

**DETERMINANTS OF CERVICAL CANCER SCREENING SERVICE UTILIZATION  
AMONG WOMEN AGED 25-49 YEARS ATTENDING KITENGELA SUB-COUNTY  
HOSPITAL- KAJIADO COUNTY**

**SARAH NANEU DANIEL**

**H56/34076/2019**

**A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN  
ONCOLOGY NURSING OF THE UNIVERSITY OF NAIROBI**

**NOVEMBER, 2021**

## DECLARATION

### DECLARATION

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

Signature.......... Date.....19/11/2021.....


Sarah Naneu Daniel


H56/34076/2019

## CERTIFICATE OF APPROVAL

### CERTIFICATE OF APPROVAL

This thesis has been submitted for review with our approval as the University of Nairobi Supervisors.

1. Signature.......... Date 24<sup>th</sup> Nov. 2021  
Dr. Mary Kamau, PhD  
Lecturer  
Department of Nursing Sciences  
University of Nairobi.

2. Signature.......... Date 24/11/2021  
Dr. Emmah Matheka, PhD  
Lecturer  
Department of Nursing Sciences  
University of Nairobi

**DEDICATION**

I dedicate this project to my family, my husband Sammy Kitonyi and our two children Valerie and Alvin for their overwhelming support throughout the period of studies for this Masters course.

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## **ABBREVIATIONS LIST**

<b>CIN</b>	Cervical intraepithelial neoplasia
<b>FP</b>	Family Planning
<b>HIV</b>	Human Immunodeficiency Virus
<b>HPV</b>	Human Papillomavirus
<b>MCH</b>	Maternal Child Health
<b>MOH</b>	Ministry Of Health
<b>SPSS</b>	Statistical Package for Social Sciences
<b>VIA</b>	Visual Inspection of the cervix with Acetic acid
<b>VILI</b>	Visual Inspection of the cervix with Lugol's Iodine
<b>WHO</b>	World Health Organization
<b>IUCD</b>	Intra uterine contraceptive device
<b>CCS</b>	Cervical cancer screening
<b>SPSS</b>	Statistical package for social sciences
<b>GAVI</b>	Global alliance for vaccines and immunization

## **OPERATIONAL DEFINITION OF TERMS**

**Determinant:** - This is a factor that will convincingly affect the nature and outcome of cervical cancer screening service.

**Cervical cancer screening:** - It is a non- invasive procedure carried out by healthcare workers on women aged 25-49 years to detect abnormal changes on cells of the cervix. The procedure relies on use of naked eyes to visualize change on the surface of the cervix to suggest of either a pre-cancer lesion, invasive cancer or no change on the cervix after application of certain reagents on the cervix or analysis of cervical cells.

**Service:** A routine engagement of women aged 25-49 years by healthcare workers by act of screening for cervical cancer.

**Utilization:** The action of making use the available screening service for cervical cancer by women aged 25-49 years

**Women aged 25-49 years:-**These are women of reproductive age, targeted for cervical cancer screening according to guidelines and policies set up by the Ministry of Health (Kenya).

## **ABSTRACT**

**Background:** Cervical Cancer has been established as the fourth most common cancer among women all over the world, with an estimation of 570 000 new cases in 2018. Kenya cervical cancer statistics have shown that the disease contributes 5 250 (12.9%) of the new cancer cases every year, consequently contributes to 3 286 (11.84%) of all the cancer deaths every year. The World Health Organization (WHO) reports have shown that cervical cancer screening for early detection of precancerous cells, is one path to elimination of cervical cancer among the women population.

**Methodology:** This was a descriptive cross-sectional study carried out at Kitengela Sub-county Hospital Maternal Child Health FP clinic. Women aged 25-49 years seeking services FP were assessed. Semi-structured researcher administered questionnaires were used to assess bio-sociocultural, economical, level of knowledge and healthcare system factors influencing cervical cancer screening services utilization. Sample size was determined by use of Fishers' formula and 194 participants were selected through systematic random technique. Quantitative data was analyzed using descriptive statistics consisting of frequencies, percentages and means. Logistic regression models was run to check the relationships between the variables and tested using Pearson's correlation test with the help of Statistical package for social sciences (SPSS).

**Results:** Age group of 26-30 years had the highest number of participants of 82(42.3%). There was a significant relationship ( $p$  value=0.000) between age of the respondent and utilization of cervical cancer screening service. The study showed 69(35.6%) and 63(32.5%) of the respondents were moderately and highly knowledgeable respectively. There was a significant relationship ( $p$  value=0.000) between knowledge on cervical cancer risk factors and the utilization of cervical cancer screening service. Similarly there was a significant relationship ( $p=0.001$ ) between awareness of the misinformation and misconception and utilization of cervical cancer screening service. There was no significant relationship between education level and monthly income to the utilization of cervical cancer screening. However, study results revealed a statistical significance ( $p$  value=0.003), between awareness on the availability of free cervical cancer screening and utilization of the service. Majority of the respondents 105(54.1%) would engage any healthcare worker to discuss their reproductive system health needs. However, a significant number of them 77 (39.7%) preferred a female healthcare worker. A vast number of women 149 (76.8%) missed the screening during data collection period and majorly tied this to the service being unnecessary at the moment because they didn't have symptoms (51%) and the long waiting hours to be screened (50%).

**Conclusion:** The study concludes that utilization of the cervical cancer screening was way below average with only 43(22.2%) of the respondents reporting to have utilized the service in the past. Bio-sociocultural, level of knowledge and healthcare factors are the major factors influencing the utilization of the cervical cancer screening service.

## **CHAPTER ONE: INTRODUCTION**

### **1.0 Background Information**

Cervical cancer has been established as the fourth most common cancer among women all over the world, with an estimation of 570 000 new cases in 2018. All countries are affected globally but the incidence is higher in low-middle-income countries (Hernández Vargas et al., 2021). Studies have shown that incidence rates vary from 75 per 100 000 women in countries with the highest risk to less than 10 per 100 000 women in countries with the lowest risk. Low-middle-income countries have experienced nearly 60% of the 311 000 deaths reported in 2018 worldwide, and this is more than twice the proportion in many high-income countries, where it is as low as 30% of the 311 000 deaths (Arbyn et al., 2019). Similarly, in sub-Saharan Africa cervical cancer incidences are the highest in the World and a study by (Anaman-Torgbor et al., 2020), showed statistics of 35 per 100,000 cases versus 23 per 100,000 deaths from the disease annually. Kenya cervical cancer statistics have shown that the disease contributes 5 250 (12.9%) of the new cancer cases every year, consequently contributing to 3 286 (11.84%) of all the cancer deaths every year. It is the leading cause of cancer related deaths in Kenya and also the second common cancer among women (Bray et al., 2018).

On the other hand, studies projections have shown that the burden of cervical cancer will rise to 700 000 cases and 400 000 deaths in 2030 globally with comparable increases being expected in future years as demonstrated by Torre et al.,( 2017). To a great extent more than the total increase in incidences and deaths will be in women in low-middle-income countries. This evidently shows the severity of global disparity in cervical cancer morbidity and mortality as indicated by(Simelela, (2021). Studies done have shown that developed countries have maximally beaten cervical cancer and (Rahman et al., 2013) study, showed that the United States registered an incidence rate of 1.7/100,000 and mortality rate of 5.7/100,000, while Canada registered incidences of 6.6/100,000 and mortality rate 1.9/100,000 respectively.

According to Brisson & Drolet, (2019), Cervical cancer is a public health problem and if not prevented and detected early, it will have a massive impact on the healthcare system, individual life and countries' economy. The World Health Organization (WHO) reports have shown that cervical cancer screening for early detection of pre-cancerous cells, is one path to elimination of cervical cancer among the women population (Tsu et al., 2013). A study by Binagwaho et al., (2019), recommended that early detection of pre-cancerous cells is anchored in well-designed

strategic actions to improve knowledge on cervical cancer, health system and health workforce management and integration of cervical cancer screening services. Recommendations for cervical cancer screening by WHO, supports engagement and especially women in the community, so as to identify barriers that hinder them from participating in cervical cancer screening services (Simelela, 2021).

Cultural role in cervical cancer screening has evidently demonstrated the lower turn out of women to utilize the services in Low-middle-income Countries and a study by (Islam et al., 2017), found out that culture influences behavior change in relation to gaining knowledge and accepting screening for cervical cancer as a preventive measure. The socio-cultural factors that increase HPV acquisition and promote oncogenic effect of the virus, are widespread in the Africa continent and among these factors are; polygamous marriages, early marriages and high parity as illustrated by (Anorlu, 2008). Polygamy is an agreed valid practice in most Sub-Saharan societal settings. Impact of socio-economic influence on screening for cancer of the cervix has been measured in several studies globally and research by Nuche-Berenguer & Sakellariou, (2019), demonstrated disparities based on socioeconomic status of populations in high income and low income Countries in association to utilizing cervical cancer screening services. More often cervical cancer has been alluded to as an illness of the poor women and this explains why cervical cancer is endemic in Sub-Saharan Africa due to the low socio-economic state of women living in this part of the Continent (Johnson et al., 2018).

Among women who are at risk of cervical cancer are those living with HIV with a prevalence rate of cervical intra-epithelial neoplasia of 20-40%. According to global strategy to eliminate cervical cancer, these women living with HIV are six times more likely to develop cervical cancer at a younger age due to an immune-compromised state. A positive status for HIV determines the need for cervical cancer screening however, women living with HIV have not received the cognizance and resources that are required to deal with its prevention and screening coverage has been consistently low (Simelela, 2021), (Franceschi & Jaffè, 2007), (Perez-Guzman et al., 2020).

In Kenya, studies done in various parts of the country outlined numerous contributing factors to low uptake of screening services for cervical cancer, with only 14% of women aged 30-49 years screened for cancer of the cervix (Ng'ang'a et al., 2018). Kenya, like other developing Countries is facing numerous challenges in the provision of cervical cancer screening services in different

perspectives. A study done within the Country major Hospitals demonstrated challenges of poor attitude, long waiting hours among others, faced by cervical cancer managers in provision of screening services for women attending health facilities selected for the study (Kivuti-Bitok et al., 2013). At the same time, a study done in Imenti South Meru County measured challenges to visual cervical cancer screening and revealed that participants and health facility associated factors had significant influence on cervical cancer screening services utilization with respondent expressing unawareness of screening, culminating to missed opportunities (Njiru, 2016). Cervical cancer screening in Kenya has been achieved by visual inspection with acetic acid (VIA) and visual inspection with Lugol's iodine (VILLI) which has a high sensitivity of close to 100% to detect any cervical intraepithelial neoplasia (Orang'o et al., 2016). This screening service is available throughout the country's major health facilities in the Counties. Despite this service being offered, not all eligible women utilize the service.

### **1.1 Problem statement**

Evidence exists that cervical cancer is among the leading causes of death among women globally and study statistics have shown that the world has a population of 2,784 million women aged 15 years and older who are at risk of developing cervical cancer according to (Bardají et al., 2018). A related study by Canfell et al., (2020) revealed that though increased morbidity and mortality has been reported, preventive and early detection measures can reduce this burden when they are instituted at an early age of the women's lifetime. A descriptive study done in Kitui Central Kenya highlighted that the visual inspection method of cancer of cervix screening has been in practice since 2009 but still the coverage of screening is low, showing the general picture of the country at large according to Mwangi et al, (2017).

Kitengela Sub-county Hospital is Located at Kajiado East (Isinya) Sub-county with a women population of 104, 860 according to Kenya Population and Housing Census 2019 (Kenya National Bureau of Statistics, 2019). A data derived from (MOH 711 Kitengela sub-county Hospital) reporting tool, showed a total of 16,018 women who attended the facility family planning clinic between May 2017 and December 2020. This translates to a total of 381 women attending the facility Maternal Child Health Family planning clinic every month averagely. The data from the reporting tool also showed that only 768 women were screened for cervical cancer over that period, translating to an average of only 18 (2.3%) women per month. The hospital also has a Comprehensive Care Clinic for HIV patients and from the records it was noted that 1,126 women



of reproductive age are being followed up for HIV management. At the same time, no records showing they received cervical cancer screening for the period (MOH 711A *Integrated RH, MCH, and Social Work & Rehab Summary* –Kitengela Sub-County Hospital).

There are no relevant studies carried out in Kajiado County to address the challenges of underutilization of cervical cancer screening services. Therefore, carrying out this study at Kitengela Sub-County hospital is timely. Majority of the women who seek healthcare services at the facility, are low income earners who depend on informal employment. Similarly, there are only 2 private hospitals in the region as compared to Kajiado North where majority of private hospitals in Kenya, have branches in Ngong thus, higher number of women seeking healthcare at Kitengela Sub-County Hospital.

## **1.2 Research Questions**

1. How do bio-socio-cultural factors influence the utilization of cervical cancer screening service at Kitengela-Sub-County Hospital?
2. How does the level of knowledge on cervical cancer influence utilization of cervical cancer screening service at Kitengela Sub-County Hospital?
3. How do client economic factors influence the utilization of cervical cancer screening service at Kitengela Sub-County Hospital?
4. How do healthcare system factors influence the utilization of cervical cancer screening service at Kitengela Sub-County Hospital?

## **1.3 Broad Objectives**

To assess the determinants of cervical cancer screening service utilization among women aged 25-49 years attending Kitengela Sub-County Hospital- Kajiado County.

## **1.4 Specific Objectives**

1. To assess bio-socio-cultural factors influencing utilization of cervical cancer screening service among women aged 25-49 years attending Kitengela Sub-county Hospital.
2. To determine the level of knowledge on cervical cancer screening among women aged 25-49 years attending Kitengela Sub-County Hospital
3. To determine client economic factors influencing utilization of cervical cancer screening service among women aged 25-49 years attending Kitengela Sub-County Hospital.

4. To evaluate the healthcare system factors influencing utilization of cervical cancer screening service among women aged 25-49 years attending at Kitengela Sub-County Hospital.

### **1.5 Null Hypothesis**

There are no existing bio-socio-cultural, knowledge, economic and healthcare system factors influencing cervical cancer screening service utilization among women aged 25-49 years attending Kitengela Sub-County Hospital.

### **1.6 Alternate hypothesis**

There are existing bio-sociocultural, knowledge, economic and healthcare system factors influencing cervical cancer screening service utilization among women aged 25-49 years attending Kitengela Sub-county Hospital.

### **1.7 Justification of the Study**

The utilization of cervical cancer screening at Kitengela Sub-county Hospital is way below the World Health Organization recommendation on the uptake target of 70% globally. Despite the facility family planning clinic attending to a sufficient number of clients every month, the screening exercise has been low at 4.7% for the period between May 2017 and Dec 2020. Kenya's Ministry of Health has come up with a strategic plan 2017/2022 Munoru et al., (2019) for a cancer control program, and we are one year to the completion of the plan, but factors contributing to the under-utilization of cervical cancer screening are yet to be determined and eliminated (Makau-Barasa et al., 2020)

Kitengela Sub-county hospital was purposely selected among health facilities in Kajiado County. It has recorded the highest number of women seeking healthcare on a daily basis at Maternal Child clinics as compared to other level hospitals in the county, however low rates of cervical cancer screening has been observed (MOH 711 Kitengela SCH). The study will be the initial study in the County that will seek to shed more light on challenges associated with underutilization of cervical cancer screening services.

The study seek to assess the existing bio-socio-cultural, economical, level of knowledge and Healthcare system factors that would have led to under-utilization of cervical cancer screening services with a goal of identifying an approach to eliminate the factors and therefore the hospital

will be at the road of achieving the 70% target for prevention and early detection of cervical intra-epithelial cells.

### **1.8 Significance of the Study**

The study was the initial within Kajiado County and therefore will be of significance in different ways. The study findings will be useful in the facility in putting up strategies for adequate registry of cervical cancer screening, follow-up and structured referral system. The study findings will also guide planning on the required number of health workers requiring adequate training on cervical cancer screening, who will be at the fore front to train others thus strengthening cervical cancer prevention and control interventions. The study findings will also guide the facility on establishing proper awareness creation platform to mobilize women to utilize cervical cancer screening. This will be essential in moving Kenya's agenda of improving cervical cancer prevention and control forward, thus reducing morbidity and mortality.

The study recommendations will be incorporated with other studies to form the basis of evidence-based decision making in practice of health professionals as well as training and curriculum modification to suit both pre-service and post-basic training. The study results will also provide information on how policies can be improved and in advancement of the body of knowledge as far as determinants of cervical cancer screening services utilization are concerned.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.0 Introduction**

In this study the researcher conducted literature review of relevant articles and studies done globally, in Sub-Saharan Africa, East Africa and locally examining factors influencing cervical cancer and screening services utilization among women eligible for the screening. The review sought to understand why eligible women are not optimally using the available screening services, and what gaps require to be addressed in relation to the study area. Some of the databases the researcher assessed include Science direct from University of Nairobi Online Library, PubMed, Sage and Google Scholar. The Key words used in search were *cervical cancer*, *cervical cancer screening*, *human papillomavirus*, *Sub-Saharan and cervical cancer*, *socio-cultural influences on cancer screening and health service system barriers to cancer screening*. The searches yielded significant amount of literature with evidence that under-utilization of services for cancer of cervix screening are associated with bio-socio-cultural, community characteristics and healthcare systems challenges.

### **2.1 Overview of Human Papilloma-Virus and Cervical cancer**

Cervical cancer is determined by the presence of an abnormal growth of cells on cervical lining. The two major types of cervical cancer are Squamous Cell Carcinoma, one of the most common type affecting almost 7 out of 10 (70%) women and Adenocarcinoma type which is not common accounting for only 25% cases of cervical cancer and it is situated in the glandular cervical cells (Gemedu et al., 2020). Studies have established that Human Papilloma Virus (HPV) is the most known etiological agent of cervical cancer (99.7%) and the virus is the most common sexually transmitted infection with a prevalence of 75% in sexually active women (Chellapandian et al., 2021) The progression of the infection to cervical cancer is generally gradual taking up to 10-20 years although women usually get infected shortly after they become sexually active (Roden & Stern, 2018). It has been estimated that when 1 million women get infected with the virus through sexual intercourse, 10% of these women will develop precancerous tissue changes of the cervix and 8% of these women with precancerous cells will progress to early stages of cervical cancer. A vaccine for HPV prevention has been the greatest achievement globally because currently there is no treatment for HPV infection once a person is infected as indicated by Shiko et al., (2020). Mostly, the individual's immune system protects one from the infection and renders the infection dormant over time.

Commonly reported symptoms of cervical cancer caused by HPV are; red warts that appear in the genital area which are itchy and with a burning sensation. Following an infection by HPV, it may progress into low-grade squamous intra-epithelial neoplasia (CIN1) or early stage of abnormal cells and the lesions mostly disappear without any intervention (Dixit et al., 2011).

There has been an increased global focus on cervical cancer because the 10-20 year lag between pre-cancer and cancer offers ample opportunity to screen, detect and treat pre-cancer cells and limit its progression to cancerous cells. The other reason why there is much concern on cervical cancer is the availability and affordable tests that effectively detect pre-cancer cells and hence lifting up the burden of high cost on treatment as indicated by World Health Organization et al., (2014).

## **2.2 Approach to Elimination of Cervical Cancer**

World Health Organization (WHO) strategic report on elimination of cervical cancer states that elimination of this preventive cancer is within reach of every country but only if every country forcibly hold to the opportunities that are within their reach now so that the girls who are born today will live to see a world free of this public health problem. The report showed that cervical cancer is one of the few diseases that is preventable and also curable if detected early as indicated by (Jit et al., 2021). Despite all these possibilities to eliminate the disease, cervical cancer remains the most prevalent cancer and leading cause of cancer related mortality all over the world according to Gultekin et al., (2020).

A similar report by WHO also indicated estimated deaths of 13 per 100,000 women in low-and-middle-income countries as a result of cervical cancer. However the report gave hope that by 2030 with the 90-70-90 triple-intervention strategy, this estimated outcome will be reversed to an approximation of 300,000 mortalities translating to a reduction of 34% (Gultekin et al., 2020). This elimination approach of cervical cancer is firmly attached to the cervical cancer prevention and control program of every state government which are built on the six healthcare system building blocks (World Health Organization et al., 2014).

The 'at least once in her life' journal by Castle and Pierz, (2019), revealed that invasive cervical cancer affects women at their 30s, 40s, and 50s years when they are actively involved in their families growth affairs and therefore the societal impact of invasive cervical cancer is higher if compared to other cancers. This is in agreement with the rationale for global intervention of

working extremely hard to eliminate and reduce the burden of cervical cancer in an efficient and effective approach.

While complete elimination of cervical cancer is within reach of the most developed Countries, a challenge on eradication of this disease in the developing world is the real concern (Sundström & Elfström, 2020). Developing Countries will again lag behind as other parts of the world pursue their goals and celebrate their achievement (Beddoe, 2019). A study done in Sub-Sahara Africa showed that despite many of these Countries having ascribed for HPV vaccine through Global alliance for vaccines and immunization (GAVI) support, several challenges to implementation of National vaccination programs in Sub-Sahara Africa still exist, inclusive of inadequate healthcare training and infrastructure. The findings also noted a lack of awareness of the vaccine and socio-cultural beliefs that the vaccine is associated with promiscuity and sexual misconduct as demonstrated by Black & Richmond, (2018).

High incidence rates of HIV and HPV infections in Sub-Sahara Africa, heightens the incapability of eliminating cervical cancer in these countries. A study done in Mali and Senegal concurrently showed young women aged 15-24 years are the majority with the infections promoted by cultural practices like polygamy, early pregnancies and sexual activity at a young age. The study revealed that these countries have not yet acknowledged cervical cancer as a public health problem and therefore measures to eliminate it are yet to be put in place (Haque et al., 2020).

### **2.3 Overview of Visual Inspection Screening procedure**

Screening cervical cancer is defined as the process of using a simple procedure across a healthy individuals in a population in order to establish existence of a cancer disease in an individual before they develop any symptoms of the disease. The aim of this process is to discover asymptomatic persons who have abnormal features that point out that they could be having a pre-cancerous state of the cancer. This helps in early detection and linking these individuals to a process of having an appropriate diagnostic care and treatment. Adequate human resource with required skills are necessary in performing the screening tests as stipulated by Gupta et al., (2017). Studies have shown that in developed countries, ordinary screening with papanicolaou smear (Pap smear) has successfully reduce the chances of developing invasive cervical cancer through early detection of pre-cancerous cells changes. In developing Countries, only 5% of women are eligible for cytology

screening due to unavailability of resources. Therefore, VIA-VILI screening methods remains the affordable option for low-middle-income Countries (Ntekim, 2012).

In visual inspection screening procedure which is the commonest screening procedure in Kenya, a 5% acetic acid (VIA) is applied onto the surface of the cervix is believed to cause reversible coagulation, or condensation of the cellular proteins. It is also known to cause enlargement of the epithelial and columnar abnormal cells. When acetic acid is applied, there is change of color of the pink epithelial and red columnar cells to acetowhite stromal cells as a result of coagulation of the proteins. The changes in color of the squamocolumnar junction, determines the presence of cervical intra-epithelial neoplasia which is restricted to the transformation zone while in invasive cancer state, the acetowhitening is often involves the entire cervix and this according to World Health Organization et al., (2014).

In iodine application (VILI), glycogen containing squamous epithelium takes up the iodine and stains mahogany brown or black. columnar epithelium does not take up iodine and therefore remains unstained though it may look slightly discolored due to the thin layer of iodine. When there is inflammation of the squamous epithelium, the transformation zone does not stain with iodine but remains colorless with a black background. The areas that do not stain show that they lack glycogen and appear as thick as mustard-yellow. This is an indication of cervical intraepithelial neoplasia and invasive cancer presence (Weltgesundheitsorganisation, 2006).

Visual inspection by use of acetic acid for early detection of cervical pre-cancerous cells was introduced in Africa back in 2005 and six African Countries were picked for demonstration of the project. The findings of the study showed high sensitivity of the procedure in detecting precancerous states of cervical epithelial cells. The method was also appraised because of its affordability, non-invasive and can be done in low level health facilities like a health-center. The method of screening also provides immediate results which do not require laboratory support and those suspected cases can be directed immediately for further investigation and treatment (Gupta et al., 2017).

. In Kenya, the targeted population for screening are women aged 25-49 years because they are highly at risk of developing cervical cancer during this period of their reproductive age. However, women at the age of 50-65 years still fall in the target population. Although they are at their menopausal age, it does not place them out of the hook of developing cervical cancer. Cervical

cancer screening is done every three years for women who have tested negative for HIV and annually for HIV positive women (MoH *National Cancer Screening Guideline*, 2019). A descriptive study done in Kitui Central Kenya showed the visual inspection method has been in practice since 2009 but still the coverage of screening is low, showing the general picture of the country at large. The study called on the review of prevention and treatment programs to identify gaps in utilization of screening services according to Mwangi et al., (2017).

#### **2.4 Overview of cervical cancer in developing Countries**

All countries are affected globally but the incidence is higher in low-middle-income countries. Studies have shown that incidence rates are varying from 75 per 100 000 women in countries with the highest risk to less than 10 per 100 000 women in countries with the lowest risk. Low-middle-income countries have experienced nearly 60% of the 311 000 deaths reported in 2018 worldwide, and this is more than twice the proportion in many high-income countries, where it is as low as 30% of the 311 000 deaths as highlighted by Simelela, (2021).

High-income Countries have well established screening practice standards and guidelines targeting women at risk of developing cervical cancer. In the United States of America, a study done to assess the challenges and opportunities to improve cervical cancer screening, found out that the use of the patient-Centered Medical-Home-transformation model was yielding positive results because it was culturally sensitive (Moshkovich et al., 2015). In contrast, Low-middle-income Countries, screening is at lower rate due to numerous count of barriers and a study done on Universal cervical cancer control through health lens, emphasizes the strengthening of the six building blocks of health system to achieve the World Health Organization's ambition to eliminate cancer of the cervix globally as illustrated by Pehudoff et al., (2020). Cervical cancer burden in developing countries has become an interdisciplinary topic and a study carried out in Rwanda East Africa showed that the lack of screening and prevention for cervical cancer in developing countries has led to an ambiguous challenge in reducing death rates related to cervical cancer. The challenge is brought about by multiple barriers which include lack of quality assured infrastructure, inadequate trained health workforce and other clients associated barriers like culture and socio status (Ruzigana et al., 2017).

A study survey in Kenya by Gatumo et al., (2018), at Isiolo and Tharaka Nithi Counties found that there is need to increase cervical cancer knowledge among women in order to increase the



utilization of screening services especially the less literate women in the rural and hard to reach areas in Kenya. Lack of knowledge has contributed to few women even adhering to subsequent scheduled screening as indicated by Morema et al., (2014). A similar study at Thika level 5 hospital- Kenya found out that there was need to incorporate an SMS mobile phone text message to the strategic plans for cervical cancer screening programs to remind women of their subsequent cervical cancer screening schedules thus enhancing utilization of screening services (Wanyoro & Kabiru, 2019).

## **2.5 Specific review of the study Variables**

### **2.5.1 Bio-socio-cultural determinants of cervical cancer screening service utilization**

Airhihenbuwa & Iwelunmor (2013), stated that cultural practices and beliefs is a central determinant in prevention and management of non-communicable diseases like cervical cancer. Ampofo et al., (2020), indicated that there is a marked high incidence of cervical cancer in Sub-Saharan Africa which was reasonably explained by societal factors related to sexual behaviors and high estimates of sexually transmitted infections such as HIV and HPV without adequate compensatory cytological screening.

Among women of reproductive age 25-49yrs studied in Botswana, many hold untrue misconceptions of the service and the confidentiality of one's results. Majority feared to utilize the service due to the belief that one will be forced to do a hysterectomy if found with signs of cervical cancer, hence life barrenness. Despite women having some ideas of cervical cancer screening, misconception and cultural beliefs hinder them from utilizing the services as required (Major et al., 2018). A similar study by Williams, (2014), in Ghana showed that many participants had a negative perception that the disease will eventually result in death. Other participants were not aware of cervical cancer screening tests and their responses revealed that they would go for the screening service if they knew more about the disease and the screening procedure. A study done also in Ethiopia, clearly demonstrated the influence of socio-cultural practices on cervical cancer screening services utilization. Early marriages below 16years were at 55.9%, while those below 21years were at 92.3%. The study also showed 47% of them had more than one sexual partners, 31.3% of them were women with high parity and 46.1% of them are in polygamous family (Tadesse, 2015).

In Kenya, a study done in Embu County by Kibicho, (2013.), illustrated the association of culture and cervical cancer screening. It showed that women had a negative attitude towards the screening procedure which involves exposing one's private parts to healthcare providers. This is said to be taboo in most communities in the Country and privacy of genital exposure should only be between couples. The study revealed that the screening procedure is embarrassing and causes discomfort thus becoming a barrier in taking up the services. On the other hand, Kimani et al., (2019) study in Webuye- Western Kenya, revealed that religious beliefs had an influence on the uptake of cervical cancer screening. Among the respondents, 45.5% of them believed that cervical cancer is a curse and it has no cure. At the same time 62.4% of them said none of their spiritual leaders encouraged them to seek screening services for cervical cancer.

### **2.5.2 Level of knowledge on cervical cancer screening determining utilization**

Although awareness of cervical cancer screening is at the peak in developed countries, developing countries are still demonstrating infancy on the level of knowledge on cervical cancer and its prevention and detection measures. A study done in Texas USA, showed that 70% of women were aware of risk factors to cervical cancer and more than three quarters of them (77.4%) would seek screening services for early detection (Akinlotan et al., 2017). Knowledge barrier has been evident and a study carried out in one of Sub-Saharan Africa countries Zimbabwe, showed that the majority of women had information on prevention measures for cervical cancer but utilization of cervical cancer screening is still sub-optimal (Tapera et al., 2019).

In East Africa, a study by Mwaka et al., (2016), in Northern Uganda showed that though most women were aware of cervical cancer risk factors, the study revealed culturally perceived information, for example 30% of the women said cervical cancer is not curable even when diagnosed earlier. This misconception could negatively influence cervical cancer screening service utilization. Similarly, a study done in Ethiopia to assess the of level knowledge on cervical cancer and screening revealed that 216(37.0%) of the participants could not categorize which women are at risk of cervical cancer and 209(35.8%) of these participants had no information about symptoms of cervical cancer, therefore revealing low level of knowledge on cervical cancer and screening (Chellapandian et al., 2021).

A multilevel study done in Kenya by Kangmennaang et al., (2017), demonstrated that a significant number of women (24%) have never heard of cervical cancer and its screening. The study found

out that the level of knowledge on cervical cancer and screening is determined by sociocultural, economical and healthcare system factors and therefore a need to review policies on cervical cancer screening to enhance the utilization of this service.

### **2. 5.3 Economic determinants of cervical cancer screening service utilization.**

Globally, it has been observed that women of low-social status are at risk of developing cervical cancer and this disease has been referred to as a condition of the poor women (Denny et al., 2006). Studies have demonstrated that women from higher socio-economic status are likely to utilize cervical cancer screening services. Women who are educated and with health cover insurance have been observed to have a tendency of utilizing screening programs (Ali et al., 2019).

In Spain Europe, a study done to assess income-inequality on cervical cancer screening utilization, demonstrated that unstable socio-economic status determined the uptake of the screening services. This study recommended the Country to implement population-based- screening programs which differ from one region to the other and this is according to (Merino-Ventosa & Urbanos-Garrido, 2018). Also a study done in Sweden agrees to this fact that socio-economic factors determine women participation in screening programs due to the limited fee charged for the service in socio-economic deprived regions in Sweden.

Vhuromu et al., (2018), carried out a study in Vhembe District South Africa and the findings showed that the rugged terrains mountainous topography of South Africa was a big challenge in accessing healthcare screening services and the respondents gave reports of distance and transportation challenges to the health facilities which are away from the people. The results revealed that the high rates of invasive cervical cancer in Sub-Saharan Africa, can be attributed to in-accessible health facilities which offer cervical cancer screening services. A study findings done in Benin and Zimbabwe highlighted that the cost of cervical cancer screening was reported to be high mostly in urban settings. Women in this two countries who were found to be engaged in professional, technical and managerial jobs had information on cervical cancer and this was attributed to them utilizing screening services (Barrow et al., 2020).

Ampofo et al., (2020), indicated that in Ghana, women who are unemployed were unlikely to participate in cervical cancer screening compared to those who were employed. In Buea Cameroon, a study by Fru et al., (2020), indicated that the poor habitat of slums and rural areas demonstrated the poverty status among the Cameroonians and therefore uptake of health

preventive measures is less of concern as these people focus on how to survive on a daily basis. In agreement with this study is a similar study done in Ethiopia which illustrated that screening services utilization was two times higher among employed women than non-employed simply because these women are educated and they may get invited to undertake the service by coworkers in the place of work. Their high socio-economic status enabled them to overcome the constraint of resources to attend their health needs according to Belay et al., (2020).

In Kenya, a study done in Kitui Central, revealed that there was an association between level of education and cervical cancer utilization and there was need to strengthen the programs to uphold girl-child education. The study emphasizes that educated people are equally empowered and they don't see their health issues as secondary as emphasized by Mwangi et al., (2017).

#### **2.5.4 Healthcare system determinants of cervical cancer screening services utilization**

The findings of a qualitative descriptive study carried out in Malaysia Asia, revealed that the health system determines the utilization of cervical cancer screening if the barriers related to it are not eliminated. The study identified barriers like the long hours of stay in the facility waiting for cancer screening, inadequate documentation and patient not adhering to follow-up, inadequate resources and health-workforce, lack of educational resources in health facilities, among other barriers. The study recommended the need for setting sustainable screening implementation strategies that aim at resolving majorly health system related barriers (Yong et al., 2018).

In Northern Africa, a study done in Libya, showed that healthcare related barriers to cervical cancer screening were a concern. The study revealed that healthcare providers lack time to discuss with every patient they see about cervical cancer due to long queues waiting to be seen by the same healthcare provider. The inaccessibility to screening test was also identified as a barrier to screening (Pap smear). Inaccessibility was due to shortage of the supplies, the cost of the service and the gender preference of the health worker by the women and these were highlighted in a study by Hweissa, (2017). In Malawi, Africa, a study found that the distribution of health workers who got formally trained on cervical cancer screening was not fairly done across the country's health facilities. Also evaluation through supervision of their performance efficiency was found out to be insufficient. The findings also revealed challenges with supplies adequacy with finance resources allocation being the major problem to supply shortages in the country as indicated by Maseko et al., (2015).

In Tanzania East Africa, a study by Mugassa and Frumence, (2019), visualized that the Tanzanian Government put more emphasis on curative than preventive services in strategic planning and allocation of resources. The study also brought up the practice of third world countries depending on donors influenced the uptake of cervical cancer screening sustainability. The study findings again showed that there was poor coordination of the information in the health system from national level to lower levels of the government functions. Also there was a finding on inadequate trained health personnel to implement the screening services at lower health facilities levels therefore burdening the national health facility. The study also revealed that awareness creation among the target population is dissatisfying.

In Kenya, a study done in Webuye western Kenya, showed that 84.8% of the participants did not have a discussion with the healthcare worker nor did the healthcare worker share information on cervical cancer with the women as indicated by Kimani et al., (2019). A similar study at Mama Lucy Kibaki Hospital Kenya revealed the aspect of cervical cancer screening motivational factors and 82% of the participants did agree that good attitudes of healthcare workers may enhance their interest in cervical cancer screening as demonstrated by Mbaka et al., (2018).

## **2.6. Conceptual framework**

Conceptual framework shows the study variables where independent variables influence the utilization of cervical cancer screening. These independent variables are bio-sociocultural, socio-economic and healthcare system factors. The dependent variable is the cervical cancer services utilization at Kitengela Sub-county Hospital. The diagram below represents the schematic relationship between independent and dependent variables

**Independent variables**

**Dependent variables**

**Bio-sociocultural Factors**

- Age at marriage
- Marital status (polygamous or not)
- Parity
- Religion/ beliefs
- Level of education

**Economic factors**

- Occupation
- Income level
- Distance/accessibility
- Means of transport
- Cost of screening

**Healthcare system factors**

- Supplies shortage
- Gender preference
- Health workforce
- Communication
- Waiting time

**Level of knowledge on cervical cancer screening**

- Information on cervical cancers, source of information, knowledge on risk factors, importance of screening

**Cervical cancer screening service utilization**

**Outcome variables**

- Increased uptake of cervical cancer screening
- Improved health of women
- Reduced burden on the treatment of cervical cancer

Figure 1

Figure 1: Conceptual framework

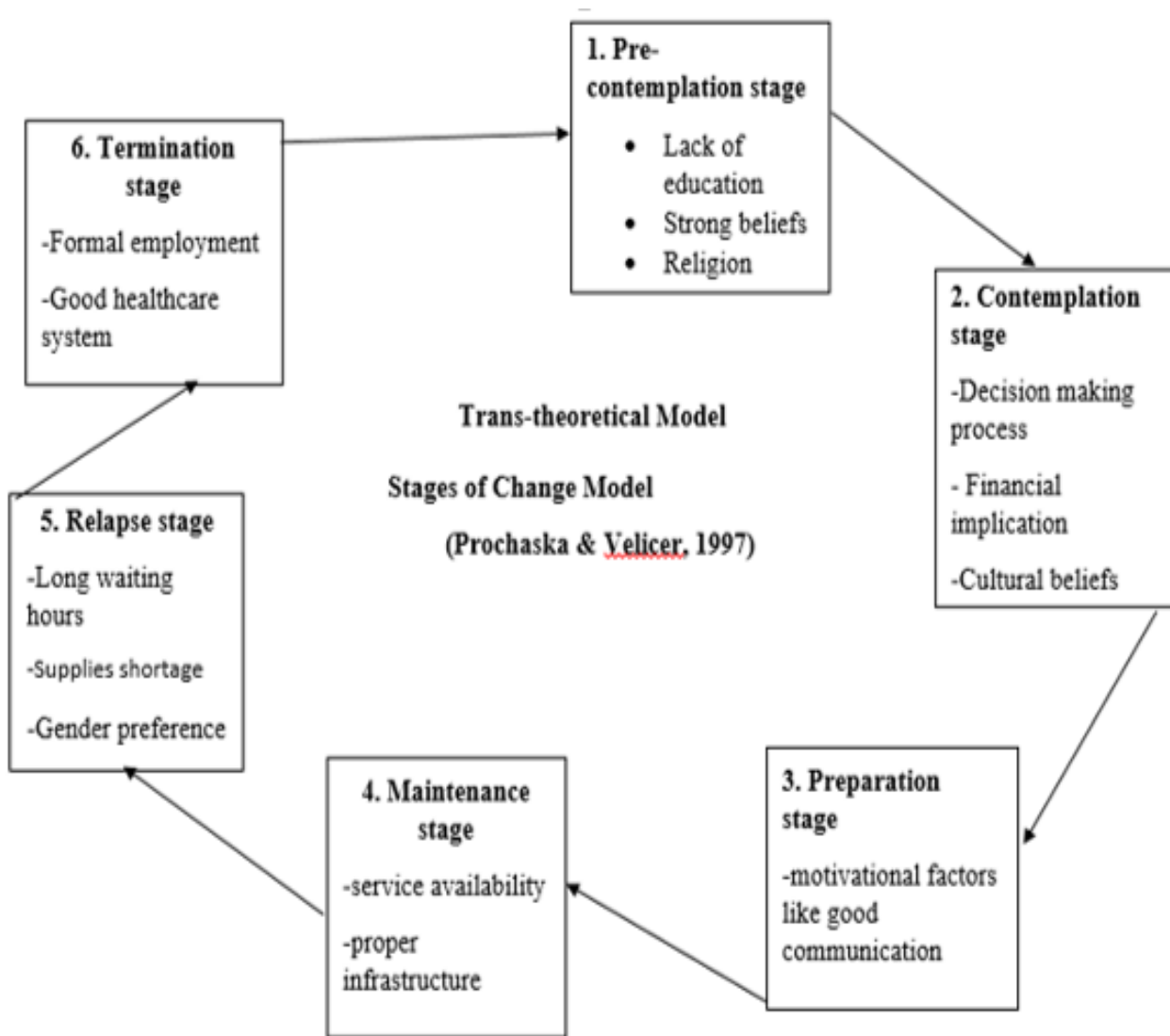


Figure 2: Theoretical model

## **2.7. Application of Trans-theoretical framework in cervical cancer screening**

This theory is significantly useful in understanding individuals' behavioral change at different stages of behavior change over time (Liu et al., 2018). Individual decision making to utilize health services is said to be complex (Tung et al., 2016). The researcher adopted the theory to guide in addressing the identified barriers to utilization of cervical cancer screening services through behavior change over time.

Pre-contemplation is the stage where people are unwilling to change for a better tomorrow (Prochaska & Velicer, 1997). The people might be in this stage because they are not aware of the risk associated with their behavior. They lack interest and are not ready for health promotion. In this case of cervical cancer screening, the theory was applicable in identifying those women who were not aware of screening, and those who were hindered to utilize the services by cultural practices, religion or lack of education.

Contemplation is the construct in which people are intending to change. They know the advantages and disadvantages of behavior change. They take time to take up the new behavior due to a trial to get balance between the benefits and risks of the change (Prochaska & Velicer, 1997). In this study, the theory guided in identifying those women who were aware of the screening services but they are finding it difficult in making decisions due to values and beliefs held by them, the cost of the service, the delays in health facilities and the impact the findings of the screening will have on them.

Preparation is the third stage in which people are ready to change. These people develop a plan on how to implement the change, such as searching reading materials on the expected change, seeking counselling or talking to their healthcare workers (Prochaska & Velicer, 1997). In this study, the theory was used in identifying those women who are ready to utilize screening services in order to provide them with necessary information on how to access the service. Provision of more information on the importance of the screening services for cervical cancer and how the screening will be performed and by who.

Action is the fourth stage in which people are taking steps to reduce risk by changing their behavior. Behavior change calls on a number of actions and the people are taking part in all actions to reduce risk for disease (Prochaska & Velicer, 1997). In this study the theory guided in



identifying those women who are taking actions to utilize the screening asking for the service, adhering to follow-up, reporting any warning signs and practicing a healthy lifestyle

In the maintenance stage, people work towards prevention of relapse. People believe that the change has benefited them and the behavior is maintained (Prochaska & Velicer, 1997). In this study, the theory helped the researcher in identifying the women who have been consistent in uptake of screening services. The theory guides health facilities in assessing the success of the practice and comes up with strategies of maintaining it without failure.

In the relapse stage, there is breakdown in the change process and the people have gone back to the primary stage of behavior change (Prochaska & Velicer, 1997). This stage guided the researcher in being aware that women may stop using the screening services and return back to initial stages of change due to a number of barriers which may include long waiting hours, cost of the services, lack of time by the healthcare workers, gender preference as well as inadequate trained personnel.

The last is the termination stage where people have no barriers to behavior change. Whatever comes their way, they will not go back to their old unhealthy habits (Prochaska & Velicer, 1997). In this study, the theory guided the researcher in determining women who are motivated to utilize cervical cancer screening services and what motivates them despite other challenges.

## **CHAPTER THREE: MATERIALS AND METHODS**

### **3.0 Introduction**

This chapter introduces the materials and methods used in the study

### **3.1 Study Design**

The researcher adopted cross-sectional descriptive design whereby semi-structured questionnaires was administered by researcher through interviewing patients. This study design was described to provide information on the presence or level of one or more variables under study. It is the best design for measuring occurrence of an event and assessing the needs of the healthcare system (Aggarwal & Ranganathan, 2019). In this study, the design gave snapshot of the existence of factors that determine utilization of cervical cancer screening by women at Kitengela Sub-County Hospital. Majority of Quantitative studies collecting data on risk factors, contributing factors and disease burden, make use of cross-sectional studies.

### **3.2 Study area**

The study was conducted at Kitengela Sub-County Hospital and it was purposely selected given that it is the busiest level 4 hospital in Kajiado County compared to other level 4 hospitals in the County. An average of 381 women attend Maternal Child Health Family planning clinics every month but with a very low rate of screening for cancer of cervix (MOH 711).

Kitengela Sub-county Hospital is Located at Kajiado East (Isinya) Sub-county with a women population of 104, 860 according to Kenya Population and Housing Census (2019) (Kenya National Bureau of Statistics, 2019). It has a maternal child health clinic where data was data collected from respondents who visited the clinic over the period of data collection.

### **3.3 Study population**

The study population consisted of all women aged 25-49 years who attended Maternal Child Health Family planning clinic during the period of study at the facility. A study by Fontham et al., (2020) acknowledges that screening procedures on women below the age of 25 will not be significant because it does not pick cervical intraepithelial neoplastic cells.

### **3.4 Inclusion criteria**

Women aged 25-49 years attending Maternal Child Health family planning clinic during the period of study and have consented to participate in the study were included in the study.

### 3.5 Exclusion criteria

The study excluded women aged 25-49 years who did not consent to participate in the study. Also the study excluded women aged 25-49 years diagnosed with psychological disorders as they may not give reliable responses and those who required emergency medical attention due to an illness while attending the reproductive health family planning clinic.

### 3.6 Sample size determination

The sample size was drawn from women attending Maternal Child Health clinics. The sample size determination was done using the modified formulae by Fisher *et al* (1998). (Mugenda, 1999) , recommends this formula for determining sample sizes in social studies.

$$n = \frac{z^2 p (1-p)}{e^2}$$

$z$  = is the Z value for the corresponding confidence level (i.e. 1.96 for 95% confidence).

$e$  = is the margin of error (i.e., 0.05 =  $\pm$  5%)

$p$  = is the estimated value for the proportion of a sample that have the characteristics of interest

$p$  = 50%

$$n = \frac{1.96^2 \times 0.5 (1-0.5)}{0.05 \times 0.05} = 384$$

The sample size will be adjusted by use of the formula by Yamane (1967) which is recommended for a population below 10,000

$$n = \frac{N}{1 + N(e)^2}$$

Where

$n$  = is the required sample size

$N$  = is the population size

$e$  = is the level of desired precision. At 95% confidence interval, the desired precision ( $e$ ) is 0.05

$$n = \frac{384}{1 + 384 (0.05)^2} = 194.38$$

The study therefore used a sample of 194 women of reproductive age between 25-49 years.

### **3.7 Sampling method and recruitment**

A total of 194 women were selected and systematic sampling was used to recruit respondents in the study. Questionnaires were administered after the respondents who have consented, have already been attended to. The researcher did not interfere with service provision and the respondent was informed that the study questions will take a few minutes of her time before exiting the facility. The sampling interval was as follows

$$(k) = \frac{762}{194} = 3.927 = 4$$

The first participant was chosen randomly between 1 and 4 and subsequent respondents were chosen by adding the sampling interval of 4 to the chosen number earlier. The researcher selected the sample according to the queue flow.

### **3.8 Data collection tools and procedures**

#### **3.8.1 Data collection tool**

A semi-structured researcher administered questionnaire was used to collect data. The researcher developed the questionnaire and the questions were organized into section I, II, III and IV containing both closed and open ended questions. Each of the four sections outlined bio-sociocultural factors, level of knowledge, economical and healthcare factors influencing the utilization of cervical cancer screening among women aged 25-49 years attending Kitengela Sub-County Hospital. The questionnaires was written in both English and Kiswahili for those who were not be able to understand English. Most Kitengela residents did understood either of the two languages. The data collection took a period of three weeks.

#### **3.8.2 Pre-testing of study tools**

The questionnaire was pretested at GK prison health facility to assess its suitability to collect the information intended to and its completeness. The facility was noted as the next largest public facility in Kitengela with the same socio-demographic characteristics as Kitengela Sub-county hospital. The facility also offers similar FP and screening services as the facility of study. Pre-testing was done by use of approximately 10% of the sample size. The 10% pre-test results with any unclear question that were observed, were restated in line with objectives before the actual study data collection. Raw data from the tool was subjected to a reliability analysis from which Cronbach's co-efficient alpha was systematically and consistently computed. Cronbach's alpha

Coefficient level of **0.7** reliability was accepted. The researcher sought for permission from the County of Kajiado department of health and the facility In-charge before carrying out the pre-testing exercise.

### **3.8.3 Data collection procedures**

All Participants who met the inclusion criteria were informed about the study and its purpose, both verbal and written informed consent were obtained from the participants before participating in the study. All Covid 19 preventive and control measures were followed as outlined below. The researcher sought for permission from the Nurse In-charge of the FP clinic and requested for allocation of a room to engage women after service provision. The study tool was administered by already trained research assistants to participants recruited and signed an informed consent. Participant anonymity was ensured by giving questionnaires unique numbers which only the researcher understood their meaning hence ensuring participants' confidentiality. The data was collected daily Monday to Friday throughout the study period in order to capture all the participants. The research assistants were closely monitored and supported to ensure adherence to the stipulated procedures for data collection and that quality data is collected. After completing the questionnaire, it was carefully checked for completeness before releasing the respondent.

### **3.8.4 Covid-19 Prevention/Safety Measures**

To safeguard the study participants from Covid-19 the researcher ensured that the questionnaires were administered in a well-ventilated and spacious room, social/physical distance of one and a half meters was observed to prevent interpersonal transmission. All the participants put on a face mask all the time during the in-depth interview session. The environmental cleaning and disinfection was maintained by regularly cleaning the surfaces and floors with sodium hypochloride 1:5 solution. Before the participants were ushered into the room, they were screened for any symptoms of Covid-19 such as fever, nasal congestion, rhinorrhea, sore throat or cough. The researcher also ensured all the participants were provided a place with soap and running water for washing hands or an alcohol-based hand sanitizer was used.

A health talk was given to all participants on respiratory hygiene/cough etiquette, restricting movement within the institution and restricting visitors to the hospital. The proper personal protective equipment were worn all the time during the data collection period. The researcher underwent screening for Covid-19 daily to rule out infection while working within the hospital...

### **3.8.5 Quality Assurance**

Recruited research assistants were trained on data collecting tool administration. The research assistants were nurses with a bachelor's degree as a level of education. They were trained on ethical consideration that only consenting participants were to be involved in the study. They were updated on Covid 19 preventive and control measures to ensure adherence to the laid protocols on Coronavirus transmission prevention. Content validity of the questionnaire was tested by the supervisor who identified items that were not adequate and checked for completeness. Reliability was tested as outlined well in pre-testing of the tool section.

### **3.9. Data management, Analysis and presentation**

The data collected was checked every day for completeness by reading and re-reading the data collected before a participant is released. The data was categorized and coded for appropriate computer entry. Data cleaning was done to ensure that there are no outliers, missing variables or improper entries which could have possibly skew the results. The data was then be imported into the statistical package for Social Sciences (SPSS) version 24 for analysis. Descriptive statistics such as means, percentages and standard deviations was used to describe sample characteristics and was presented in frequency tables. Relevant inferential statistics procedures was used to test the hypothesis. Analysis of level of knowledge was done by use of the sum score of each outcome. The scores were assigned “1” as an acceptable score or “0” as an unacceptable or incorrect score. The scores were transformed into percentage scores. The items scored were summed up and total scores were calculated and categorized as either high, moderate or low level of knowledge using the Modified Bloom's cut off points. A similar study in Southern Ethiopia, evaluated cervical cancer screening level of knowledge, using Modified Bloom's cut off points and categorized knowledge levels as high (80-100%), moderate (50-79%) and low level of knowledge below (50%) (Tekle et al., 2020). The inferential statistics used in data analysis were T-test, Pearson moment correlation coefficient and logistics regression, to test the relationship between independent and dependent variables identified.

### **3.10. Ethical considerations**

Review of the protocols, clearance and approval to conduct the study were sought by presenting the study proposal to the Kenyatta National Hospital-University of Nairobi (KNH-UoN) ethics review board, the researcher sought permission to carry out the study from the University of Nairobi, School of Nursing. Similarly the researcher sought permission to access the study

participants from Kajiado County department of Health through medical superintendent, Kitengela Sub-County Hospital. The researcher also sought permission to carry out pre-testing of research tools through the County department of Health and the facility In-charge. A voluntary informed consent form was given to the respondents by the researcher before participation. Participants were briefed on their rights and the expected benefits of the study.

There was no coercion or incentives for participants and the identity of participants was not indicated anywhere on the interview guide. The principle of participants' anonymity was maintained by ensuring that participants' obvious details such as name, phone number and ID were omitted in all the researcher administered questionnaires. All questionnaires were checked for completeness and allocated serial codes and stored in a cupboard under lock and the key. Information in the computer was stored under a password. The participants were informed of the potential benefits of the study and risk before they participate in the study. The contact of the supervisor was made available on the consent form just in case the participants feel that their rights were impeded.

The participants were allowed to ask questions and answers were provided to their satisfaction. The researcher asked the participants' questions on the information provided to ascertain their understanding of the study before they sign the consent forms. The participants were assured that the researcher had no conflict of interest regarding this study.

The participants were also assured of the right to withdraw from the research process, the moment they felt they were pressured or coerced in any way. Respect was assured to the participants by giving due diligence to a person's judgment and ensuring that the participant was free to choose without interference.

## **CHAPTER FOUR: RESULTS**

### **4.0 Introduction.**

This chapter gives a detailed presentation of the data analysis, of the findings on the determinants of cervical cancer screening service utilization among women aged 25-49 years attending Kitengela sub-County hospital. The data collected was analyzed and presented in descriptive tables, pie charts and graphs.

### **4.1 Characteristics of study respondents.**

A total of 194 women of reproductive age between 25-49 years, consented to be interviewed out of the 210 women approached. The response was considered adequate for generalization of findings. The study sought to find out the bio-sociocultural factors of the respondents. This included the residence, age, marital status, religion, number of children and education level.

### **4.2. Socio-demographic characteristics.**

Table 4.1 shows that the majority of the respondents (79.9%) resided in Kitengela where else only one respondent (0.5%) came from Rongai and one (0.5%) from Sabaki. Age group 26-30 Years had the highest number of participants at 42.3%, while 1.0% of the respondents had an age greater than 45 years. Majority (82.5%) of the women were married and one respondent being widowed and with most of them 159(82%) of them in a monogamy form of marriage.

All the respondents were Christians in regards to the religion. The participants' number of children ranged from 0 to 5 with the largest percentage (30.4%) having 2 children and 2.6% of the respondents had no children yet. On the other hand, the educational level varied from primary education to tertiary level of education as shown in Table 4.1. Most of the respondents (42.8%) had a secondary education level of education attainment and 24.2% having tertiary level of education.



**Table 4.1 Socio-demographic characteristics of study participants (N = 194)**

<b>Variable</b>	<b>Frequency</b>	<b>Percent (%)</b>
<b>N = 194</b>		
<b>Residence</b>		
Athi River	16	8.2
Kitengela	155	79.9
Mlolongo	14	7.2
Rongai	1	0.5
Sabaki	1	0.5
Syokimau	7	3.6
<b>Age Category (Years)</b>		
20-25	19	9.8
26-30	82	42.3
31-35	54	27.8
36-40	29	14.9
41-45	8	4.1
46-50	2	1
<b>Marital Status</b>		
Divorced/Separated	14	7.2
Married	160	82.5
Single	19	9.8
Widowed	1	0.5
<b>Form Of Marriage</b>		
Monogamy	159	90.8
Polygamy	16	9.2
<b>Religion</b>		
Christian	194	100
<b>Number Of Children</b>		
0	5	2.6
1	58	29.9
2	59	30.4
3	43	22.2
4	25	12.9
5	4	2.1
<b>Level Of Education</b>		
Primary	64	33
Secondary	83	42.8
College/Tertiary	47	24.2

### 4.3. Level of knowledge on cervical cancer screening

The study sought to find out the respondents' knowledge about cervical cancer screening service.

#### 4.3.1 The knowledge on cervical cancer screening.

Most of the respondents 166(85.6%) reported to have heard of cervical cancer screening service while the rest 28(14.4%) had not heard of the service. On the other hand, of the total respondents, only 43(22.2%) of the women had been screened before with their ages at the screening time differing as shown in Table 4.2

**Table 4.2 knowledge on cervical cancer screening**

<b>N = 194</b>		
<b>Variable</b>	<b>Frequency</b>	<b>Percent (%)</b>
<b>Ever Heard of Cervical Cancer</b>		
No	28	14.4
Yes	166	85.6
<b>Ever Been screened for Cervical Cancer</b>		
No	151	77.8
Yes	43	22.2
<b>How old were you in the first screening</b>		
25-35 Years	32	16.5
36-45 Years	11	5.7

#### 4.3.2 Source of information on cervical cancer

Of the total respondents, slightly more than half, 104 (53.6%) had heard of cervical cancer screening from healthcare workers and least 9 (4.6%) got the information from family and friends while 28(14.4%) of them had never heard of cervical cancer screening service. Figure 1.3 below shows the details

### Respondents source of information on CCS

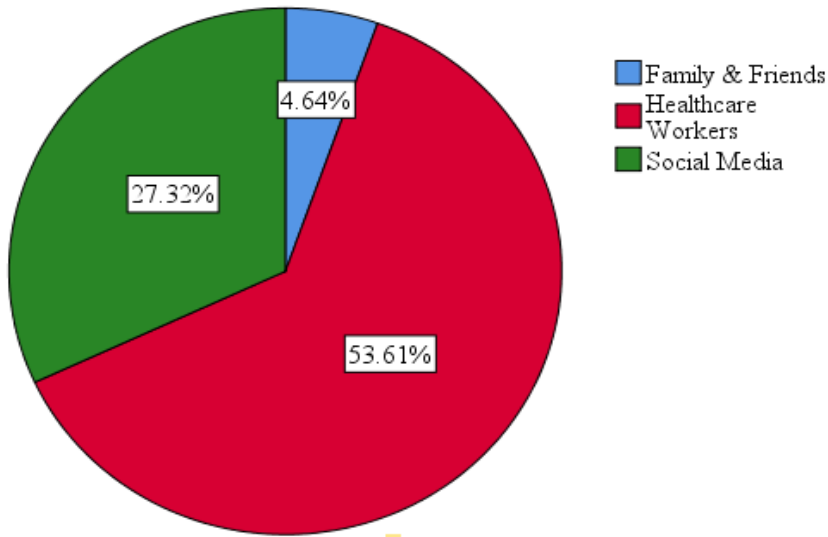


Figure 3 Source of information

#### 4.3.3 Respondent’s Level of Knowledge on cervical cancer screening

Respondents were asked to mention the number of cervical cancer screening methods they knew and majority of the respondents 102 (52.6%), had low knowledge on methods of screening while 58(29.9%) and 6(3.1%) of the respondents were moderately and highly knowledgeable respectively by mention of “one” 58(29.9%) and “two” 6(3.1%) as methods of screening they knew as shown in Table 4.3

**Table 4.3 methods of cervical cancer screening**

Methods Of CCS known	Frequency	Percent (%)
None (Low)	102	52.6
One (Moderate)	58	29.9
Two (High)	6	3.1

Respondents were also asked to mention whether the listed factors were risks to cervical cancer. Most of the respondents, 69(35.6%) had moderate level of knowledge on risk factors to cervical cancer while 63(32%) had low level of knowledge. Only 63 (32.5%) had high level of knowledge on cervical cancer risk factors. See Table 4.4 below.

**Table 4.4 Knowledge on risk factors to cervical cancer**

Level Of Knowledge	Frequency	Percent (%)
Low (1-2)	62	32.0
Moderate (3-4)	69	35.6
High (5-6)	63	32.5
<b>Total</b>	<b>194</b>	<b>100.0</b>

Similarly, the respondents were asked to choose “true or false” on the listed information about cervical cancer and screening. Majority of the respondents (70.1%) were highly informed on cervical cancer screening while 57 (29.4%) were moderately informed. Only 1(0.5%) of the women were misinformed on what cervical cancer and screening is about as shown in Table 4.5

**Table 4.5 Misinformation on cervical cancer screening**

Level of Knowledge	Frequency (N=194)	Percent (%)
Low (0-1)	1	0.5
Moderate (2-3)	57	2
Highly Knowledgeable (4-5)	136	70.1
<b>Total</b>	<b>194</b>	<b>100.0</b>

#### **4.4 Economic Characteristics.**

The study also sought to understand the economic factors of the respondents. A larger percentage of the respondents, 58 (29.9%) were in informal employment for wages followed closely by 53 (27.3%) of them being self-employed, 31(16.0%) of them were in formal employment with monthly salary while 52 (26.8%) of them were unemployed. Majority of them of the employed respondents, 81(41.8%) reported to be earning between Ksh. 5,000 and Ksh.. 10,000 per month while few of them 11(5.7%) earned a monthly income of below Ksh..5, 000 and 50 (25.8%) of them earned well above Ksh. 10,000 monthly incomes. Table 4.6 below illustrates the economic characteristics of the respondents.

On the other hand, the health facility was accessible to the respondents, with most of the respondents means of transport to the facility was by foot 77(39.75%) while few of them 27(13.5%) used other means like private vehicles.

**Table 4.6 Economic factors**

<b>Variable</b>	<b>Frequency</b>	<b>Percent (%)</b>
<b>Occupation</b>		
Formal employment with monthly Salary	31	16.0
Informal employment for wages	58	29.9
Self Employed	53	27.3
Unemployed	52	26.8
<b>Average Monthly Income</b>		
Below 5,000Ksh	11	5.7
Between 5,000 and 10,000Ksh	81	41.8
above 10,000Ksh	50	25.8
Unemployed	52	26.8
<b>Means of Transport</b>		
A motorcycle	64	33.0
I walk because it is near	77	39.7
Taxi	26	13.4
Others	27	13.9

#### **4.5 Health Care factors related to cervical cancer screening utilization**

The table 4.8 below illustrate the analysis of healthcare related factors to cervical cancer screening service utilization. Majority of the respondent 149 (76.8%), did not get screened for cervical cancer during the period of data collection and those who didn't get screened during the period were asked whether they agreed to the listed reasons associated with missed opportunity. Most of them identified two reasons to explain why they missed screening. About half, 76 (51%) of them said they didn't had symptoms warranting screening while 74 (50%) of them said they that it took most of their time to wait to be screened. The least, 30 (20%) of them mentioned that the healthcare worker told them they didn't fit for screening that day.

When respondents were asked to choose who they are comfortable discussing issues of reproductive system with, slightly more than half, 105 (54.1) of them said they can open up to any healthcare worker while few 3 (1.5%) said they can discuss with their spouse as shown in the table 4.7 below

**Table 4.7 Healthcare factors related to cervical cancer screening utilization**

<b>Did You Get Screened Today</b>	<b>Frequency</b>	<b>Percent (%)</b>
No	149	76.8
Yes	45	23.2

<b>What Made You Not Screened Today</b>	<b>Yes</b>	<b>Percent (%)</b>
My religion does not allow	30	20%
The health-worker said I don't fit to be screened	10	7%
The testing resources were out of stock	35	23%
It takes time to wait to be screened	74	50%
The healthcare worker care has to be a female	27	18%
I felt it's shameful to expose my private parts	54	36%
I don't have any symptoms of cervical cancer disease	76	51%
The procedure is said to be painful	56	38%

**Who do you find comfortable discussing problems related to the female genital tract?**

<b>Person</b>	<b>Frequency</b>	<b>Percent (%)</b>
Any health care-worker	105	54.1
Female health care-worker	77	39.7
Male health-worker	9	4.6
Sexual partner/Spouse	3	1.5

**4.6 Health facility preparedness**

Respondents were asked to whether the health facility had put all the measures required for screening service and most of them 130 (67.0%) said yes while 33.0% of them said no. Those who didn't agree with the facility preparedness were asked to choose reasons from listed variables on why they didn't agree and majority of them 52 (81%) said the reason was that there are few number health workers working in FP clinic therefore long waiting hours as shown in Figure 1.4 and Table 4.8

**Respondents opinion on whether the Health care facility has put enough infrastructure for CCS.**

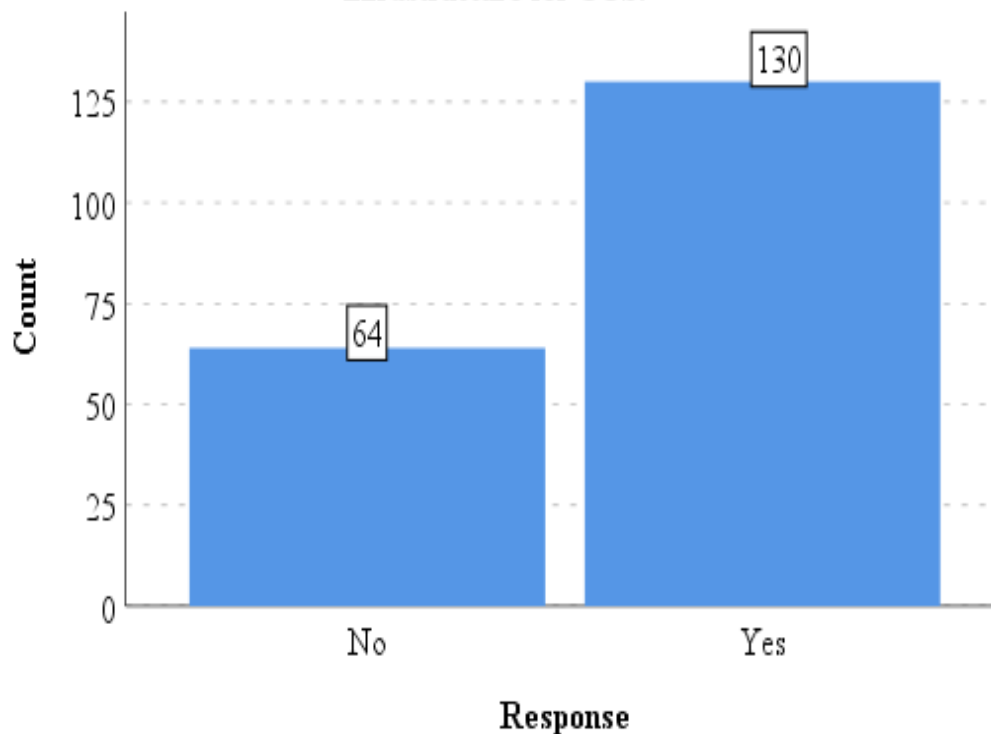


Figure 4: Healthcare facility preparedness

**Table 4.8 Healthcare facility preparedness**

**What makes you believe that the health facility has not put all the requirements for cervical cancer screening in place?**

Reason	Yes	Percent (%)
Few health-workers working in FP clinic therefore long waiting time	52	81%
Most of the time the resources for screening are out of stock	22	34%
The room for screening is one while women are many	30	47%
CCS is only done for those who need IUCD as an FP method	16	25%

**4.6.1 Bio-socio-cultural factors influencing utilization of cervical cancer screening.**

The first objective was to understand the bio-socio-cultural factors influencing cervical cancer screening. The researcher applied a bivariate logistic regression to model the age category and number of children as the explanatory variables while the dependent variable was taken as if the respondent had had cancer screening before. Regression analysis showed (p value = 0.000, B=0.731) on age category variable indicating a statistical significant relationship with cervical

cancer screening uptake. However, the number of children variable gave (p value = 0.174, B=0.253) which depicted that it was not statistically significant to explain the cervical cancer screening service utilization. The correlation analysis indicated that the more the number of children a woman had, the more likelihood they had of getting a cervical cancer screening (B=0.253). On the other hand, the age category had a correlation coefficient of (B=0.731) after correlation analysis indicating that the older a woman gets, the higher likelihood of them getting a cervical cancer screening service. See the table 4.9 below.

**Table 4.9 relationship between bio-sociocultural factors and Utilization of cervical cancer screening**

Variables in the Equation		B	S.E.	Wald	Sig.	Exp(B)
Step 1 <sup>a</sup>	No_Of_Children	0.253	0.186	1.850	0.174	1.288
	Age category	0.731	0.205	12.693	0.000	2.077
	Constant	-3.964	0.621	40.721	0.000	0.019

*\*Significance value (p < 0.05)*

#### **4.6.2 Level of knowledge influence on utilization of cervical cancer screening service.**

The researcher sought to know whether the level of knowledge influence the cervical cancer screening utilization. While using a bivariate logistic regression model to find the significance of the relationship, the researcher found out that the level of knowledge influenced the utilization of cervical cancer screening service. The regression analysis showed significant relationship (p value = 0.000, B=0.835), depicting that the level of knowledge was statistically significant to explain the utilization of cervical cancer screening services as shown in Table 4.10

**Table 4.10 Relationship between the levels of knowledge on risk factors to cervical cancer**

Variables in the Equation		B	S.E.	Wald	Sig.	Exp(B)
Step 1 <sup>a</sup>	Level of knowledge	0.835	0.240	12.164	0.000	2.306
	Constant	-3.054	0.578	27.942	0.000	0.047

*\*Significance Value p < 0.05*

Moreover, the study revealed that awareness on misinformation about cervical cancer screening, influenced the utilization of cervical cancer screening service. A bivariate logistic regression showed significant relationship (p value = 0.001, B=2.020) showing that that the level of knowledge had a statistical significance on the utilization of cervical cancer screening and those



women who were well informed were two times more likely to utilize the screening service, as shown in Table 4.11

**Table 4.11 relationship between misinformation on cervical cancer screening and utilization of cervical cancer screening service**

	Variables in the Equation	B	S.E.	Wald	Sig.	Exp(B)
Step 1 <sup>a</sup>	Level of knowledge	2.020	0.620	10.603	0.001	7.541
	Constant	-6.936	1.813	14.629	0.000	0.001

\*Significance value  $p < 0.05$

#### 4.6.3 Economic factors influencing utilization of cervical cancer screening.

On the third objective, the researcher sought to know whether there are some economic factors that determines utilization of cervical cancer screening service. The independent variables considered in the logistic regression model were: the average monthly income, level of education, respondents' perception on the cost of cervical cancer screening and the knowledge on whether they knew the cervical cancer screening service was free. The Table 4.12 below shows the analysis the mentioned variables.

**Table 4.12 relationship between economic factors and utilization of cervical cancer screening**

	Variables in the Equation	B	S.E.	Wald	Sig.	Exp(B)
Step 1 <sup>a</sup>	Level_of_Education	0.230	0.249	0.850	0.356	1.258
	Average_Monthly_Income	-0.096	0.204	0.221	0.638	0.909
	Is_The_Cost_of_CCS_High	-0.036	0.417	0.008	0.931	0.964
	Do_you_Know_that_CCS_Is_Free	1.982	0.657	9.091	0.003	7.255
	Constant	-3.044	0.938	10.527	0.001	0.048

\* *Significance Value with  $p < 0.05$*

Upon doing the regression analysis, only the knowledge on whether the respondents knew that cervical cancer screening service was free, was significant with (p value = 0.003, B= 1.982). The analysis indicated that those who knew that the cervical cancer screening service was free had a 1.982 times more likelihood to utilize the service than those who didn't know that cervical cancer screening service was free. The other variables including the average monthly income of the respondents were not significant hence can't explain utilization of cervical cancer screening service.

#### **4.7. Hypothesis testing**

The study adopted an alternative hypothesis. Based on the significant p-values on some bio-socio-cultural, economic factors and significant p value on the level of knowledge. The study therefore concluded that there are existing bio-socio-cultural, knowledge, economic and healthcare system determinants of cervical cancer screening service utilization among women attending Kitengela Sub-County Hospital. As such the null hypothesis was rejected.

## **CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS**

### **5.0 Introduction**

This chapter presents summary of the findings, discussion, conclusion and recommendations from the study.

### **5.1 Summary of the Findings**

The study was carried out to determine factors that influenced the utilization of cervical cancer screening service among women aged 25-49 attending Kitengela Sub-County Hospital. Independent variables studied included Bio-sociocultural factors, level of knowledge, economic factors and healthcare factors associated to utilization of cervical cancer screening as the dependent variable. The overall utilization of cervical screening service, is seen to be influenced by the factors under study with only 43(22.2%) of women having utilized the service before the study. Despite high turnout of women seeking family planning services at the facility, missed opportunity for cervical cancer screening is prevalent in this study. The study showed that awareness of cervical cancer screening was high with, 166 (85.6%) women reporting that they have heard of cervical cancer screening, unfortunately this does not reflect the utilization of the service. Despite high level of knowledge and awareness, 136 (70.1%) on risk factors associated to cervical cancer, utilization of the service remains low. The study revealed an association of age and cervical cancer screening utilization, as the woman gets older the likelihood of utilizing the service is higher compared to young age ( $p < 0.000$ ). Number of children a woman has doesn't inform her decision to utilize the service. All women were Christian by religion and the study showed that, 30(20%) of the women mention that their religion does not support utilization of cervical screening

All the respondents have attained a certain level of education with more a third of them, 83(42.8%) having reached secondary level and therefore this has added to their high level of knowledge on cervical cancer screening. Although majority of the women are income earners, there is no relationship between utilization of cervical cancer screening service and income. The service is offered at a free cost and those who knew that the screening was free, were 1.982 times more likely to utilize the service than those who didn't know that cervical cancer screening service was cost free. The study results showed that socio-cultural, level of knowledge and healthcare related factor have influenced the utilization of cervical cancer screening service the most.

## **5.2 Discussion.**

### **5.2.1 Cervical cancer Screening Service Utilization**

In spite of available methods for early detection and elimination of cervical cancer, screening for precancerous cells remains at a lower rate in Kenya. A satisfactory number of studies done in Sub-Saharan Africa and within the Country have reported similar findings of low cervical cancer screening service utilization. Evidence from these studies findings related the suboptimal utilization to myriad factors. This study sought to determine the utilization of cervical cancer screening among women aged 25-49 years attending Kitengela Sub-County Hospital. A total of 194 women were interviewed, with 85.6% of the respondents reporting to have heard about cervical cancer screening in the past. However, only 22.2% report to have utilized the service. A similar study done at Jaramogi Oginga Odinga by Morema et al., (2014), showed that only 17.5% of the target population reported to have utilized the screening service which is still below the target of 70% countrywide. Male partner support is inadequate, though majority of the respondent are married. Lack of knowledge on the methods of cervical cancer screening is evident from the study findings with majority of the respondents 102(52.6%) being not informed of the available methods for cervical cancer screening. Negative perception of the screening process is evident as the reasons why women avoid to utilize the service with 54 (36%) of them saying it is shameful to expose my private parts and 56(38%) of them saying the procedure is said to be painful. This agrees with a study in Embu County by Kibicho, (2013).

### **5.2.2 Bio-sociocultural factors determinants of cervical cancer screening service utilization**

The study sought to assess how bio-sociocultural factors influenced the utilization of cervical cancer screening service. The study results indicated that there was a significant relationship (P value =0.000) between age and utilization of cervical cancer screening service. The study results also revealed that the older the woman, the likelihood of them utilizing the screening service. This could be associated to their potential increased awareness of different diseases that affect women including cervical cancer. While this study findings relates with Ng'ang'a et al., (2018) and Barrow et al., (2020) which had similar results, it contrast with a study in Kitui County by Mbaluka, (2019) which highlighted that young women were more likely to utilize cervical cancer screening service and this can be explained by use of social media platforms which is common among younger people in general and high level of education.

This study revealed that though majority of the respondents were married, 3 (1.5%) of them reported to be comfortable discussing their issues related to reproductive system to their sexual partner or spouse, thus partner support is inadequate. The findings agrees with Binka et al., (2019) that found out that male partners had inadequate knowledge on cervical cancer screening hence lack of partner support. Number of children had no statistical significance to the utilization of cervical cancer screening. However, there was a correlation coefficient that the higher the number of children a respondent had, the likelihood to utilize the service and this also relates to the age of the woman.

All the respondents (100%) were Christian by religion and this explains the representation of religion coverage within the study area. Though the study did not reveal an adverse influence of religion on cervical cancer screening utilization, 30 (20 %) of those respondents who didn't get screening at the period of data collection, reported that religion determines their decision to utilize the service. This confirms the findings of Kimani et al., (2019) study which was done in Webuye, that religious beliefs have influenced the utilization of cervical cancer screening services.

Level of education from the study result had no statistical significance relationship with utilization of cervical cancer. But it added the benefit of knowledge on cervical cancer screening service with 85.6% of the respondent reporting to have known about cervical cancer screening thus becoming an enabling factor to utilization of the service. This is in agreement with a study done in Ethiopia by Gameda et al., (2020), that has related awareness and information about cervical cancer screening with education level.

### **5.2.3 Level of knowledge determinant of cervical cancer screening utilization**

Majority of the respondents (85.6%) reported to have heard of cervical cancer screening. However, only 22.2% of them have utilized the service and this is consistent with findings of Tapera et al., (2019) that respondents had information on cervical cancer screening but utilization is sub-optimal. Source of information was mainly from healthcare workers 104(53.6%) and this is contrary to a study by Gatumo et al., (2018) that indicated that information source was mostly family and friends. The study found out that there was a statistical significance (p value= 0.000) between level of knowledge on risk factors and utilization of cervical cancer screening service. These findings agrees as well with Mwaka et al., (2016) study in Uganda.

Similarly, the respondents' level of awareness on misinformation on cervical cancer screening, was found to be (70.1%) highly knowledgeable, compared to (0.5%) less knowledgeable. There was a statistical significance ( $p$  value= 0.001) between level of awareness on misconception and utilization of cervical cancer screening utilization, with those who didn't believe in misconception being 2.020 times more likely to utilize the service. These findings are consistent with Major et al., (2018) study in Botswana which found out that misconception hinder women from utilizing screening services. In spite of remarkable level of knowledge of cervical cancer, screening at Kitengela Sub-County Hospital before the study was found to be 4.7% annually, these findings are not in accordance to WHO recommendation of 70% cervical cancer screening target (Gultekin et al., 2020).

#### **5.2.4 Economic factors determinant of cervical cancer screening utilization**

The findings of the study revealed that most of the respondents were income earners with less than a third, 52(26.8%) of them being unemployed. There was no significant relationship between education level and average monthly income to the utilization of cervical cancer screening. This is in contrast to Belay et al., (2020) study in Ethiopia and (Ampofo et al., 2020) study in Ghana which have associated low utilization of cervical cancer screening to unemployment. The study results have revealed a statistical significance ( $P$  value=0.003), between awareness on the availability of free cervical cancer screening and utilization of the service, with those who were aware to be 1.982 times more likely to utilize the service and this being a motivating factor, the study findings agrees with Yimer et al., ( 2021) broad study in Sub-Saharan Africa which showed that out of pocket payment hinders women from utilizing screening service. Accessibility to modes of transport to the health facility was not statistically significant in this study with close to a third of the respondents 77(39.7%), reported to have walked to the facility because it is near to them while others used motorcycles and taxis. These findings contrast with a study done in Vhembe District South Africa by Vhuromu et al., (2018) where women had difficulty accessing the health facility due to distance and geographical landscape

### **5.2.5 Healthcare factors determinant of cervical cancer screening utilization**

The findings of the study revealed that majority of the respondents 105(54.1%) would engage any healthcare worker to discuss their reproductive system health needs. However, a significant number of them 77 (39.7%) preferred a female healthcare worker to discuss their secretive reproductive system issues. This is consistent with a study by (Hweissa, n.d.), in North Africa which identified gender preference as a barrier. The study results also revealed a vast number of women 149 (76.8%) who missed the screening during data collection period and majorly tied this to the service being unnecessary at the moment because they didn't have symptoms (51%) and the waiting hours to be screened (50%). Therefore the study resonates with Yong et al., (2018) study in Malaysia which revealed that long hours of waiting for screening has influenced the cervical cancer screening service utilization.

The study results also showed that majority, 130(67%) of the respondents agree that the health facility is adequately prepared to carry out cervical cancer screening. However, 33% of them stated that the facility is not yet ready to offer cervical cancer screening service. They tied their disagreement to the few healthcare workers (82%), few screening rooms (47%) and least of them (25%) tied it to the screening service given only to those who opted for Intra Uterine Contraceptive device for contraception. This is in agreement with Maseko et al., (2015) study in Malawi, Page et al., (2020) study in Migori County Kenya & Perehudoff et al., (2020) study in Low-Middle Income Countries, revealing the relationship between cervical cancer screening utilization and healthcare factors.

### **5.3 Conclusion**

The study concludes that utilization of the cervical cancer screening was way below average with only, 43(22.2%) of the respondents reporting to have utilized the service in the past, this is below the WHO recommendation of 70% target screening. The findings of the study give a clear picture of the current burden of cervical cancer in Kenya and women presenting with advance form of disease. The information shared by healthcare workers about cervical cancer screening seems to be in adequate to compel women to utilize it. Other sources of information transmission need to be enhanced to increase the uptake of screening services for early detection of the disease.

Age and utilization of the screening service is significant, with young women failing to utilize the screening service. More sensitization is required for women to understand the age bracket target for cervical cancer screening.

The study has shown that level of knowledge is a major factor influencing the utilization of the service and those women who had in-depth knowledge about cervical cancer and screening, being likely to utilize the service. Given that all respondents have attained some level of education, the study revealed that there is a gap on what they know about cervical cancer screening. The disparity in knowledge level explains the lower coverage of screening utilization among the respondents. Screening for cervical cancer was introduced to Kenya back in 2009, yet its utilization is still in dire need.

The study also concludes that healthcare factors have influenced cervical cancer screening utilization with a significant number of women not agreeing with the healthcare facility preparedness on cervical cancer screening and therefore missing the opportunity to utilize the service.

## **5. 4. Recommendations**

### **5.4.1 Recommendation on policy**

The need of formulating community based participatory approach oriented policies, needs to be considered in order to enhance prevention and early detection of cervical thus increasing the uptake of cervical cancer screening, therefore realization of WHO 70% target. Men involvement in cervical cancer screening health education, will go a long way in building partner support and enhance open communication among spouses. As Kenya Ministry of Health prepares to come up with another cervical cancer strategic plan, this recommendation need to be adopted.

The study also recommend that cervical cancer screening be adopted as mandatory routine for all women of reproductive age. This has worked for other developed Countries and the policy has helped in reducing the burden of women presenting late with un-curable disease.

### **5.4.2 Recommendation for Practice**

Health facilities should prioritize cervical cancer screening by ensuring there is adequate preparedness to handle large numbers of women seeking services at Maternal-Child Health clinics. More trained healthcare workers should be deployed in Maternal-child-health clinic to reduce the waiting time. Women preference of healthcare worker gender should also be given emphasis when deploying. There is need to emphasize the benefits and success of early detection to young women who tend to think that the service is made for older women. There is need to create in-depth



awareness on current burden of cervical cancer in the Country to hasten women to utilize available screening services.

#### **5.4.3 Suggestion for Further Research**

This study was only limited to Kitengela Sub-County Hospital, one of the four Sub-counties Hospitals in Kajiado County. Therefore there is need for further studies to be done in the entire Sub-County Hospitals.

#### **5.5. Study strengths and Limitations**

The strength of this study was availability of local and regional dataset that was richly used to draw comparisons of variables findings under study. The data set was useful in measuring the determinants of cervical cancer screening utilization

There was limited access to the information on women attending the facility of study due to lack of a permanent register for regular reporting. The study was difficult to generalize since it was a cross-sectional study done only at Kitengela Sub-county hospital. Coronavirus pandemic was also a challenge in ensuring that women adhere to the set guidelines by Ministry of Health.

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**APPENDICES**

**Appendix 1: Semi-structured Questionnaire**

**Section I: demographic data**

1. Current place of residence.....County.....

**Part I (Bio-sociocultural Factors)**

2. Age in years .....

3. Religion

Christian

Muslim

Others specify.....

4. Marital status

Married

Single

Widow

Divorced/Separated

5. If **Married** (including widowed and divorced), at what age did you get Married?

.....

6. If **married**, what form of marriage are you in?

Polygamy

Monogamy.

7. If not **married**, do you have any sexual partners?

Yes

No

8. How many children do you have? (Parity).....

**Section II: Level of knowledge on cervical cancer screening**

9. a) Have you ever heard about cervical cancer screening before?  Yes  No

b) If **Yes**, how many methods of cervical cancer screening do you know?

None

one

two

c) If **yes**, where did you get the information from?

Healthcare workers

Social media

Family & friends

c) If **No**, would you like to be getting information about the screening?  Yes  No

d) How would you like to get the information about cervical cancer screening?

Social media (TVs, News-papers, radio)  Hospital Health Education

Religious Meeting

10. a) Cervical cancer screening is done to women of reproductive age to check for presence of cancer cells

Correct

Not correct

No opinion

11. Do you know that cervical cancer is preventable when detected early?

Yes  No

12. Have you ever been screened for cervical cancer  Yes  No

a) If **yes**, how old were you in the first screening?

25-35years  35-45years  above 50years

b) If yes, what is the recommended frequency for cervical cancer screening?

I don't know  after 3 years  as many times as possible

13. Of the following listed factors, choose which one are risk factors to cervical cancer? **Choose all that apply**

- i.  Multiple sexual partners
- ii.  Smoking
- iii.  High number of children
- iv.  Genital-urinary infection
- v.  Family history of cervical cancer
- vi.  Old age
- vii.  I don't know the risk factor to cervical cancer



14. Indicate **True** or **False** for the following statements about cervical cancer screening

- i. A woman should be screened anytime she asks.....
- ii. A woman should be screened only one time in her life.....
- iii. A woman should be screened only when advised by a health-worker.....
- iv. Cervical cancer is mandatory for all women of reproductive age.....
- v. Cervical cancer screening leads to removal of a woman's reproductive organ.....

15. Does your partner support you when you want to go for cervical cancer screening?

Yes  No

**Section III (Economic factors).**

16. What is your occupation?

- Formal employment with monthly Salary       Informal employment for wages  
 Self Employed       Unemployed

17. Level of Education

- Primary     Secondary     College/University     Never went to school

18. What is your average monthly income?

- Below 5,000Ksh.     Between 5,000 and 10,000Ksh     above 10,000Ksh

19. What means of transport do you use to visit the facility?

- i.  I walk because it is near
- ii.  A taxi
- iii.  A motorcycle
- iv.  Others (specify).....

20. Do you think the cost of screening for cervical cancer is high?

Yes       No

21. Do you know that cervical screening is free for all women who are eligible?

Yes       No

**Section IV (Healthcare system factors).**

22. Did you get screened for cervical cancer today?  Yes  No

23. If **No**, what made you not get screened today? Choose all that apply

- i.  It takes time to wait to be screened
- ii.  The testing resources were out of stock
- iii.  The health-worker said I don't fit to be screened
- iv.  My religion does not allow
- v.  The healthcare worker care has to be a female
- vi.  I felt it's shameful to expose my private parts
- vii.  I don't have any symptoms of cervical cancer disease
- viii.  The procedure is said to be painful
- ix.  Other reasons (specify).....

24. Do you believe that the health facility has put all the infrastructure required for cervical cancer screening in place? Yes  No

25. If **No (in 23)**, what makes you believe that the health facility has not put all the requirements for cervical cancer screening in place? (choose all that apply)

- i.  There are few health-workers working in FP clinic therefore long waiting time
- ii.  Most of the time the resources for screening are out of stock
- iii.  The room for screening is one while women are many
- iv.  Cervical cancer screening is only done for those who need IUCD as an FP method

26. Who do you find comfortable discussing problems related to the female genital tract? (choose all that apply)

- i.  With a male health-worker
- ii.  With a female health care-worker
- iii.  With a Sexual partner/Spouse
- iv.  With a relative
- v.  Others (specify).....

**Appendix 2: Dodoso lililopangwa**  
**SEHEMU YA 1: Data ya Mshiriki**

**Kumhusu mshiriki**

1. Mahali pa makazi.....Counti.....

**Kiutamaduni na kitamaduni kuchangia uamuzi wa uchunguzi wa saratani ya kizazi**

2. Miaka yako.....

3. Dini unalishiriki

Mkristo

Mwislamu

Taja mengine.....

4. Hali ya ndoa

Nimeoleka

Niko pekee

Mjane

Niko talakani

5. Kama **umeoleka**, (pia mjane na talaka), ulioleka ukiwa umri gani?

.....

6. Kama **umeoleka**, ndoa yako ni ya aina gani?  Wake wengi  Mke mmoja

7. Kama hujaoleka,, uko na mpezi?

Ndio

Hapana

8. Una watoto wangapi? (Parity).....

**SEHEMU YA 2**

**Kiwango cha ufahamu kinachosababisha uamuzi wa uchunguzi wa saratani ya kizazi**

9. a) Umewahi sikia juu ya uchunguzi wa saratani ya kizazi kati?  Ndio  La

c) Ikiwa ndiyo, ni njia ngapi zinazo tumiwa kuchunguza saratani ya kizazi unazozifahamu?

Hakuna

Mbili

Moja

b) Ikiwa jibu ni ndio, habari ulipata wapi?

Maafisa wa Afya

Vyombo vya habari

Familia na marafiki

c) Kama jibu ni La, ungependa kufahamishwa juu ya saratani ya kizazi?

dio  La

d) Ungependa kufahamishwa habari kupitia njia gani?

Vyombo vya habari (TVs, gazeti , radio)  Elimu ya afya hospitalini

Mikutano ya Dini

10. a) Saratani ya kizazi hufanyiwa wanawake wenye umri wa kuzaa ili kuchunguza seli za saratani

Sahihi

Sio sahihi

Sina jibu lolote

11. Umewahi chunguzwa saratani ya kizazi kati ?  Ndiyo  La

c) Ikiwa ndiyo, ulikuwa wa umri gani

miaka 25-35

miaka 35-45

miaka Zaidi 50

d) Ikiwa ndiyo, uchunguzi huu ulipendekezwa kufanywa baada ya muda gani?

Sijui

Baada ya miaka tatu

Mara nyingi iwezekanavyo

12 Je wafhamu kuwa saratani ya kizazi kati wazuilika unapogunduliwa mapema?

Ndiyo

La

13. Je wafikiri kuwa ni sababu gani za hatari zinazosababisha saratani ya kizazi? **Chagua zile zote zinazosababisha**

Wapenzi wengi

Uvutaji sigara

Kupata watoto wengi

Maambukizi ya magonjwa kutokana na ngono

Historia ya saratani katika familia

Uzee

Sifahamu hatari zinazosababisha saratani ya kizazi

**13 .** Onyesha kama **ukweli** au **uongo** katika kauli zifuatazo kuhusu saratani ya kizazi kati

- i. mwanamke anapaswa kupata huduma ya uchunguzi wa saratani ya kizazi wakati wowote.....
- ii. Mwanamke apaswa kuchuzwa saratani ya kizazi mara moja tu maishani.....
- iii. Uchunguzi ni wakati afisa wa afya anaposema nipate.....
- iv. Uchunguzi wa saratani ya kizazi ni lazima kwa mwanamke wa umri wa kuzaa .....?
- v. Uchunguzi wa saratani ya kizazi husababisha kutolewa kwa mji wa mimba.....

**15.** Je mpenzi wako huwa wa msaada wakati unapohitaji kwenda kwa huduma ya uchunguzi wa saratani hii?

Ndiyo  La

### **SEHEMU YA 3**

#### **Maswali ya kiuchumi zinazosababisha uamuzi wa uchunguzi wa saratani ya kizazi**

**16.** Wafanya kazi gani?

Ajira rasmi yenye mshahara

Ajira isiyo rasmi

Umejajiri

Huja ajiriwa wala kujajiri

**17.** Kiwango cha Elimu

Primary     Sekondari     Chuo Kikuu     Sijapata Elimu

18. Je? Mapato yako baada ya kila mwezi ni ngapi?

Chini ya 5,000 Ksh     Kati 5,000 na 10,000Ksh     Zaidi ya 5,000Ksh

19. Je wafikiri kuwa gharama ya uchunuzi wa saratani uko juu zaidi?

Ndio     La

20. Je wajua kuwa uchunguzi wa saratani ya kizazi ni bure kwa wanawake wote wanaostahili kuchunguzwa?

Ndio     La

21. Ulitumia usafiri wa aina gani kufika kwenye kituo cha afya leo?

- v.  Nilitembea kwa sababu ni karibu
- vi.  Texi
- vii.  Pikipiki
- viii.  Taja aina nyingine.....

22. Ulilipa hela ngapi kuja and kurudi nyumbani?

- i.  Silipi chochote
- ii.  Chini ya. 200
- iii.  Zaidi ya. 200
- iv.  Taja kiasi kingine cha hela.....

#### SEHEMU YA 4

#### Mfumo wa huduma wa afya unaosababisha uamuzi wa kuhusika katika uchunguzi wa saratani ya kizazi

23. Je, ulifanyiwa uchunguzi wa saratni kizazi leo?     Ndiyo     La

24. Ikiwa jibu ni **La**, ni nini kilichosababisha usipate uchunguzi huu? Chagua sababu zote zinazolingana

- x.  Sina ufahamu kuwa huduma huo unapatikana hapa
- xi.  Sikujulishwa kwamba nafaa kufanyiwa uchunguzi huo
- xii.  Nilifikiri itanigharamisha kulipa

- xiii.  Uchunguzi huo huchukuwa muda wangu sana
- xiv.  Vyombo vya utumizi havikuwemo
- xv.  MUhudumu wa afya alinifahamisha kuwa sistahili kwa wakati huu
- xvi.  Dini yangu hairuhusu
- xvii.  Lazima mhudumu wa afya awe mwanamke
- xviii.  Aibu ya kufichua uchi
- xix.  Huduma yenyewe ni chungu
- xx.  Uchunguzi hauna haja kama sina dalili ya saratani ya kizazi
- xxi.  Taja sababu zingine.....

**25.** Je wewe kama mwanamke wapata ugumu wa kuzungumzia maneno ya siri na nani?

(chagua yote yanayoambatana)

- i)  Afisa wa afya mwanaume
- ii)  Afisa wa afya mwanamke
- iii)  Mpenzi wako
- iv)  Mtu wa jamii

**26.** Je waamini kuwa kituo cha afya imeweka mikakati yote sawa kuwezesha uchunguzi wa saratani ya kizazi?  Ndiyo  La

**27.** Ikiwa ni **La**, ni nini kinachosababisha usiamini kuwa mikakati iko sawa kuwezesha uchunguzi wa saratani ya kizazi? (chagua yote yanayoambatana)

- vi.  Maafisa wa afya ni wachache na hiyo huchangia masaa ya kungoja
- vii.  Vyombo ya utumizi havimo mara nyingi
- viii.  Chumba cha uchunguzi ni moja kulingana na hesabu ya wanao chunguzwa
- ix.  Uchunguzi wa saratani ya kizazi hupewa wale wanaohitaji IUCD
- x.  Wanawake wengi hawajajua umuhimu wa uchunguzi wa saratani ya kizazi
- xi.  Taja Sababu (zingine).....

### **Appendix 3: Informed consent**

This informed consent form is for women aged 25-49 years whom I am seeking their participation in this study. This is a descriptive cross-sectional study with the title **Determinants of cervical cancer screening services utilization among Women aged 25-49 years in Kitengela Sub-County Hospital, Kenya.**

The informed consent is in two parts

Part I: Project description

Part II: certificate of consent

#### **Part I: Project Description**

I am a student at University of Nairobi undertaking a Master's degree in Oncology Nursing. I will be conducting a research on determinants of cervical cancer screening services utilization among women aged 25-49 years at Kitengela Sub-County Hospital, Kenya. I want to learn about the level of knowledge of cervical cancer screening and the possible barriers for the low rate outcome in this facility. The information that will be gathered will help healthcare managing team in improving and advancing cervical cancer screening among eligible women seeking healthcare service in the facility. The researcher will be asking questions by use of a questionnaire, and if the participant has any question or requires any clarification, the participant has freedom to ask.

To give justification on why the study is relevant, Kenya is ranked as the highest burdened Country with cervical cancer in East Africa (Njuguna et al., 2020). Cervical cancer screening prevents and detects early precancerous lesions. The primary objective of this study is assess the factors influencing cervical cancer screening services utilization. These factors include bio-sociocultural factors, socio-economic factors and healthcare related factors.

Your participation in this research is entirely voluntary and you have the right to terminate your participation at any stage of the study. There will be no potential risk associated with the participation in the study. The information collected from you participants will be handled with utmost confidentiality and mainly used for academic purposes to improve cancer of cervix screening in Kitengela Sub-County Hospital. The investigator will be the only one in custody of the data collected. The data will be coded and stored in the researcher's computer till the research period is over.



The study is relevant and important to the facility where the participant attends and the findings will inform the strategies to be plan to improve cervical cancer screening utilization. There are no monetary benefits or other gifts in participating in this research. The questionnaire/interview will take about 10-15 minutes to fill.

In case of any questions concerning this research you can contact me being the researcher and the following referees who are my supervisors.

**Researcher:** Sarah Naneu Daniel- Tel no. 0712847606

**Supervisor:** Dr. Mary Kamau -Tel no. 0727 736 810

**Supervisor:** Dr. Emma Matheka -Tel. no. 0710 105 771

Also in case you may want to raise any concerns on the conduct of the study, you can contact the University of Nairobi-Kenyatta National Hospital Ethics and Research Committee.

**KNH-UoN ERC**

**Email:** [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke)

**Part 2: Certificate of consent**

The information statement in this consent has been explained to me and I have read for myself. I have had the opportunity to ask questions and all the questions I have asked, have been answered and explained to my satisfaction. I hereby consent to participate in this research

Name of respondent.....

Signature of respondent.....Date .....

**Illiterate Respondent**

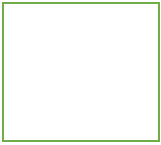
I have witnessed the honest reading of the consent form to the participant. She has had the chance to ask questions and they have been answered to her satisfaction. I confirm that she has given consent freely.

Witness name.....

Witness signature.....

Date.....

**Thumb print of the participant**



**Statement by researcher/ researcher assistant**

I have read the information accurately to the potential participant and the respondent was given a chance to ask questions and were answered accordingly. I confirm that the participant has given the consent autonomously.

Name of researcher/research assistant.....

Signature .....Date.....

#### **Appendix 4: Informed consent (Swahili)**

Hii utoaji idhini ni kwa ajili ya wanawake wenye umri kati ya miaka 25-49 ambao wamekaribishwa kushiriki katika utafiti huu. Sehemu ya utafiti ni vigezo vya matumizi ya huduma ya uchunguzi wa saratani ya mfuko wa uzazikati ya Wanawake wa umri wa miaka 25-49 katika Hospitali ya serikali ya Kitengela, Kenya

#### **Mipango ya taarifa ni katika sehemu mbili**

Sehemu I: kurasa la habari

Sehemu II: Cheti cha makubaliano

#### **Sehemu ya Kwanza**

Mimi ni mwanafunzi katika Chuo Kikuu cha Nairobi nikisomea ngazi ya Shahada ya uzamili katika uuguzi unaozingatia saratani. Nitakuwa nikifanya utafiti juu ya vigezo vya matumizi ya huduma ya uchunguzi wa saratani ya mfuko wa uzazikati ya Wanawake wa umri 25-49 katika Hospitali ya serikali Kitengela wadi ya Kajiado mashariki, Kenya. Utafiti huu utakapokamilika utasaidia wakurugenzi wa hospitali hii kuboresha uchunguzi wa saratani ya kizazikati vilivyo. Mimi mtafiti nitakupa taarifa ya habari kuhusu utafiti huu na pia nikuulize masawli yaliyokuwa katika dodoso lilochapishwa na mtafiti. Iwapo kuna maneno ambayo hayaeleweki na unahitaji ufafanuzi zaidi basi una uhuru wa kunizuia kuendelea na bila shaka nitakujibu vilivyo.

Kuhalalisha utafiti huu, Nchi yetu Kenya imechukuwa nafasi ya kwanza Afrika Mashariki kwa maradhi ya saratani ya kizazikati. Hii ndio sababu mimi mtafiti natak kujua viziwi vinavyochangia wanawake wa umri wa kati ya 25-49, kutohudhuria uchunguzi wa saratani ya kizazikati (Njuguna et al., 2020). Uchunguzi wa mapema wa saratani ya kizazikati unazuia ugonjwa huu kuwa mzigo kwa wanawake na pia taifa letu la Kenya. Nitafanya utafiti juu ya viziwi kama vile kiutamaduni na kitamaduni, kijamii na uchumi na pia mfumo wa idara ya fya ambavyo vinaweza kuwa zinachangia ukosefu wa utumizi wa huduma za uchunguzi wa saratani ya kizazi kati kwa wanawake wenye umri kati ya 25-49, wanaostahiki huduma huu.

Ushiriki wako katika utafiti huu ni wa hiari kabisa na wala hutalazimishwa, na pia unaweza kusitisha ushiriki wako katika hatua yeyote ya utafiti. Hakuna uwezekano wa hatari wakati unaposhiriki kwenye utafiti. Habari utakao peana kwa mtafiti, utabebwa kwa usiri mkubwa na itahifadhiwa kwenye kompyuta ya mtafiti kwa muda wa utafiti. Habari utakao peana itapatikana

kwa mtafiti pekee wala hakuna mhusika mwingine. Habari kutoka kwako mshiriki utatumika kuboresha afya ya wanawake wa umri 25-49 kwa kuendeleza uchunguzi wa saratani ya kizazikati.

Hakuna faida ya kifedha utakaopewa mshiriki katika utafiti bali habari itakayopatikana utatumika kuboresha wanawake wanaohudhuria hospitali ya Kitengela kwa huduma ya uchunguzi ya saratani ya kizazikati kwa wakati ujao. Dodoso litachukua muda wa dakika 10-15 kulijaza. Ukiwa na swala lolote kama mshiriki katika utafiti kuhusu utafiti wenyewe, unaweza wasiliana name na pia wasimamizi wangu katika utafiti huu, kama wafuatao.

**Mtafiti:** Sarah Naneu Daniel –Tel no. 0712847606

**Msimamizi:** Dr. Mary Kamau Tel no. 0727 736 810

**Msimamizi:** Dr. Emma Matheka Tel. no. 0710 105 771

Pia waweza kuwasiliana na kamati ya utafiti katika chuo kikuu cha Nairobi na Hospitali kuu ya Kenyatta iwapo kuna maswali kuhusu utafiti huu.

### **KNH-UoN ERC**

**Email:** [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke)

### **Sehemu ya 2: Hati ya idhini**

Nimesoma taarifa kama ilivyotangulia/taarifa nimesomewa. Nimepewa nafasi ya kiulizio kama sijaelewa. Maswali niliyoyauliza yamejibiwa na yamefafanuliwa kwa kuridhika kwangu. Nilikubali bila kulazimishwa kushiriki katika utafiti huu.

Jina la mshiriki.....

Sahihi ya mshiriki.....

Tarehe.....

### **Mshiriki asiyejua kuandika**

Nimeona usomaji sahihi wa fomu ya idhini kwa mshiriki. Amepewa nafasi ya kiulizio na maswali yote aliyouliza yamejibiwa kwa kuridhika kwake. Nimedhibitsha kwamba ametoa idhini kwa hiari.

Jina la Shahidi.....

Sahihi ya Shahidi.....

Tarehe.....

**Chapisho la kidole la mshiriki**



**Taarifa kwa mtafiti/ mtafiti msaidizi**

Nimesoma ipasavyo maelezo kwa mshiriki na mshiriki huyo alipewa nafasi ya kuuliza maswali na yalijibiwa kwa usahihi. Ninadhibitsha kwamba mshirikki amepeana idhini kwa hiari bila kulazimishwa.

Jina la mtafiti/mtafiti msaidizi.....

Sahih ya Mtafiti/Mtafiti msaidizi.....Tarehe .....

## Appendix 5: Approval Letter from ERC

 UNIVERSITY OF NAIROBI COLLEGE OF HEALTH SCIENCES P.O. BOX 19619 Code 00202 Telegrams: variety Tel: (254-20) 2728308 Ext 44358	 KENYATTA NATIONAL HOSPITAL K.N.H- UoN ERC Email: <a href="mailto:kenh_erc@uonbi.ac.ke">kenh_erc@uonbi.ac.ke</a> Website: <a href="http://www.erc.uonbi.ac.ke">http://www.erc.uonbi.ac.ke</a> Facebook: <a href="https://www.facebook.com/kenh_erc">https://www.facebook.com/kenh_erc</a> Twitter: <a href="https://twitter.com/kenh_erc">https://twitter.com/kenh_erc</a>	 KENYATTA NATIONAL HOSPITAL P.O. BOX 28723 Code 00202 Tel: 725300-9 Fax: 725312 Telegrams: MEDSUP, Nairobi
Ref: KNH-ERC/A/289		16 <sup>th</sup> August, 2021
Sarah Naneu Daniel Reg. No. H56/34076/2019 School of Nursing Sciences College of Health Sciences <u>University of Nairobi</u>		
Dear Sarah		
<b>RESEARCH PROPOSAL- DETERMINANTS OF CERVICAL CANCER SCREENING SERVICE UTILIZATION AMONG WOMEN AGED 25-49 YEARS ATTENDING KITENGELA SUB-COUNTY HOSPITAL (P308/5/2021)</b>		
This is to inform you that the KNH- UoN Ethics & Research Committee (KNH-UoN ERC) has reviewed and <b>approved</b> your above research proposal. The approval period is 16 <sup>th</sup> August 2021 – 15 <sup>th</sup> August 2022.		
This approval is subject to compliance with the following requirements:		
<ol style="list-style-type: none"><li>i. Only approved documents (informed consents, study instruments, advertising materials etc) will be used.</li><li>ii. All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.</li><li>iii. Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.</li><li>iv. Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.</li><li>v. Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.</li><li>vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (<u>Attach a comprehensive progress report to support the request</u>).</li><li>vii. Submission of an <u>executive summary</u> report within 90 days upon completion of the study.</li></ol>		
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This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>

Yours sincerely,



**PROF. M. CHINDIA**  
**SECRETARY, KNH- UoN ERC**



- c.c. The Principal, College of Health Sciences, UoN  
The Senior Director, CS, KNH  
The Chair, KNH- UoN ERC  
The Assistant Director, Health Information, KNH  
The Director, School of Nursing Sciences, UoN  
Supervisors: Dr. Mary Kamau, School of Nursing Sciences, UoN  
Dr. Emma Mathoka, School of Nursing Sciences, UoN

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## Appendix 6: Research Authorization from Kajiado County Government

**COUNTY GOVERNMENT OF KAJIADO**



**DEPARTMENT OF HEALTH SERVICES  
OFFICE OF THE COUNTY DIRECTOR OF HEALTH SERVICES  
P. O. BOX 31, KAJIADO**

REF: CGK/MEDICAL SERVICES/01/VOL II/114 23<sup>rd</sup> August, 2021

Sarah Naneu Daniel  
Reg. No. H56/34076/2019  
School of Nursing Sciences  
College of Health Sciences  
University of Nairobi



**RE: RESEARCH AUTHORIZATION**

---

Reference is made to a letter dated 16<sup>th</sup> August, 2021 from the KNH-UoN Ethics & Research committee (KNH-UoN ERC) reference No. KNH-ERC/A/289 on the above subject for the period ending 16<sup>th</sup> August 2021 - 15<sup>th</sup> August 2022.

The Department has no objection in you carrying out research on 'Determinants of cervical cancer screening service utilization among women aged 25-49 years attending Kitengela sub-county hospital'. You are however required to share findings of your research with this office.

Thank you.




**DR. EZEKIEL KAPRONI**  
**COUNTY DIRECTOR OF HEALTH SERVICES**


CC:  
CHIEF OFFICER FOR MEDICAL SERVICES  
CHIEF OFFICER FOR PUBLIC HEALTH & SANITATION SERVICES



**Appendix 7: NASCOSTI Authorization license**



REPUBLIC OF KENYA




**NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY & INNOVATION**


Date of Issue: **28/October/2021**

**RESEARCH LICENSE**

**This is to Certify that Ms. Sarah Njiru Muiya of University of Nairobi, has been licensed to conduct research in Kajjale on the topic: DETERMINANTS OF CERVICAL CANCER SCREENING SERVICE UTILIZATION AMONG WOMEN AGED 25-49 YEARS ATTENDING KITENGELA SUB-COUNTY HOSPITAL for the period ending : 28/October/2022.**

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## Appendix 8: Similarity index report

### DETERMINANTS OF CERVICAL CANCER SCREENING SERVICE UTILIZATION AMONG WOMEN AGED 25-49 YEARS ATTENDING KITENGELA SUB-COUNTY HOSPITAL.

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