is 2, stop here)*	1= Yes	☐	
		2= No	☐	
.	What is his highest level of education? *(Mark one appropriate box only)*	1= None	☐	
		2= Primary		
		3= Secondary	☐	
		4= Tertiary	☐	
		5=others, *Specify*.....	☐	
.	What is his occupation? *(Mark one appropriate box only)*	1= Salaried employment	☐	
		2= Casual employment	☐	
		3= Small scale business	☐	
		4= Large scale business	☐	
		5= Peasant farmer		
		6= Large scale farmer		
		7=others, *Specify*.....	☐	

SECTION 2: INFLUENCE OF HUMAN RESOURCE CAPACITY ON THE UTILIZATION OF CERVICAL CANCER SCREENING SERVICES

Q. NO	QUESTION	RESPONSES		
2.1	Have you ever heard of Cervical cancer? (*if the answer is yes, proceed and if it is no, go to 2.4*)	1=yes		
		2=no	☐	
	Where did you first hear of cervical cancer?	1=school	☐	
		2=health facility	☐	
		3=church	☐	
		4=home	☐	

		5=media	☐	
		6= health campaigns	☐	
		7=others, *specify*.....		
2.3	From whom did you fist hear of cervical cancer?*(Mark all that apply)*	1=parent	☐	
		2=spouse	☐	
		3=friend	☐	
		4=church leader	☐	
		5=health care provider	☐	
		6=teacher	☐	
		55=Other (Specify).....	☐	
2.4	Have you ever gone for cervical cancer screening? (*if the answer is 2, go to 2.7*)	1=yes	☐	
		2=no		
2.5	Were you screened? (*Prop*)	1=yes	☐	
		2=no	☐	
2.6.	If no why?	1=no qualified person to do the screening	☐	
		2=no screening materials	☐	
		3=was expensive to afford	☐	
		4=health workers did not want to do the screening	☐	
		5= no cervical cancer screening services in the health facility	☐	
		6=no screening services available in the health facility		
		7= inadequate staff to do the screening		
		99= others, *specify*.....	☐	
2.7	Have you ever requested for a cancer screening (*Prop*)	1=yes	☐	
		2=no	☐	

2.8	Were you screened? (*Prop*)	1=yes	☐	
		2=no	☐	
2.9	If no, why? (*Prop*)	1=lack of equipments	☐	
		2=lack of qualified personnel	☐	
		3=lack of time	☐	
		4=wait for the person to do the screening	☐	
		5=come another day	☐	
		99=others, specify	☐	
SECTION 3: INFLUENCE OF SOCIO-CULTURAL FACTORS ON THE UTILIZATION OF CERVICAL CANCER SCREENING SERVICES				
Q2. NO	**QUESTION**	**RESPONSES**	☒	
3.1	Have you ever heard of cervical cancer *?((prop) (if response is , go to 2.5)*	1= Yes	☐	
		2= No	☐	
3.2	Where did you first hear about cervical cancer?	1= school	☐	
		2=health facility	☐	
		3=church	☐	
		4=home	☐	
		5=media	☐	
		6=health campaigns	☐	
		7=others *(specify)*.....		
3.3	How old were you when you first heard of cervical cancer? *(prop)*	1=0-12 Years	☐	
		2=13-18 Years	☐	
		3= 19-30 Years	☐	
		4= above 30 years	☐	
3.4	At what level did you hear	0= Before school	☐	

	about cervical cancer? *(prop)*	1= Primary	☐	
		2= Secondary	☐	
		3= After school	☐	
		99= Don't Know		
3.5	Have you ever heard of Cervical cancer screening	1= yes		
		2= no		
3.6	Where did you first hear about cervical cancer	1= school	☐	
		2=health facility	☐	
		3=church	☐	
		4=home	☐	
		5=media	☐	
		6=health campaigns	☐	
		7=others *(specify).....*	☐	
3.7	Have you ever gone for cervical cancer screening? (*prop*)	1= yes	☐	
		2= no		
3.8	How many times have you ever been screened for cervical cancer (*Prop*)	1=1	☐	
		2=2	☐	
		3=3	☐	
		4=4	☐	
		5=5 and above	☐	
		99=don't know	☐	
3.9	Why did you go for screening of cervical cancer	1=just wanted	☐	
		2=doctor's recommendation	☐	
		3=husband's persuasion	☐	
		4=	☐	
		5=5and above	☐	

		99=don't know	☐	
3.10	Why haven't you ever gone for screening? (*Prop*)	1=fear that you may be tested for HIV	☐	
		2=fear of explaining asking for the test		
		3=shyness and fear of the method of testing		
		4=lack of male support	☐	
		5=fear of pain	☐	
		6=lack of knowledge about cervical cancer	☐	
		99=others, *specify*.....	☐	
3.11	Has your husband ever told you about the importance of screening?	1=yes	☐	
		2=no	☐	
3.12	Do you think screening can help prevent cervical cancer? *Explain*	1=yes	☐	
		2=no	☐	
		.....		
3.13	Highlight the methods you know which can help prevent cervical cancer	1=..... ..... 2=..... ..... 3=..... ..... 4=..... ..... 5=..... ..... 6=..... ..... 55=don't know		
3.14	How much do you think a cervical cancer screening service costs?	1=free		
		2=less than 1000 shillings		

		3=between 1000-2000 shillings		
		4=between 2000-4000 shillings		
		5=beyond 5000		
SECTION 4: INFLUENCE OF HEALTH CARE SYSTEM FACTORS ON THE UTILIZATION OF CERVICAL CANCER SCREENING SERVICES				
Q. NO	**QUESTION**	**RESPONSES**		
4.1	Has the following factors ever hindered you from seeking cervical cancer screening?	1=fear of the screening method to be used	☐	
		2= lack of equipments in hospitals		
		3= Delays in diagnosis and treatment		
		4= Insensitive health care workers		
		5= poor handling by health workers		
		6= poor quality of health care in health facilities		
		7=distance of the health facility		
		99= others, *specify*.....		
	When you were screened for cancer, how long did it take you to receive the results? (*Prop*)	1= immediately	☐	
		2= 1 day	☐	
		3= between 1-2 hours	☐	
		4=between 3-4 hours	☐	
		5=between 5-6 days	☐	
		6= 1 week	☐	
		7=2 weeks	☐	
		8=beyond 2 weeks	☐	

		9=never received the results	☐	
4.3	When you went for cervical cancer screening, did you like the reception you got from the health worker? *Explain the kind of reception you got.*	1=yes	☐	
		2=no	☐	
		.....		
4.4	Did you like the quality of care you received in the hospital? *explain*	1=yes	☐	
		2=no	☐	
		.....		
4.5	Were you handled well during and after screening? *Explain*	1=yes	☐	
		2=no	☐	
		.....		
4.6	Were you given any information about cervical cancer, screening and prevention? *Highlight the information you were given*	1=yes	☐	
		2=no	☐	
		.....		
4.6	What is the distance between where you live and the nearest health facility?	1= less than 1 km	☐	
		2=between 1-5 km	☐	
		3=between 6-10 km	☐	
		4=between 12-15 km	☐	
		5=between 16-20 km	☐	
		6=Beyond 20 km	☐	
4.7	How much did you pay for the screening?	1=free	☐	
		2=less than 100 shillings	☐	

	(Prop)	3=between 200-500 shillings	☐	
		4=between 500-1000 shillings	☐	
		5=between 1000-5000 shillings	☐	
		6=beyond 5000 shillings	☐	
4.8	In your own opinion what should be done in the health care system to increase the utilization of cervical cancer screening services?	.....		
SECTION 5: INFLUENCE OF ECONOMIC FACTORS ON THE UTILIZATION OF CERVICAL CANCER SCREENING SERVICES				
5.1	Have the following factors ever hindered you from seeking cervical cancer screening? *(tick all that applicable)*	1= high pocket spending	☐	
		2= travel and costs incurred	☐	
		2=opportunistic forfeiting work and income	☐	
		3=lack of insurance	☐	
		4=burden of other diseases	☐	
		99=others, *specify*.....	☐	
5.2	Have you ever stayed for long between screenings due to financial constraints?	1=yes	☐	
		2=no	☐	
5.3	Can your income enable you effectively seek cervical cancer screening services?	1=yes	☐	
		2=no	☐	
5.4	Suppose you were to go to the nearest health facility to seek cervical cancer screening services, how much could you spend as bus fare?	1=less than 20 shillings	☐	
		2=between 20-50 shillings		
		3=between 50-80 shillings		
		4=between 80-100 shillings		
		5=between 100-200 shillings		
		6=between 200-300 shillings		

		7=between 300-500 shillings		
		8= above 500 shillings	☐	
5.5	Do you have any medical insurance scheme?	1=yes	☐	
		2=no	☐	
5.6	If yes, does it help you always when you have a medical problem? *explain*	1=yes	☐	
		2=no	☐	
		.....		
5.7	In your own opinion what should the government do in terms of financing to promote the utilization of cervical cancer screening?	.....		

.....THANK YOU.....

APPENDIX 3

INTERVIEW SCHEDULE FOR THE MINISTRY OF PUBLIC HEALTH AND MEDICAL SERVICES OFFICERS

This interview schedule is prepared to facilitate in the collection of relevant data for an academic research whose aim is to study the factors influencing the utilization of cervical cancer screening services in the region. The information gathered will only be used for this study and shall be treated with strict confidentiality.

1. Highlight some of the factors influencing the utilization of cervical cancer screening services in the region

2. To your own opinion describe how the following health system factors influence the utilization of cervical cancer screening services in the region

    i) Health infrastructure available

    ii) Number, qualifications and distribution of health care providers available for cervical cancer screening in the region

    iii) Priority scale of in tackling cervical cancer at the expense of other diseases

    iv) Availability of organized cervical cancer screening prevention program in the region

3. What do you do to promote and create awareness about cervical cancer and the screening services?

4. What challenges do you encounter when as you seek to promote cervical cancer preventive services?

5. Kindly comment on the funding for cervical cancer screening, prevention and treatment in the region

6. What do you think should be done by ball the stakeholders to enhance the utilization of cervical cancer screening services in the region?

APPENDIX 4

INTERVIEW SCHEDULE FOR MEDICAL OFFICERS

This interview schedule is prepared to facilitate in the collection of relevant data for an academic research whose aim is to study the factors influencing the utilization of cervical cancer screening services in this region. The information gathered will only be used and shall be treated with strict confidentiality.

1. How does human resource capacity in terms of;
   i) Numbers of the available health care providers in the region,
   ii) Qualification influence the utilization of cervical cancer screening services in this region
2. How does health system factors in terms of;
   i) Accessibility of health services
   ii) Availability of the health services
   iii) Availability of the required equipments for cervical cancer screening and treatment
   iv) Quality of the health services influence the utilization of cervical cancer screening services in the region
3. Does the quality of health services in the health facilities promote the utilization of cervical cancer screening services? Explain
4. Kindly, comment on the quality and availability of funding for cervical cancer screening, prevention and treatment in the health facility
5. What do you think should be done by ball the stakeholders to enhance the utilization of cervical cancer screening services in the region?