DETERMINANTS OF CERVICAL PRE-CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING MBAGATHI LEVEL FOUR HOSPITAL IN NAIROBI, KENYA

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DECLARATION AND APPROVAL

This proposal is my original work and has not been presented for a degree in any other University or for any other award.

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Supervisors' Approval

We confirm that the work reported in this proposal was carried out by the candidate under our supervision.

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DEDICATION

I would like to dedicate this research project to my beloved wife, Imgard Atuwo, whose unwavering support has been the cornerstone of my journey.

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ABSTRACT

Cervical cancer poses a significant global health challenge, causing around 340,000 deaths annually and ranking as the fourth most frequent cancer worldwide. This study aimed to determine the factors influencing the uptake of cervical pre-cancer screening among women at Mbagathi Level Four Hospital in Nairobi, Kenya. The specific objectives were to determine screening rates, assess awareness levels, and identify socio-cultural and psychological factors affecting screening uptake. The Health Belief Model provided the theoretical framework for this study. An analytical cross-sectional design was employed, targeting women aged 25-49 years attending Mbagathi Level Four Hospital. Systematic random sampling was used to select 213 participants. Data collection involved semistructured questionnaires, which were pre-tested for validity and reliability, achieving a Cronbach's alpha of 0.78. Data management and analysis were conducted using SPSS version 26. Descriptive statistics summarized demographic data, while inferential statistics, including Chi-Square tests and logistic regression, identified associations and predictors of screening uptake. The study found that the cervical pre-cancer screening rate among the participants was 39.6%. Awareness levels were high, with 80.8% of women having heard about cervical pre-cancer screening. However, significant socio-cultural and psychological barriers influenced screening uptake. Marital status, educational attainment, and psychological factors such as fear and perceived susceptibility were significant determinants ($p < 0.05$). Younger women, particularly those aged 25-29 years, exhibited higher screening rates compared to older age groups. Married women were more likely to participate in screening than single women, indicating the influence of marital support on health behaviors. The logistic regression analysis revealed that higher educational attainment significantly predicted increased screening uptake (OR = 2.3, $p = 0.01$). Women with a higher perceived susceptibility to cervical cancer were also more likely to undergo screening. The Chi-Square test demonstrated a significant association between awareness and screening uptake ($\chi^2 = 10.24$, $p = 0.001$). Despite high awareness, psychological barriers such as fear of a positive result and socio-cultural factors like stigma and support from spouses and community members remained substantial obstacles. In conclusion, while awareness of cervical precancer screening is high among women at Mbagathi Level Four Hospital, socio-cultural and psychological barriers continue to impede screening uptake. To improve screening rates, it is recommended that targeted educational campaigns be enhanced, addressing specific socio-cultural barriers and providing psychological support to alleviate fears associated with screening. These interventions could significantly contribute to increasing cervical precancer screening rates and ultimately reduce the burden of cervical cancer in this population.

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AIDS:	Acquired Immune Deficiency Syndrome
CCC:	Comprehensive Care Clinic
DNA:	Deoxyribonucleic Acid
GOPC:	Gynecological Outpatient Clinic.
HCP:	Healthcare Provider
HIV:	Human Immunodeficiency Virus
HPV:	Human Papillomavirus
KHIS:	Kenya Health Information System
LEEP:	Loop Electrosurgical Excision Procedure

MCH:	Mother Child Health Clinic/ Mother wellness clinic
MOH:	Ministry of Health
NACOSTI:	National Commission for Science, Technology & Innovation
NCCP:	National Cancer Control Program
NCCS:	National Cancer Control Strategy
SSA:	Sub-Saharan Africa
STI:	Sexually Transmitted Infection
VIA:	Visual inspection with Acetic Acid
VILI:	Visual Inspection with Lugol's Iodine
WHO:	World Health Organization

OPERATIONAL DEFINITION OF KEY TERMS.

Awareness	Women's level of knowledge, comprehension and recognition of cervical pre-cancer screening services at Mbagathi Level four Hospital.
Screening	Using straightforward techniques on a healthy population to detect undiagnosed cancer before symptoms appear in persons.
Determinants	Factors or variables that influence or impact a certain outcome
Pre-cancer	Abnormal cell growth in the cervix has the potential to become cancer if left untreated.

Psychological factors

Individuals' thoughts, beliefs, emotions, and attitudes may influence their decisions and behaviours. They include; fear, anxiety, stigma, perceptions of risk, attitude towards screening, etc.

Sociocultural factors

Social and cultural circumstances may prevent one from accessing certain healthcare services. Social circumstances may include; economic social status, social norms, traditions, cultural practices, social support systems, etc.

Uptake Proportion or rate of individuals who participate in or utilize service or intervention.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Cervical cancer is a malignant tumor of the cervix, primarily caused by persistent infection with high-risk human papillomavirus (HPV) types, especially HPV-16 and HPV-18 (WHO, 2021). It ranks as the **fourth most common cancer** affecting women worldwide, with an estimated **604,000 new cases and 342,000 deaths** reported in 2020 (GLOBOCAN, 2020). The burden is heaviest in low- and middle-income countries (LMICs), where more than 90% of cervical cancer deaths occur, largely due to inadequate screening and treatment infrastructure (Arbyn et al., 2020)." In Sub-Saharan Africa (SSA), this disease exacts a particularly heavy toll, with a mortality rate of 23 cases per 100,000 women (Ngune et al., 2020). In Kenya, cervical cancer is the second most frequent cancer among women after breast cancer. It accounts for about 5,236 new cases and 3,211 deaths annually, representing 11.9% of all cancer-related fatalities (Ferlay *et al*., 2018; Kenya MOH, 2022; GLOBOCAN, 2020). These sobering statistics underscore the urgency of addressing cervical cancer as a public health priority.

In response to this public health challenge, the World Health Organization (WHO) launched a global strategy in 2020 to eliminate cervical cancer as a public health problem by 2030.

This strategy set ambitious targets—90% HPV vaccination, 70% screening coverage, and 90% treatment of pre-cancerous lesions (WHO, 2021). Cervical pre-cancer screening, especially using methods such as visual inspection with acetic acid (VIA), HPV testing, and Pap smears, remains a cornerstone in this elimination agenda. Cervical pre-cancer screening, as endorsed by the WHO, stands among the top three interventions crucial to the global

mission of eradicating cervical cancer by 2030. This proven and cost-effective measure holds immense potential for cervical cancer elimination, yet its uptake remains disappointingly low (WHO, 2018).

A systematic review examining screening uptake across Sub-Saharan Africa (SSA) spanning the years 2000 to 2019, conducted by Yimer *et al.,* (2021), estimated an average screening rate of 12.9%. In Ethiopia, a comprehensive meta-analysis led by Desta *et al.,* (2021) revealed a national screening rate of 14.9%. Notably, in Kenya, Nyangasi *et al*., (2018) conducted an assessment, estimating screening rates of 16.4% in a nationally representative sample. These figures underscore the pressing need to address barriers and enhance the accessibility of cervical cancer screening services to achieve WHO's ambitious elimination goals.

In Kenya, despite the existence of national screening guidelines and free or subsidized services in public facilities, screening uptake remains suboptimal. A national survey by Nyangasi *et al*. (2018) reported screening rates as low as 16.4%, and findings from the National Cancer Control Program (2020) indicate that most facilities lack skilled providers and reliable data reporting systems, with annual screening rates varying between 1% and 36% (Mwenda *et al.*, 2022).

At the subnational level, especially in urban, low-resource settings like Nairobi's informal settlements, the situation is even more dire. Mbagathi Level Four Hospital serves a mixed population from both formal and informal urban settlements, making it an important site for evaluating barriers to screening in such settings.

Multiple studies have shown that low screening uptake is often driven not by availability of services, but by patient-level factors such as poor awareness, sociocultural barriers, and psychological fears.

The level of awareness regarding cervical pre-cancer screening plays a pivotal role in determining its uptake (Getahun *et al*. 2013). A meta-analysis encompassing Sub-Saharan Africa (SSA) for the period spanning from 2000 to 2019 underscored the region's low level of awareness, with projections suggesting that improving awareness could potentially elevate screening rates by a substantial fivefold factor (Yimer *et al.,* 2021). Educational attainment emerges as a significant determinant, with highly educated women in Ghana exhibiting a remarkable 122-fold increased likelihood of undergoing screening (Ampofo *et al*., 2020). Conversely, Desta *et al.* (2021) discovered that a low level of formal education among Ethiopian women reduced cervical pre-cancer screening rates by two-thirds. Notably, individuals with better formal education demonstrated heightened awareness of their susceptibility to and the severity of cervical cancer, factors intricately linked to increased screening uptake. These findings find resonance in Western Kenya, where Wachira *et al*., (2016) identified a compelling association between a lack of awareness and diminished screening rates. Furthermore, Morema *et al.*, (2014) established a tangible relationship between an individual's awareness of the clinical features of cervical cancer and their likelihood of undergoing screening. These cumulative insights underscore the critical importance of fostering awareness to enhance cervical pre-cancer screening rates. Sociocultural factors wield considerable influence as determinants of cervical pre-cancer screening. Populations with lower social status often contend with reduced awareness and fragmented healthcare systems, resulting in lower screening rates (Coleman, 2014). A

systematic review spanning Sub-Saharan Africa (SSA) conducted by Swanson *et al.,* (2018) pinpointed financial, socio-cultural, and logistical factors as the primary sociocultural determinants of screening rates. Culture, in particular, plays a multifaceted role in shaping attitudes towards cervical pre-cancer screening. Abdikarim *et al.* (2017) found that over half (55.8%) of Kenyan Somali women expressed fear and embarrassment regarding screening. In Nairobi, Rositch *et al*. (2012) observed that while there was a high level of cultural acceptability surrounding cervical pre-cancer screening, a significant majority (82%) of these women favoured procedures that allowed for self-sampling. Bradford and Goodman (2013) and Bruni *et al*. (2017) linked lower cervical pre-cancer screening rates to sociocultural factors, such as the resistance to pelvic examinations among specific communities in Kenya. These insights underscore the need for culturally sensitive approaches to enhance screening uptake.

Psychological factors wield considerable influence as determinants of cervical pre-cancer screening. In a systematic review focused on Sub-Saharan Africa (SSA), Lim and Ojo (2017) unearthed a prevailing fear among women regarding the potential outcomes of the screening test. Many women expressed concerns that the test infringed upon their privacy and dreaded the consequences of a positive result, which included stigma, lack of spousal support, and the high cost of treatment. This sentiment finds resonance in the findings of Moshi *et al.* (2019), who identified a poor perception of the screening procedure as a significant determinant of screening reluctance among Tanzanian women. Moreover, in Zimbabwe, Mutambara *et al.* (2017) documented that some women perceived the screening test as a daunting and painful experience. In Kisumu, Wachira *et al*. (2016) noted that a lack of awareness regarding the screening procedure was associated with reduced screening rates.

Additionally, a palpable fear of receiving a positive screening result further contributed to psychological barriers surrounding screening uptake. These insights underscore the need for comprehensive education and support mechanisms to address the psychological aspects of cervical pre-cancer screening.

Perceived susceptibility and the severity of cervical cancer indeed exert a notable influence on the uptake of cervical pre-cancer screening. In a systematic review spanning Sub-Saharan Africa (SSA) from 2000 to 2019, Yimer *et al.* (2021) discerned that perceived susceptibility and the perceived severity of cervical cancer played a pivotal role as predictors of screening behaviour. Furthermore, Gemeda *et al*. (2020) identified self-efficacy as a significant determinant of screening behaviour among Ethiopian women, highlighting the importance of an individual's belief in their ability to undergo screening. These findings resonate with the work of Morema *et al*. (2014), who established a compelling association between the perceived risk of cervical cancer and its severity, alongside the intention to undergo screening among women in Kisumu. Collectively, these insights underscore the importance of addressing perceived susceptibility, severity, and self-efficacy to enhance cervical precancer screening rates.

The cues to cervical cancer screening encompass various elements, including creating awareness of cervical pre-cancer screening, social influence, personal experiences, and policy initiatives. A study examining the support provided by spouses and knowledge regarding cervical cancer screening among Sub-Saharan immigrant men, conducted by Adegboyega *et al*. (2019), unveiled a notable lack of awareness regarding screening guidelines. However, it also revealed a strong enthusiasm among these men to support their spouses in obtaining screening services. Moreover, the study highlighted the collaborative

family decision-making approach when seeking screening services, suggesting that targeting spouses could lead to increased uptake.

The pivotal role of well-designed health education programs as cues for screening is evident in a study conducted in Nigeria by Abiodun *et al*. (2014). Their research demonstrated a remarkable increase in screening rates from 2% to 70%, alongside a surge in the perception of screening from 5% to 95% after educational interventions. Similarly, Rosser, Njoroge, and Huchko (2015) reported a moderate increase in screening uptake among women in rural Kenya following a brief educational intervention. Furthermore, the adoption of a country's policy for the equitable and universal implementation of cervical pre-cancer screening serves as a crucial cue to encourage screening participation (MOH, 2020). These multifaceted cues underscore the importance of comprehensive strategies to enhance cervical pre-cancer screening rates.

1.2 Statement of the problem

Cervical cancer is a preventable and treatable disease if detected early through effective screening and timely intervention. Despite this, it remains a leading cause of cancer-related morbidity and mortality among women in Kenya. National data indicate that less than 20% of eligible women have undergone cervical cancer screening, with some urban public hospitals reporting rates as low as 1% (NCCP, 2020; Mwenda et al., 2022). These low screening rates persist even in facilities where screening services are available, such as Mbagathi Level Four Hospital, which serves a large and diverse urban population from both formal and informal settlements in Nairobi.

In this context, the uptake of cervical pre-cancer screening remains unacceptably low, leading to late-stage diagnosis and poor treatment outcomes. While national efforts have focused on training health workers and supplying equipment, patient-level barriers—such as fear, lack of awareness, cultural stigma, and socio-economic constraints—continue to hinder participation in screening programs.

Mbagathi Hospital, despite being a government-designated facility for cancer screening and reproductive health services, still reports limited utilization of cervical pre-cancer screening services. This suggests that systemic interventions have not adequately addressed individual and community-level determinants of health-seeking behaviour. Understanding the specific factors influencing screening uptake in this setting is essential for designing locally relevant, evidence-based interventions.

This study seeks to fill this gap by exploring the psychological, sociocultural, and awarenessrelated determinants of cervical pre-cancer screening uptake among women aged 25–49 years attending Mbagathi Level Four Hospital. By focusing on this population, the study aims to provide actionable insights that can strengthen targeted interventions and contribute to the national goal of 70% screening coverage by 2030.

1.3 Purpose of the study

The purpose of the study is to establish determinants of cervical pre-cancer screening uptake among women attending Mbagathi level four hospitals in Nairobi, Kenya. It will reveal what are the predictors of a woman attending Mbagathi level four hospital undergoing a cervical pre-cancer screening procedure. Specifically, it will determine cervical pre-cancer screening rates, the level of assess of awareness of women towards cervical pre-cancer screening,

determine sociocultural factors and establish psychological factors that influence cervical pre-cancer screening. Findings will provide a deep understanding of these factors which are important for cervical cancer programming. It will inform on designing interventions that aim at increasing uptake of cervical pre-cancer screening. Cervical pre-cancer screening is important in detecting early signs of cervical cancer allowing for timely treatment. Ultimately, it will provide evidence-based evidence that will inform policy development.

1.4 Research Objectives

1.4.1 Broad Objectives

To establish determinants of cervical pre-cancer screening uptake among women attending Mbagathi level four hospitals in Nairobi, Kenya.

1.4.2 Specific Objectives

i. To determine cervical pre-cancer screening rates among women attending Mbagathi level four hospital, Nairobi, Kenya.
ii. To assess the level of awareness of cervical pre-cancer screening among women attending Mbagathi level four hospital, Nairobi, Kenya.
iii. To determine sociocultural factors that influence cervical pre-cancer screening among women attending Mbagathi level four hospital, Nairobi, Kenya.
iv. To identify psychological factors that influence cervical pre-cancer screening among women attending Mbagathi level four hospital, Nairobi, Kenya.

1.5 Research Questions

i. What are the cervical pre-cancer screening rates among women attending Mbagathi level four hospitals, in Nairobi, Kenya?

ii. What is the level of awareness of cervical pre-cancer screening among women attending Mbagathi level four hospital, Nairobi, Kenya?

iii. What are the sociocultural factors that influence cervical pre-cancer screening among women attending Mbagathi level four hospital, Nairobi, Kenya? iv. What are the psychological factors that influence cervical pre-cancer screening among women visiting Mbagathi level four hospital, Nairobi, Kenya?

1.6 Study Significance

The findings from this study will help determine factors that influence the uptake of cervical pre-cancer screening at Mbagathi level four hospital. It will provide a deeper understanding of factors that influence the decision-making of a woman being screened or not. This will help policy makers come up with targeted interventions to address barriers or promote facilitators ultimately increasing screening. It will also shed light on screening rates and possible reasons for the level of uptake at Mbagathi level hospital. It will serve also for monitoring of interventions so far implemented by the ministry of health. This will also contribute to the global strategy of eliminating cervical cancer.

1.7 Study Scope

The study will be conducted at Mbagathi level four hospital, Nairobi Kenya. The findings and conclusions only pertain to this health facility and may not be directly generalizable to

other hospitals or regions. However, insights gained can provide valuable knowledge for similar health facilities in Nairobi or another urban setting. The study will focus on women attending Mbagathi level four hospital, Nairobi Kenya. The inclusion will be based on the availability and willing of women to participate in the study within the specified timeframe from January 2024 to March 2024.

1.8 Study Limitations

The study findings might apply to a specific population attending Mbagathi level four hospitals and might not apply to the broader population of Nairobi or Kenya. Data collected will be based on self-reporting from the respondents which may be subject to social desirability bias and a potential recall bias. The researcher may have some challenges in getting information from some of the respondents from more conservative communities since this research is focused on culture-sensitive aspects of health. Moreover, there is a risk of researcher bias due to the researcher's pre-conceived beliefs.

1.9 Delimitations

The researcher will focus on collecting data only from women aged 25 to 49 years attending Mbagathi Level Four Hospital. This age range as been selected specifically because women within this age set have the highest burden of cervical cancer. Kenyan's cervical cancer screening guidelines also target this age gap. This study will be carried out at Mbagathi Level Four Hospital is situated in an area where the residents are multicultural and from diverse socio-demographic profiles.

1.10 Assumptions of the study

The researcher assumes that the information provided by the research participants will be truthful and reflect the actual situation. Moreover, they assume that the situation at Mbagathi Level Four Hospital will be similar to that which will be reported by other women visiting other health facilities not only in Kenya but also within less developed nations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section provides a review of the existing literature on the determinants of cervical precancer screening uptake among women attending Mbagathi level four hospitals in Nairobi, Kenya. Cervical pre-cancer screening rates remain a concern among women from lowresource settings. The literature review is aimed to explore relevant theoretical and empirical studies relating to the uptake of cervical pre-cancer screening.

2.2 Cervical Cancer

Globally, cervical cancer is ranked fourth in both incidence and mortality rates with an estimated 604,000 cases diagnosed and 340,000 women dying every year (GLOBOCAN, 2020). Women from LMIC especially those from SSA contribute 12% to the global prevalence rate and 26% to the mortality rate (WHO, 2018). In Kenya, Cervical cancer contributes 5236 new cases annually (12.4%) to the cancer burden coming second to breast cancer (GLOBOCAN, 2020).

"The lifetime risk of getting infected with Human Papilloma Virus (HPV) among sexually active women is 50-70% with 80% of women having had an infection by age 50 years". Fortunately, most (80%) of these infections resolve spontaneously with 20% proceeding to cause cancer (Mehlhorn, *et al*., 2013). Risk factors for cervical cancer include; "early initiation of sexual activity, multiple sexual partners, co-infection with other sexually transmitted infections (STIs), multiparity, HIV, and, tobacco use" (MOH, 2018; Thompson and Flowers, 2020).

2.3 Cervical Pre-Cancer Screening guidelines

The following are women who can be screened for cervical pre-cancer according to Kenyan guidelines; women who have ever had intercourse, target age range of 25 to 49 years, and screening two years for HIV-positive women and five years for women who test negative for the virus. Every five years, women between the ages of fifty and sixty-five are tested. For women over 30, HPV testing is advised. If testing is not accessible, visual inspection using acetic acid (VIA) or visual inspection using acetic acid and Lugol's iodine (VIA/VILI) is advised. Pap smear is recommended for women below 30 years or where the other tests are not available or as a co-test with HPV in HIV-positive women. HPV testing is not recommended for women below 30 years old as a majority of them will spontaneously shed off the virus. Women are allowed to collect sample specimens for HPV testing. Pregnant women can be screened in the first trimester whereas postpartum screening begins after 6 weeks (MOH, 2018).

2.4 Cervical Pre-Cancer screening

Globally, disparities in cervical pre-cancer screening uptake remain stark between highincome countries (HICs) and low- and middle-income countries (LMICs). While many studies in Sub-Saharan Africa, including Kenya, have documented low screening uptake, research from high-resource settings illustrates how comprehensive strategies can lead to significantly higher participation in cervical cancer prevention programs.

For instance, in the United States, the National Health Interview Survey (NHIS) data show that over 70% of women aged 21 to 65 years have undergone a Pap smear within the recommended time frame (CDC, 2022). This high uptake is largely attributed to organized

screening programs, continuous public education, and easy access to healthcare services. Similarly, in Australia, a nationally coordinated screening program that integrates HPV vaccination and HPV DNA testing has placed the country on track to become the first to eliminate cervical cancer as a public health issue by 2035 (Canfell et al., 2019).

Comparative studies across LMICs reveal innovative strategies to address the unique barriers these regions face. In India, a landmark cluster-randomized trial demonstrated that visual inspection with acetic acid (VIA) performed by trained primary healthcare workers led to a 31% reduction in cervical cancer mortality (Shastri et al., 2014). In Peru, the deployment of mobile clinics and the promotion of self-sampling for HPV testing significantly increased screening rates, particularly in remote and underserved communities (Arrossi et al., 2015).

In addition to infrastructure and economic challenges, cultural and psychological factors remain pivotal determinants of screening behaviour worldwide. A review by the World Health Organization Regional Office for Europe (WHO Europe, 2020) highlighted that woman in Eastern Europe face stigma and fatalism similar to those observed in Sub-Saharan Africa, often perceiving cancer diagnosis as a death sentence. Moreover, religious and cultural norms in Middle Eastern countries, like in parts of Kenya and Nigeria, influence preferences for female healthcare providers and reinforce the need for spousal consent before participating in cervical cancer screening (Modibbo et al., 2016; Kasraeian et al., 2020).

Cervical pre-cancer screening is one of the three key interventions in cervical cancer elimination by the year 2030. It is a proven cost-effective intervention for eliminating cervical cancer yet uptake is low (WHO, 2018). In a systematic review carried out by Yimer

et al., (2021) between 2000 to 2019 estimated cervical cancer screening uptake at 12.9% in SSA. In Ethiopia, Desta *et al.,* (2021), estimated a national rate of cervical cancer screening at 14.9%. In Kenya, there has been a challenge with proper data handling on cervical precancer screening as affirmed by Mwenda *et al.,* (2022) on cervical cancer programme in Kenya between 2011 to 2020 where the annual screening rate is recorded as low as 1% to 36%. Nyangasi *et al.* (2018) in a nationally representative case-control study estimated cervical screening at 16.4%. This is the most accurate screening rate. Research done in Kenya on a lower scale has yielded screening rates near this. In a study done in Western Kenya factors associated with the uptake of VIA found that only 11% were screened (Wachira *et al*., 2016)

Kenya's income distribution can be categorized into three main groups: low, middle, and high income. Individuals earning between KES 0 and KES 30,000 fall into the low-income category, typically struggling to cover basic needs (KNBS, 2020). The middle-income group, earning between KES 30,001 and KES 100,000, consists of individuals with steady employment, often in formal sectors (World Bank, 2021). High-income earners, who make above KES 100,000, usually hold professional or managerial positions and can comfortably cover all basic needs (KIPPRA, 2019).

2.5 Level of awareness of cervical pre-cancer screening.

This literature review focuses on the role of awareness as a determinant of cervical precancer screening uptake among women attending Mbagathi level four hospitals in Nairobi, Kenya. The relationship between awareness and screening uptake is important in developing strategies to improve screening rates.

Several studies have emphasized the significance of awareness as a determinant of the uptake of cervical pre-cancer screening. A meta-analysis conducted for SSA for the period between 2000 to 2019 reveals a low level of awareness in the region regarding cervical pre-cancer screening. Remarkably, this study forecasted a potential area of improvement, estimating that improving awareness would improve cervical pre-cancer screening rates by five folds (Yimer *et al*., 2021). Correlating these findings, Getachew *et al.,* (2019) conducted a study in Addis Ababa that found a direct correlation between diminished awareness and screening rates. This linkage was further substantiated in rural western Kenya by Wachira *et al.,* (2016) who found a direct relationship between low awareness and screening rates. The relationship was more when considering the awareness pertaining to the screening procedure itself.

Shifting the focus to studies in and around Nairobi, a study on cervical screening at Kenyatta National Hospital, Mbagathi and Mama Lucy level four hospitals by Mwenda (2019) estimated a lack of awareness of cervical pre-cancer screening at 48.2%. This contradicts a study by Kangethe *et al*., (2020) which delved into screening uptake among women living with HIV at Kenyatta National Hospital (KNH), in Nairobi. Notably, there was a high level of awareness at 84% among these women, attributed to their prolonged follow-up in HIV care. Interestingly, despite this heightened awareness, screening rates remained at 45%. Further, Kangethe *et al*., (2020) found a compelling association between higher education levels and the likelihood of getting screened. This linkage is further validated by Daniel (2021) while exploring the determinants of cervical cancer utilization at the Kitengela subcounty hospital. His study corroborates the notion of a robust connection between awareness and uptake screening programs. There is a consensus across many studies that

suggests fostering awareness plays a pivotal role in encouraging the uptake of screening irrespective of the context under investigation.

Sociodemographic factors have a substantial influence on awareness of cervical pre-cancer screening. Ampofo *et al.*, (2020) provide compelling evidence that women with higher education exhibited a staggering 122 times the likelihood of undergoing cervical pre-cancer screening in Ghana compared to those with limited education. In parallel vein, Desta *et al.*, (2021) delved into the impacts of formal education on the uptake of screening by Ethiopian women. The findings revealed that a lower level of formal education was associated with reduced screening rates by two-thirds. Intriguingly, the study further illuminated that woman possessing solid formal education exhibited awareness not only of their susceptibility to cervical cancer but also of the severity of the cancer, culminating in better screening uptake. Among educated women in Togo, Moore and Driver (2014) found that 30% were aware of pap smears but only 8% had been tested. Similarly, Isabirye, (2020) highlighted socioeconomic disparities, revealing that affluent women were twice as likely to be screened as compared to poor. The nexus between occupation and awareness regarding cervical precancer screening emerged as well. In contexts tied to health-related occupations as having a higher level of awareness. A study conducted among female health workers in Nigeria elucidated this phenomenon. Despite their knowledge about screening, the study uncovered sub-optimal uptake due to financial constraints and apprehensions surrounding test results (Okolie *et al.,* 2022). Collectively, these studies underscore the intricate interplay between sociodemographic factors and awareness of cervical pre-cancer screening, revealing the importance of education, occupation, and socioeconomic status in influencing its uptake.

Misconceptions and knowledge gaps among women regarding cervical pre-cancer screening significantly affect awareness and uptake of screening. A qualitative exploration of perception and motivation for screening among women in rural Lilongwe in Malawi, shed light on the depth of these challenges (Bula *et al.,* 2022). This study revealed that many women possess a limited understanding of the screening procedure with some expressing profound concerns about the discomfort of the examination and specimens collected by the health workers. These fears were further exacerbated by the apprehension of a positive test result, which some associated with a fatal outcome. This qualitative inquiry revealed alarming misconceptions demonstrating the extent to which misinformation can hinder screening uptake. For instance, one participant expressed fear that health workers would draw her blood in case she was diagnosed with pre-malignant cervical lesions, while another expressed a distressing belief that health workers would unlawfully sell her collected vaginal secretion. These misconceptions and knowledge gaps entrenched in fear and mistrust, have a direct bearing on the low screening rates.

The presence of screening services, quality of healthcare and communication strategies influence women's awareness and uptake of screening services. Burrowes *et al.,* (2022) found that lack of equipment, space to examine patients and lack of in-service training of health providers discouraged screening in Ethiopia. This was compounded by misdiagnosis and delayed referral and treatment of those found to have cervical cancer lesions. Similar findings were found in several observational studies on system-level barriers in cervical precancer screening in Migori, Kenya where a lack of necessary equipment, materials and healthcare workers had a negative impact on awareness of screening (Page *et al*., 2020).

Rural women have lower awareness of screening services as compared to urban women. A facility-based cross-sectional study carried out by Campaore *et al.*, (2016), found that most (90%) participants who were predominantly urban were aware of screening with more than half (55%) of them having moderate knowledge in Burkina Faso. This was similar to urban based-facility study conducted in Addis Ababa, Ethiopia by Getachew *et al.*, (2019), which found that 42.7% of the participants had heard of cervical cancer with 27.7% having adequate knowledge about screening. This is higher than the estimated national screening rate of 13.5% (Ayenew *et al.,* 2020). This is also true in the Kenyan context where a nationally representative Kenya Health demographic survey (KDHS) data, revealed screening rate disparities across the country. This was attributed to wealth disparities, especially rural-urban wealth disparities. Generally, a majority (78%) of women knew about screening yet only 18% had ever been screened (Kangmennaang *et al*., 2018).

Promoting screening awareness and education through provider-patient communication and recommendations influence is an important factor in increasing uptake. In a populationbased study in central Uganda, Isabirye *et al.*, (2020) found that women who were receiving health education were 4 times more likely to get screened as compared to those who got information from radios. Consequently, women who knew about screening had a two-fold likelihood of getting screened.

A key strategy for raising awareness and screening rates is health education. A screening rate of 12.9% was discovered for the region by Yimer *et al.* (2021) after conducting a systematic review of 29 studies from the SSA from 2000 to 2019. Understanding cervical cancer enhanced screening uptake by five times, according to a subsequent meta-analysis of seven studies. Moreover, in a quasi-experimental investigation on the effects of health instruction,

Abiodun *et al*., (2014) found use of multimedia in health education including the use of video in rural Nigeria using both local languages, Yoruba and English showed improvement in knowledge of cervical cancer screening from 94% to 7. This concurs with a randomized clinical trial study conducted by Rosser *et al*., (2015) in rural Kenya which found improvement of awareness by 26.4% and screening uptake by 58.9%.

2.6 Sociocultural Factors that Determine cervical pre-cancer Screening uptake.

Sociocultural factors intricately shape individuals' ability to effectively utilize available resources to enhance or maintain their health, and this holds true for cervical pre-cancer screening. The role of socio-cultural factors is paramount in determining whether individuals actively seek screening services. Binka *et al*., (2019) highlight that the sociocultural dimension, notably the community's belief system, wields considerable influence over the adoption or rejection of cervical cancer screening. Expanding on this perspective, Binka *et al*., (2019) reveal that the Ghanian community examined in their study held beliefs that would facilitate or hinder the uptake of cervical pre-cancer screening. Some community members perceived cervical cancer as a divine retribution or consequence of transgressions, while others linked it to a curse resulting from perceived sexual promiscuity. These deepseated beliefs are likely to deter women from seeking screening services, perpetuating gaps in awareness and uptake.

Remarkably, these findings align with research conducted by Singh and Badaya (2012) in India. Their study illuminated how cultural perceptions can lead to misconceptions of viewing cervical cancer as a "traditional" ailment. In this context, certain symptoms, such as excessive vaginal bleeding were sometimes misattributed to menstruation, further

complicating early diagnosis. Additionally, late hospital reporting was linked to notions of cervical cancer as a normative “female” affliction, perpetuating self-medication practices at home to avoid medical expenses and consultations (Singh and Badaya, 2012). These insights emphasize the vital importance of understanding and addressing cultural factors in screening. Traditional customs and cultural boundaries are significant barriers to accessing cervical precancer screening services. As highlighted by Black *et al*. (2019), several socio-cultural factors play a pivotal role in influencing the uptake of screening. These factors encompass gender power dynamics, the presence of stigma, familial or spousal support, recommendations for screening and treatment, and the influence of traditional healers within healthcare decision-making processes. One notable barrier illuminated by Black *et al*. (2019) is the absence of emotional and financial support from spouses, which impedes women's engagement with screening. Kasraeian *et al.* (2020) underscored the lack of family support, particularly disapproval from husbands as a primary obstacle to cervical cancer screening. A noteworthy observation is that a small percentage (7%) of individuals believe that screening is exclusively for unmarried women, emphasizing misconceptions that limit screening services.

Gender norms and power dynamics within households and communities contribute to shaping women’s autonomy in decisions about their getting screened. Modibbo *et al*. (2016), observed that cultural norms, particularly those pertaining to modesty and the gender of healthcare providers acted as significant barriers to cervical pre-screening in Nigeria women. Notably, Muslim participants expressed a strong preference for female healthcare providers, citing religious reasons for their concerns, while Christian participants appeared less concerned about the gender of healthcare providers. However, regardless of religious

affiliation, all participants emphasized the importance of having a female chaperone present during screening. Modibbo *et al*. (2016) also revealed that most participants felt compelled to seek permission from their husbands before undergoing screening. This trend was more pronounced among Muslim participants, who regarded it as a religious requirement. Some women felt that informing their husbands was necessary due to the financial aspects associated with clinic visits, while others believed that involving their husbands would facilitate the disclosure of abnormal results. These findings resonate with findings by Ongtengco *et al.,* (2020) in Senegal, which highlighted the central role of men in household decision-making processes, including healthcare decisions.

Further insights from Binka *et al*. (2019) affirm the influence of gender roles on screening in Ghana. They found that women often needed approval and financial support from spouses for screening. Moreover, some women encountered difficulties in convincing their male partners to provide both social and financial support when visiting healthcare facilities for screening. In essence, the attendance of women at screening sessions hinged heavily on the approval and willingness of their male partners to support them, highlighting the intricate web of traditional customs and gender dynamics that shape healthcare decisions.

Economic factors undeniably wield a substantial influence on cervical pre-cancer screening uptake. Biddell *et al.,* (2021) found that a majority of women from low-income countries had various financial hurdles associated with screening, including appointment and treatment costs. They also suggested that providing financial assistance to low-income women would improve access and screening uptake. Similarly, Owenga and Nyambedha (2018) conducted a study focusing on economic factors associated with the continuum of care for cervical cancer in Western Kenya. Their research highlighted several key challenges,

such as the financial burden of travel expenses and diagnostic tests. Taken together, these studies emphasize the critical role of economic considerations regarding cervical pre-cancer screening. Addressing financial barriers associated with these services, including the provision of financial assistance and broader insurance coverage, can potentially alleviate the economic burden and improve access to cervical cancer prevention and care.

2.7 Psychological Factors that Influence cervical pre-cancer screening uptake

Psychological factors undoubtedly wield a profound influence on an individual's health behaviours, encompassing aspects such as motivation, attitude, belief systems, and perception. Teng *et al*., (2014) delved into embarrassment associated with the provider screening process as compared to self-sampling for HPV DNA testing in Uganda. Their research illuminated that embarrassment surrounding cervical cancer could be categorized into two distinct dimensions: personal and community embarrassment. Personal embarrassment pertains to an individual's discomfort regarding their genitalia, while community embarrassment is associated with factors such as the recruitment location of research participants, the level of privacy in one's living environment, personal relationships with healthcare workers, the process of handling vaginal swabs, and misunderstandings about HPV self-tests. Importantly, Teng *et al.* (2014) found that embarrassment serves as a formidable impediment to the uptake of cervical pre-cancer screening, which can be addressed by increased education and knowledge.

Similarly, Black *et al.,* (2019) reported that the intimate nature of pap smears and the resulting embarrassment led to low uptake of these screening services. This aligns with the observations made by Kasraeian *et al*., (2020) and Teng *et al.,* (2014), which revealed that

women often experience fear regarding being diagnosed with cervical cancer and the associated fatality of the cancer.

Concerns about diagnosis and the associated stigma that may arise from a cervical cancer diagnosis emerge as significant psychological factors. Societal stigma and taboos related to intimate examinations influence cervical pre-cancer screening. A systematic review conducted by Lim and Ojo (2016), spanning from 1970 to 2014, highlighted stigmatization and shame as prominent determinants for cervical pre-cancer screening programming in SSA. Getting diagnosed with cervical cancer is often unfairly seen as a result of promiscuity, unsanitary lifestyles, and even superstitions like evil curses, all of which act as barriers to women seeking screening services. Additionally, the disclosure of positive results was linked to fears of societal rejection, further exacerbating the reluctance to undergo screening. Expanding on this theme, Ongtengco *et al.*, (2020) also conducted research into cervical cancer and its associated sociocultural factors where they delved into the societal stigma and taboos that can influence uptake of cervical cancer screening. These studies collectively underscore the pervasive impact of societal perceptions and biases on women's healthcareseeking behaviours, emphasizing the need for culturally sensitive and comprehensive approaches to address these barriers.

Emotional factors, such as fear, anxiety, and relief, significantly determine the uptake of cervical pre-cancer screening. Modibbo *et al*. (2016) highlighted several emotional factors that come into play. Discomfort during the screening and disclosure of results were key emotional factors identified. These factors underscore the psychological complexity that can hinder women from screening. This is in line with a systematic review conducted by Lim and Ojo (2016) covering the Sub-Saharan African region from 1970 to 2014. The review

revealed that many women considered the screening to be a painful experience, with some participants associating this pain with the removal and insertion of instruments during the screening process. Additionally, the review indicated that screening was often linked to being tested for HIV, which was viewed as a significant barrier. These emotional factors, including the fear of pain and concerns about concurrent HIV testing, contribute to the broader emotional landscape that affects women's decisions about cervical pre-cancer screening. This can be addressed through education and counselling, and providing supportive environments can help alleviate barriers and promote more widespread participation in screening programs.

Motivation by family members is key in cervical pre-cancer screening. Among these family influencers, spousal encouragement emerges as a particularly significant motivator, as emphasized by Paul *et al.* (2013). The support and encouragement of a spouse are key in influencing screening. Additionally, the perception of how family and community members might view cervical cancer screening exerts a considerable influence on uptake, as noted by Black *et al.* (2019). A prevalent concern in this regard is the fear that undergoing cervical cancer screening could inadvertently be linked to having HIV, potentially leading to stigma. This concern underscores the complex interplay of health, stigma, and social acceptance within the decision-making process surrounding screening.

Women's trust in healthcare providers and their perceptions of provider recommendations indeed play a crucial role in shaping their willingness to participate in screening programs. As emphasized by Ndejjo *et al*. (2016), recommendations from healthcare workers emerge as a pivotal motivator for cervical cancer screening. The trust and guidance offered by healthcare professionals hold significant sway over women's decisions to engage in

screening initiatives. This underscores the essential role that effective healthcare provider communication and education play in promoting preventive healthcare measures. Healthcare providers serve as trusted sources of information and guidance for individuals seeking healthcare services. Their expertise and reassurance can alleviate concerns, dispel misconceptions, and motivate women to take proactive steps toward cervical cancer screening. Consequently, building and maintaining strong patient-provider relationships, along with ensuring that healthcare providers are well-informed and skilled in delivering recommendations for screenings, are critical aspects of encouraging women to participate in these vital preventive measures.

Women's perceptions of the severity of cervical cancer, its potential consequences, and its impact on their lives are significant factors influencing their willingness to participate in precancer screening. As noted by Ndejjo *et al*. (2016), personal experiences, such as the loss of a family member to cervical cancer, can serve as powerful motivators for some women to undergo screening. Witnessing the devastating consequences of cervical cancer within one's own family can create a poignant and deeply personal awareness of the disease's severity and the urgent need for early detection and prevention. This personal connection to the disease can drive individuals to take proactive steps to safeguard their health. It underscores the emotional and psychological dimensions that influence women's healthcare-seeking behaviours. Moreover, it highlights the importance of raising awareness about the seriousness of cancer and its negative implications on individuals and families as a means of encouraging more widespread participation in screening programs. Efforts to convey the real-world consequences of cervical cancer can be a powerful tool in motivating women to prioritize their health through regular screenings and preventive measures.

Perceived barriers associated with undergoing screening indeed serve as significant determinants of the uptake of screening services. Black *et al*. (2019) highlighted the location of the screening facility and the level of privacy it offers have been identified as determinants of screening uptake. Ensuring that screening services are conveniently located and provide adequate privacy can help address some of the barriers related to the physical environment. Moreover, fears related to the screening process can also act as substantial barriers. Black *et al*. (2019) identified several fears, including pain or discomfort of the screening procedure and concerns about infection due to poorly sanitized equipment like the speculum. Additionally, misconceptions and fears, such as the belief that the screening test may enlarge sexual organs or pull out the uterus, were reported in the study. These psychological barriers underscore the need for comprehensive education and clear communication with women about the screening process to dispel myths and alleviate anxieties.

The concept of health locus of control plays a role in women's uptake of screening services. Women's beliefs and perceptions about their ability to control their own health and healthrelated outcomes significantly influence their decisions regarding getting screened. Candidate *et al*. (2018) identified individual responsibility and the extent to which women perceive themselves as having control over their health as a determinant for the uptake of screening by Iranian women. The belief that one can undertake preventive measures serves as a strong motivator for engaging in cervical pre-cancer screening. This underscores the importance of empowering women with information and resources that enable them to take an active role in their healthcare decisions. When women feel that they have control over their health and understand the value of preventive measures like screening, they are more likely to participate in these crucial healthcare services.

In response, Teng *et al*. (2014) suggest the implementation of peer education as a potential strategy for overcoming these obstacles to cervical cancer screening. Peer education can play a pivotal role in dispelling misconceptions, reducing embarrassment, and enhancing knowledge, ultimately promoting greater acceptance and utilization of screening services. Addressing these perceived barriers through education, improved facilities, and open communication can help reduce unnecessary concerns that may deter women from seeking this essential preventive healthcare.

2.8 Theoretical framework

In the realm of women's healthcare behaviours, the Health Belief Model, originally postulated by Rosenstock in 1974, has emerged as a fundamental framework for understanding health-seeking behaviours. This model posits that an individual's readiness to take action is contingent upon several critical components;

Perceived susceptibility is a woman's assessment of their chances of getting cervical cancer whereas perceived severity is a woman's judgment of the severity of cervical cancer. Women determine if cervical pre-cancer screening is better than what they are already doing based on perceived benefits and perceived obstacles, which are the things they believe will prevent them from adopting screening behaviours. Events, persons, or objects that cause people to alter their conduct are known as cues to action. While self-efficacy refers to a woman's confidence and belief in her ability to perform screening, other triggers for action include health education, counsel from community members, the illness of a family member, or messages on social media. Unless they have confidence in their ability, people rarely attempt to acquire new behaviours. Someone who believes that changing their conduct is beneficial

(perceived benefit) but is doubtful about their capacity to do so is reluctant to try changing their way of life.

2.9 Conceptual Framework

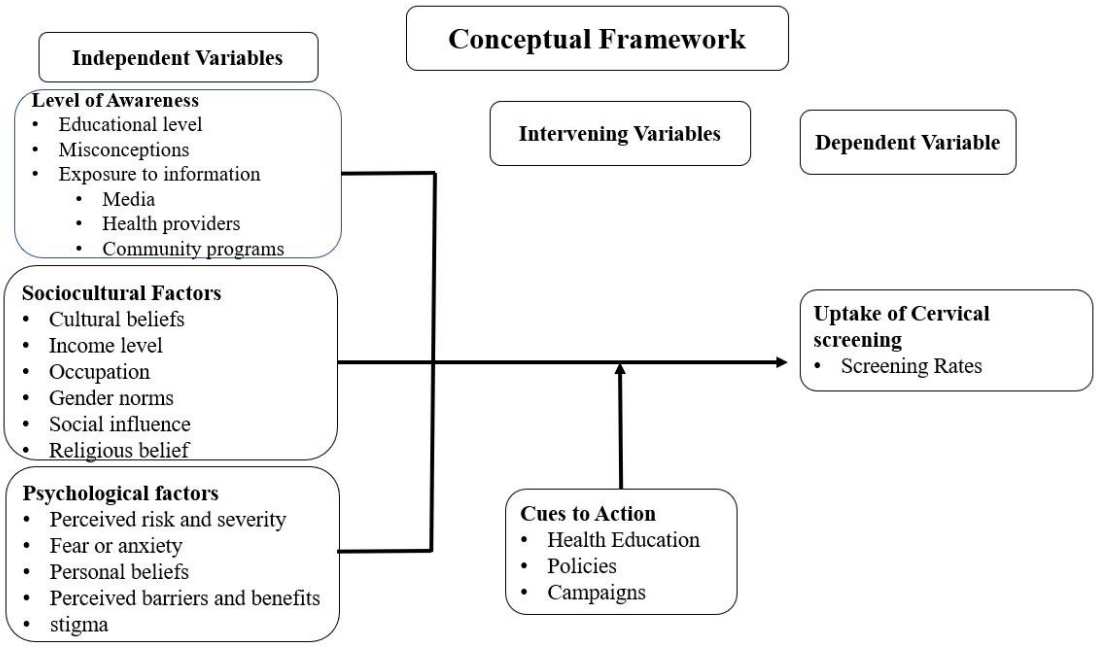

Figure 2.1: *Conceptual framework showing the relationship between the dependent and independent variables in this study (Author, 2024)*

2.10 Research Gap and significance

Identifying research gaps in cervical pre-cancer screening is essential for advancing our understanding and improving interventions. While the literature review provided valuable insights, several research gaps stand out. Many studies discussed in the literature review focus on specific populations or regions. A research gap exists in understanding how the applicability of the Health Belief Model varies across diverse cultural, socioeconomic, and geographical contexts. Future research should explore how cultural factors, healthcare

systems, and sociodemographic characteristics influence the model's components and their impact on screening behaviours.

Most of the cited studies appear to be cross-sectional or retrospective. Longitudinal studies that track women's beliefs, perceptions, and screening behaviours over time would provide a more robust understanding of how these factors evolve and interact. Such studies could help elucidate strategies for increasing the uptake of screening. Also, more studies are needed to evaluate the impact of such strategies. A qualitative approach would offer a better understanding of the barriers and facilitators of the screening programs. Future research should incorporate qualitative methodologies to capture nuanced insights, particularly regarding emotional factors and personal beliefs.

While the review focused on women's beliefs, perceptions, and behaviours, a research gap exists in understanding healthcare provider perspectives. Exploring how healthcare providers' beliefs and communication practices align with the Health Belief Model and impact women's decisions could provide a more comprehensive view of the screening process. The literature review briefly touched upon emotional factors like fear and anxiety. However, further research is needed to delve into the nuances of these emotional barriers, including the specific triggers and coping mechanisms that women employ during screening.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter described the research methods that were used to establish determinants of cervical pre-cancer screening uptake among women attending Mbagathi Level Four Hospital, Nairobi, Kenya.

3.1 Study Design

The research adopted an analytical cross-sectional study design. This research design allowed the researcher to examine relationships between different variables. The research collected data on determinants of cervical pre-cancer uptake of women attending Mbagathi Level Four Hospital. Data obtained were used to establish relationships between the level of awareness and socio-cultural, and psychological factors in relation to cervical pre-cancer screening.

3.3 Study Area

The study was conducted at Mbagathi Level Four Hospital in Nairobi County. Mbagathi Level Four Hospital was constructed in the 1950s to counter infectious diseases requiring isolation such as TB, measles, leprosy, and meningitis. In 1955, it was transformed into an independent District Hospital, and since then, the hospital has expanded to offer countylevel health services. Mbagathi Level Four County Hospital is situated in the Kenyatta Golf Course area in Dagoretti, Nairobi County, bordering the Kibera slums. The hospital serves a wide area with an estimated 1 million people, mainly comprising the underprivileged.

Moreover, the hospital screens clients before IUCD insertion as well as those referred from other facilities based on their clinical presentations. Other clients who were screened for cervical cancer were those who walked in and requested screening services.

3.3.1 Study Area Justification

Mbagathi Level Four Hospital was purposefully selected for this study due to its strategic location and service population characteristics, which make it highly relevant for investigating the determinants of cervical pre-cancer screening uptake. The hospital is situated adjacent to Kibera—one of the largest informal settlements in Kenya—thereby

serving a mixed catchment area that includes both urban middle-income populations and low-income, marginalized communities. This socioeconomic diversity offers a unique opportunity to examine how cultural, psychological, and awareness-related factors vary across different population groups within an urban setting.

Furthermore, Mbagathi Hospital is a designated public facility under the Ministry of Health for offering reproductive health services, including cervical cancer screening. Despite the availability of these services, anecdotal reports and internal records indicate a persistently low uptake of cervical pre-cancer screening, making it an ideal setting for investigating the gap between service availability and utilization.

The hospital's central location and high daily patient volume, particularly in the Mother and Child Health (MCH) Clinic, enhance the feasibility of sampling and data collection. Its role as a referral and outpatient centre in Nairobi County further increases the diversity of its patient population, allowing for more representative insights that can inform policy and programmatic interventions in similar urban public health settings across Kenya.

3.4 Study Population

The study targeted women who were 25 to 49 years old seeking healthcare services at the Mother and Child Clinic (MCH) at Mbagathi Level Four Hospital. The age range of 25 to 49 years was considered as per Kenya's screening guidelines recommendations for the population at most risk of cervical cancer. It was estimated that Mbagathi Level Four Hospital's catchment represented approximately 25%, which translates to about 270,000 women aged between 25 and 49 years in the catchment area (Kenya National Bureau of Statistics, 2019).

3.5 Sampling Technique

Participants were selected through systematic random sampling, a probability sampling method that ensures each eligible woman attending the facility had an equal chance of being selected. The sampling was conducted at the Mother and Child Health (MCH) Clinic at Mbagathi Level Four Hospital, which serves a high number of women aged 25 to 49 years—the primary target group for cervical pre-cancer screening according to national guidelines.

Based on hospital records, the MCH clinic attends to approximately 1,500 women monthly**.** Using the required sample size of 213 participants, the sampling interval (k) was calculated using the formula: k = N / n, 1500/213 which is 7. Thus, every 7th woman meeting the inclusion criteria (aged 25–49 years, not critically ill, and willing to give informed consent) was recruited to participate in the study. The first participant was randomly selected from the first group of attendees each day, after which every 7th eligible woman was enrolled. (Kothari & Garg, 2014).

3.6 Sample size

Sample size will be determined using (Fisher's *et al*, 1998) formula shown below.

$$n = \frac{z^2pq}{d_2}$$

Where:

N=sample size (if the target population is greater than 10,000)

Z=standard normal deviate at the confidence level (1.96)

P=proportion of the target population estimated to have a particular characteristic being measured (0.164) was used. The screening uptake in Kenya is estimated to be 16.4% (Nyangasi *et al.*, 2018).

q=probability of non-occurrence (1-p) d=degree of accuracy; it is the optimum proportion (0.05) n=desired sample size if the population is less than 10,000

$$n = \frac{96^2 \times 0.164 \times 0.846}{0.05^2}$$ 1.

n=213

The sample Size is 213.

3.7 Inclusion and Exclusion Criteria

3.7.1. Inclusion Criteria

- Female aged between 25 and 49 years
- Seeking MCH services offered at Mbagathi Level four Hospital.
- Ability to provide informed consent.

3.7.2. Exclusion Criteria

- Mothers who have had a total hysterectomy as they are no longer at risk.
- Those who will not consent.
- Critically ill or require urgent medical attention.

3.8 Definition of Variables

3.8.1. Independent Variables

The dependent variable (DV) for the research included: awareness of cervical pre-cancer screening (what it is, its availability, how it is done, its purpose), sociocultural factors (income, occupation, education level, cultural factors, religious beliefs, gender norms, social influence and support), and psychological factors (emotional factors such as fear and anxiety, past experiences, stigma, perceived susceptibility, perceived severity, perceived barriers and benefits).

3.8.2. Dependent Variables

The independent variable (IV) for the research was the uptake of cervical pre-cancer screening services (screening rates).

3.9. Data Collection Procedure

Participants were identified using a systematic random sampling technique at Mbagathi Level Four Hospital, Mother Wellness Clinic, where every 6th eligible participant was recruited. The researcher obtained consent from the participants, outlining the voluntary nature of research participation, and the risks and benefits of the study. In addition, key informant interviews were conducted among health workers and community health workers at Mbagathi Level Four Hospital. The data collection exercise was approximated to take one month.

3.10. Data Collection Instrument

The researcher, with the help of a research assistant, administered semi-structured questionnaires to all the selected participants. The research tool was designed based on the conceptual framework. Data were collected using the Google form online data collection tool interviews conducted by trained research assistants.

3.11. Validity and Reliability

3.11.1. Validity

To ensure the validity of the data collection process, the researcher employed a meticulously crafted questionnaire designed to comprehensively address the research objectives. This questionnaire was administered by trained research assistants. The data quality was upheld through a multi-faceted approach, including the pretesting of the questionnaire, coding of

questionnaires, collected data review for completeness, and timely feedback by the principal investigator to the research assistants.

3.11.2. Reliability.

Three research assistants will be engaged and given thorough training on the collection of data and ethical issues in order to guarantee the validity of our data collection process. These research assistants will be recruited for their expertise in research methodologies and will be responsible for administering questionnaires to the study participants and providing clarifications whenever respondents require assistance. This rigorous approach to team selection and training aims to uphold the consistency and dependability of our research process. Three research assistants were engaged and given thorough training on data collection and ethical issues to guarantee the validity of the data collection process. These research assistants were recruited for their expertise in research methodologies and were responsible for administering questionnaires to the study participants and providing clarifications whenever respondents required assistance. This rigorous approach to team selection and training aimed to uphold the consistency and dependability of the research process.

3.11.3. Pretesting of Questionnaires

Before the main data collection, a pre-test was conducted among women visiting Mama Lucy Level Four Hospital in Nairobi, Kenya, following the receipt of ethical approval. This pre-test served a crucial role in assessing the questionnaire's feasibility and reliability, allowing for necessary adjustments based on the feedback received from participants. The primary

objective of this pretesting phase was to ensure that the questionnaire items were conveyed clearly and consistently, ensuring a uniform understanding among all respondents.

To achieve this, research assistants underwent training, as recommended by Kothari and Garg (2014), to facilitate the evaluation of the instruments' clarity and appropriateness. This proactive approach to pretesting enhanced the overall quality and reliability of the data collected during the main study.

3.12. Data Management and Analysis

After the collection of data, the data were cleaned and analyzed using the SPSS program (Statistical Package for the Social Sciences) version 26.0. The analysis encompassed both descriptive and inferential statistics to provide a comprehensive understanding of the generated data. Descriptive statistics, including measures such as mean, frequency, percentage, and standard deviation, were employed to summarize the responses obtained from the participants. Inferential statistics were utilized to delve deeper into the data, specifically to predict the associations between independent variables (such as levels of awareness, sociocultural factors, and psychological factors) and the dependent variable (cervical pre-cancer screening uptake). To achieve this, Chi-square tests were deployed to assess associations between categorical variables. Moreover, logistic regression analysis was conducted to identify the predictors of cervical pre-cancer screening uptake. The use of random sampling techniques in selecting research respondents ensured the validity of the statistical inferences drawn from the data. All statistical tests were two-tailed unless explicitly stated otherwise, with significance levels set at $p < 0.05$, signifying statistical significance. Logistic regression analysis was specifically employed to ascertain the factors

influencing cervical pre-cancer screening uptake, contributing valuable insights to the research findings.

3.13. Ethical Considerations

Prior to data collection, all necessary ethical and administrative approvals were obtained to ensure compliance with institutional and national research regulations. The study was approved by the Mount Kenya University Institutional Ethics Review Committee, as documented in the ethical clearance letter (Appendix IV). National research authorization was subsequently granted by the National Commission for Science, Technology and Innovation (NACOSTI) through a research permit (Appendix VI).

Additionally, permission to conduct the study at the facility level was obtained from the Mbagathi Level Four Hospital administration, which issued an official approval letter allowing access to participants and hospital services (Appendix VII). An introduction letter from Mount Kenya University was also provided to formally identify the researcher to authorities and stakeholders during data collection (Appendix V). These approvals and letters were presented at every stage of the research process to ensure transparency, adherence to ethical standards, and collaboration with the hospital and relevant government bodies.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study, addressing the specific objectives of assessing the awareness and uptake of cervical cancer screening services, identifying the barriers to screening, and evaluating the effectiveness of various interventions and cues in promoting screening among women in Kenya. The results are discussed in relation to the existing

literature, highlighting key themes and providing actionable insights for improving cervical cancer screening programs.

4.2 Demographic characteristics

4.2.1 Social Characteristics

Age of the participants

Table 4.1 provides a detailed breakdown of the age distribution of the participants in the study, categorized into five distinct age groups. The findings are as follows: The age group of 25 to 29 years represents the largest segment of the study participants, with 117 individuals, accounting for 48.8% of the total sample. This significant proportion suggests that nearly half of the study population falls within this younger age bracket. The next largest group is the 30 to 34 years category, which includes 41 participants and constitutes 17.1% of the total. Table 4.1 presents the findings.

Table 4.1: Age of the participants

Age of the participants	Frequency	Per cent
25 - 29 Years	117	48.8
30 - 34 Years	41	17.1
35 - 39 Years	35	14.6
40 - 44 Years	28	11.7
45 - 49 Years	19	7.9

Total	240	100.0

The study reveals a predominantly youthful participant demographic, with nearly half (48.8%) falling within the 25 to 29 years age group. This youthful skew has significant implications for the study's findings and their generalizability. The lower representation of older age groups, particularly those aged 45 to 49 years (7.9%), highlights the need to consider age-related factors such as health behaviours, awareness levels, and attitudes towards health interventions when interpreting results. Younger participants often exhibit different health behaviours and attitudes towards preventive measures, which can influence the study's outcomes. The younger women might be more receptive to health education and screening programs, aligning with findings from the Kenya Health Demographic Survey that showed higher screening rates among younger women in urban areas (Kangmennaang *et al*., 2018; Getachew *et al*., 2019; Wachira *et al*., 2016).

This youthful demographic trend reflects broader patterns seen in similar studies, where younger women demonstrate higher health-seeking behaviours and awareness levels (Rosser *et al*., 2015). Educational interventions have been shown to significantly improve screening uptake among younger women, suggesting that the predominance of younger participants could skew the results towards more positive health behaviours and higher awareness levels. However, this also underscores the need for targeted health interventions to enhance outreach to older age groups, who may face different barriers and facilitators to cervical cancer screening. Future studies and health programs should consider tailored approaches to engage older women, ensuring comprehensive representation and addressing specific health needs to design effective cervical cancer prevention strategies that benefit all age groups.

Marital status

Table 4.2 details the marital statuses of the study's participants. The findings divide people into five categories: single, married, separated, divorced, and widowed. The marital status distribution of the participants indicates that the majority are married, with 53.8% falling into this category. The next largest group is single participants, who account for 37.9% of the sample. The remaining groups - separated (5.0%), divorced (1.3%), and widowed (2.1%) - make up lesser proportions of the participant pool. The findings in Table 4.2 show a wide variation in marital status.

Table 4.2: Marital status of the respondents

Marital Status of the participants	Frequency (n)	Per cent (%)
Single	91	37.9
Married	129	53.8
Separated	12	5.0
Divorced	3	1.3
Widowed	5	2.1
Total	240	100.0

Cervical cancer is a major global health issue, causing around 340,000 deaths per year and ranking as the fourth most frequent cancer worldwide. Sub-Saharan Africa (SSA) has an extremely high mortality rate, with Kenya reporting 5,236 fatalities per year. The World Health Organisation (WHO) has underlined the necessity of addressing this issue, aiming to eliminate cervical cancer by 2030 with therapies such as cervical pre-cancer screening. Despite being a tried-and-true and cost-effective strategy, screening participation remains low, at around 12.9% in SSA and 16.4% in Kenya. Awareness levels are important in

determining screening uptake, and greater education levels are connected with higher screening rates. In contrast, low knowledge and educational attainment severely hamper screening efforts, underlining the significance of targeted educational campaigns.

Sociocultural and psychological factors also have a substantial impact on cervical pre-cancer screening rates. Cultural attitudes, fear, humiliation, and misconceptions about the screening process all contribute to low participation rates. Financial and logistical limitations complicate access to screening services. Effective health education programmes and policy initiatives are essential for tackling these concerns. Studies have demonstrated that educational interventions can significantly boost screening rates, emphasising the significance of a comprehensive approach. Furthermore, cues such as social influence, personal experiences, and supporting policy frameworks play critical roles in encouraging screening. To increase screening uptake, it is critical to address the perceived vulnerability and severity of cervical cancer, as well as self-efficacy and psychological hurdles, while also creating a supportive environment via education and legislation.

Religion

Figure 4.1 provides a detailed breakdown of the religious affiliation of the participants in the study. The findings categorize participants into two groups: Christian and Muslim. The religious affiliation findings show that the vast majority of the study participants are Christian, with 94.2% identifying as such. The Muslim participants make up a smaller portion of the sample, constituting 5.8%. This distribution highlights a predominantly Christian demographic within the study group. Figure 4.1 presents the findings.

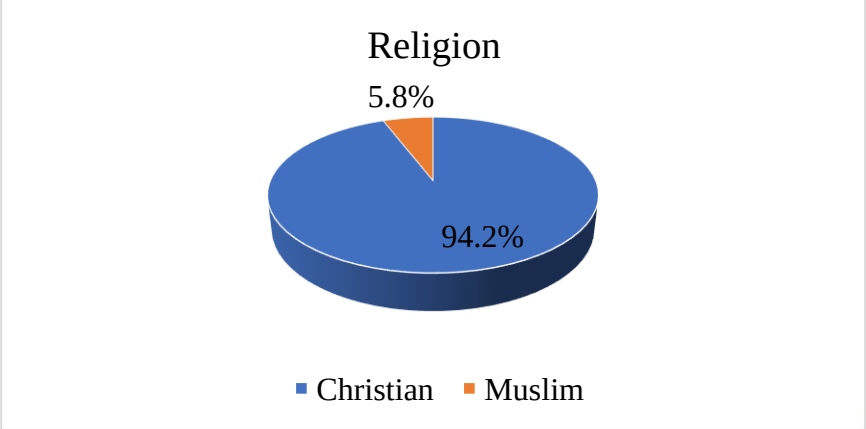

Figure 4.1: Religion

Figure 4.1 revealed that 94.2% of the participants identified as Christian, while only 5.8% identified as Muslim. This dominance of Christian participants highlights a significant religious homogeneity within the study sample. This finding is essential for understanding the cultural and social context in which the study was conducted. Religious beliefs and practices often influence health behaviours, including attitudes towards cervical cancer screening. The high percentage of Christian participants suggests that health interventions and messages tailored to this religious group may be more effective. This aligns with findings in the literature that emphasize the role of socio-cultural factors in health behaviour and the importance of considering these factors in health interventions (Binka *et al*., 2019; Modibbo *et al*., 2016).

Moreover, the limited representation of Muslim participants indicates a need for targeted strategies to ensure the inclusivity and effectiveness of health interventions across different religious groups. Understanding the religious composition helps tailor health messages and interventions to be culturally appropriate and effective. The predominantly Christian makeup of the sample suggests that Christian values and practices likely influence participants' perspectives and behaviours towards health services, including cervical cancer screening.

The study's focus on religious demographics aligns with previous research emphasizing the influence of religious beliefs on health behaviours and access to healthcare services (Kasraeian *et al*., 2020; Modibbo *et al*., 2016). Addressing these religious dynamics can enhance the effectiveness of health interventions and ensure they meet the needs of all community members.

While the sample was predominantly Christian, the study did not explore religious doctrine or practice as determinants of screening. As such, any differences should be interpreted cautiously and not assumed to represent theological influence. Future studies may explore how religious beliefs, across different denominations or faiths, influence perceptions and practices regarding cervical pre-cancer screening in more nuanced ways.

Number of Children

Table 4.3 presents the distribution of the number of children among the participants in the study. The findings reveal a diverse range of family sizes within the sample population. The most common number of children reported is two, with 65 participants, or 27.1% of the total sample, falling into this category. This is followed by participants with no children, accounting for 20.4% (49 participants), and those with one child, representing 18.3% (44 participants) of the sample. Additionally, 14.6% of participants (35 individuals) reported having three children, while 12.5% (30 participants) had four children. Smaller proportions of the population reported having larger families, with 4.6% (11 participants) having five children, 2.1% (5 participants) having six children, and a very small percentage, 0.4% (1 participant), reporting eight children. Table 4.3 presents the findings.

Table 4.3: Number of Children

Number of Children	Frequency (n)	Per cent (%)
None	49	20.4
One	44	18.3
Two	65	27.1
Three	35	14.6
Four	30	12.5
Five	11	4.6
Six	5	2.1
Eight	1	.4
Total	240	100.0

The study found in Table 4.3 that most participants had small to moderate-sized families, with two children being the most common family size. It was revealed that 20.4% of participants had no children and 18.3% had one child. This suggested that many were either in the early stages of family formation or chose to have fewer children due to economic reasons or personal preferences. This trend towards smaller family sizes may reflect broader demographic shifts and family planning choices. Participants with larger families, although fewer, highlighted the diversity in family planning and reproductive health choices, influenced by socio-economic factors, cultural norms, and individual preferences. These findings underscore the importance of considering family size when interpreting health behaviours and access to healthcare. The distribution of the number of children among participants provided valuable context for understanding how family dynamics might

influence health-seeking behaviours and access to reproductive health services. The study revealed a general tendency towards smaller family sizes, but also noted significant diversity, suggesting that family size could impact various aspects of participants' lives and health-related decisions. This diversity needed to be considered when analysing the findings and drawing conclusions to ensure a comprehensive understanding of the participants' health behaviours and needs.

Highest level of education

Table 4.4 shows the participants' educational levels, separated into primary, secondary, tertiary and other groups. The study showed that 45.8% of the participants had finished tertiary education. This indicated that about half of the participants had received education and thus had adequate access to health information and services. The study found that 31.3%, finished secondary school, suggesting that they completed high school but did not continue their education.

A lesser proportion, 15.0%, have only received primary education, which may make it more difficult for them to obtain health information and services. This population could benefit from tailored educational support. Furthermore, 7.9% fall into the "others" category, which could include vocational or informal education. This diverse range of educational backgrounds gives valuable context for understanding the participants' health behaviours and requirements. Table 4.4 presents the findings.

Table 4.4: The highest level of education

Highest level of education	Frequency (n)	Per cent (%)
Primary	36	15.0
Secondary	75	31.3
Tertiary	110	45.8
Others	19	7.9
Total	240	100.0

The findings in Table 4.4 indicated a relatively high level of educational attainment among the participants, with the majority having completed secondary or tertiary education. Participants with secondary education represented a substantial portion of the sample, highlighting a group that might have varying levels of health literacy and access to resources compared to those with tertiary education. The presence of participants with only primary education highlighted a segment of the population that might need additional support to access and understand health information and services effectively (Getahun *et al*., 2013; Yimer *et al*., 2021).

Understanding the educational background of the participants was crucial for interpreting the study's findings accurately. Education level significantly impacted health behaviours, access to healthcare, and overall health outcomes. Higher educational attainment was often associated with better health literacy and proactive health behaviours, while lower educational levels might correlate with limited access to information and resources. This was corroborated by findings from various studies indicating that educational attainment emerged as a significant determinant of cervical pre-cancer screening uptake, with highly

educated women showing an increased likelihood of undergoing screening compared to those with less education (Desta *et al*., 2021; Swanson *et al*., 2018).

The highest level of education among participants in the study varied, with a notable proportion having attained tertiary education. This diversity in educational attainment should be considered when analysing the findings and developing health interventions. Strategies should be tailored to address the specific needs and capabilities of different educational groups within the population, ensuring that health education initiatives are inclusive and accessible to all (Mwenda *et al*., 2022; Ampofo *et al*., 2020).

4.2.2 Economic Characteristics

Current occupation

Figure 4.2 reveals that of the 240 participants, 52.9% were in formal employment, while 47.1% were informally employed. Figure 4.2 summarises the findings.

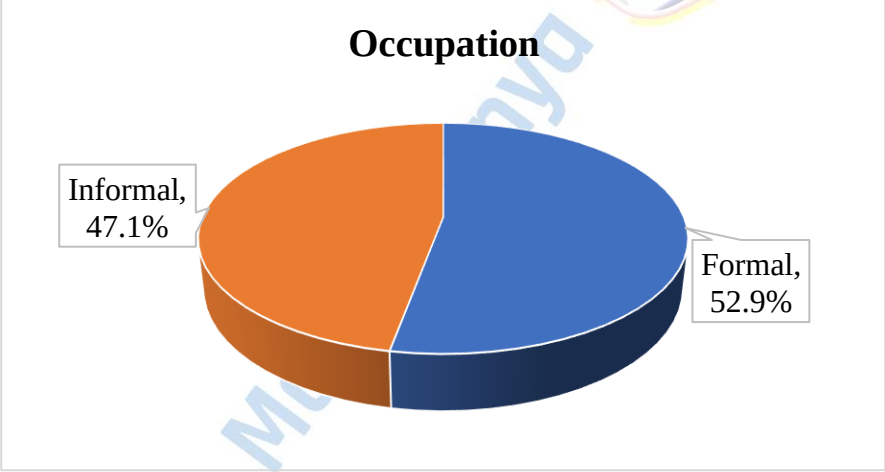

Figure 4.2: Current occupation

Figure 4.2 findings showed that a simple majority of participants were in formal employment. Getachew *et al*. (2013) found that formal employment status positively influences participation in health screening programmes. Conversely, individuals in informal occupations often face barriers such as job insecurity, irregular income, and lack of health

insurance, which hinder their ability to afford and prioritize health screenings. Mwenda *et al*. (2022) noted that people in informal sectors may have less flexible schedules and limited financial resources, exacerbating their challenges in accessing regular health check-ups. Swanson *et al*. (2018) emphasized that individuals with lower socioeconomic status, often linked to informal employment, face significant challenges in accessing healthcare, including financial constraints and limited health facility access. Adegboyega *et al*. (2019) suggested that health policies should provide financial support, flexible screening hours, and mobile health services. Community-based health education and outreach programs can also raise awareness and facilitate access to screening services among those in informal employment.

Average monthly income

Table 4.5 provides an overview of the average monthly income of the participants in the study. The findings categorize income into three brackets: KES 0 – 30,000, KES 30,001 – 100,000, and KES greater than 100,000. The findings revealed that the majority of participants fell into the lower income bracket, with 71.7% (172 individuals) earning between KES 0 and 30,000 per month. A smaller group, 26.3% (63 individuals), fell into the middle-income bracket, earning between KES 30,001 and 100,000. Only a minority, 2.1% (5 individuals), earned more than KES 100,000 per month. Table 4.5 presents the findings.

Table 4.5: Average monthly income

Average monthly income	Frequency (n)	Per cent (%)
Kes 0 -30,000	172	71.7
Kes 30,001 - 100,000	63	26.3

Kes > 100,000	5	2.1
Total	240	100.0

The findings in Table 4.5 indicated that the study population predominantly consisted of individuals with lower income levels, with a significant majority earning between KES 0 and 30,000. The middle-income bracket, comprising 26.3% of participants, represented a smaller segment with relatively better access to resources. The smallest group, earning more than KES 100,000 per month, made up just 2.1% of the sample, highlighting significant income disparity within the study population.

Understanding the income distribution was crucial for accurately interpreting the study's findings, as income levels could significantly influence health behaviours, access to healthcare and overall quality of life. The predominance of low-income participants suggested financial barriers might have been a major factor affecting their health outcomes and access to necessary services. The observed income disparity showed the need for inclusive strategies catering to all economic segments within the study population. The relationship between income levels and health behaviours was particularly evident in the context of cervical pre-cancer screening. According to Yimer *et al*. (2021), the uptake of cervical cancer screening in Sub-Saharan Africa was alarmingly low, with financial constraints being a primary barrier. Similarly, Owenga and Nyambedha (2018) highlighted that woman from low-income households in Western Kenya faced significant financial hurdles, such as the costs associated with travel and diagnostic tests, which impeded their access to cervical pre-cancer screening services. This was consistent with findings by Burrowes *et al*. (2022), who found that the lack of necessary equipment and resources in healthcare settings further exacerbated the situation for low-income individuals.

Moreover, the significant income disparity observed in the study population indicated a pressing need for targeted interventions. Biddell *et al*. (2021) suggested that providing financial assistance to low-income women could substantially improve their access to screening services. This approach was supported by findings from Abiodun *et al*. (2014), who demonstrated that educational interventions, coupled with financial support, significantly increased screening uptake rates. Therefore, addressing the financial barriers faced by low-income participants was essential for improving their health outcomes and ensuring equitable access to cervical pre-cancer screening services.

Furthermore, the findings by Ampofo *et al*. (2020) and Desta *et al*. (2021) underscored the role of socioeconomic status in determining health behaviours and awareness. Women with higher education levels, often associated with better income, exhibited a higher likelihood of undergoing cervical pre-cancer screening. This correlation between education, income, and health behaviour emphasised the multifaceted nature of healthcare access and the importance of addressing both economic and educational disparities.

4.3 Cervical pre-cancer screening rates among women

4.3.1 Awareness of Cervical Pre-Cancer Screening

Figure 4.3 presents findings on the awareness of cervical pre-cancer screening among the participants in the study. The findings show that a significant majority, 80.8% (194 participants), have heard about cervical pre-cancer screening. This high level of awareness indicates that most participants are informed about the availability and importance of this health service. Awareness is crucial for the success of screening programs, as it encourages participation and facilitates early detection of pre-cancerous conditions.

However, the findings in Figure 4.3 also revealed that 19.2% (46 participants) have not heard about cervical pre-cancer screening. This means that nearly one-fifth of the study population lacks awareness of this critical health service. The gap in awareness highlights the need for targeted educational campaigns and outreach programs to ensure that information about cervical pre-cancer screening reaches all segments of the population, especially those who are currently uninformed. Figure 4.3 illustrates the findings.

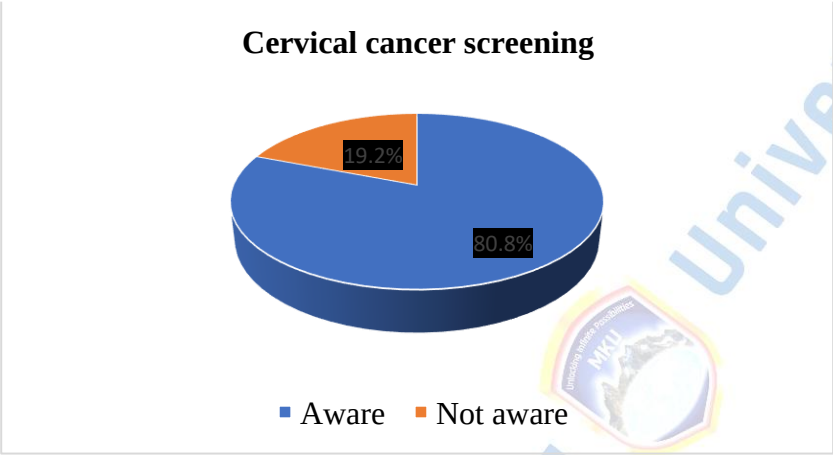

Figure 4.3: Awareness of Cervical Pre-Cancer Screening

Figure 4.3, shows that 80.4% of the participants were knowledgeable about cervical precancer screening. This demonstrates the viability of educational initiatives on cervical cancer screenings. Cervical cancer screening programs rely on people knowing about them so that they can participate and possibly conduct early diagnosis of precancerous conditions. This is a crucial component towards efficient treatment and prevention of cervical cancer (WHO, 2018). Nonetheless, almost 1 out of every five participants had no idea about cervical precancer screening; therefore, this creates a niche that must be filled with community education campaigns as well as outreach activities. This gap reveals that some parts of the population are not informed even though generally there is high awareness indicating that

there should be more inclusive information dissemination regarding the importance and presence of cervical pre-cancer screening (Mwenda *et al*., 2022).

Emerging themes on where did you first hear or learn about cervical pre-cancer screening

The findings show the emerged themes on where participants first heard or learned about cervical pre-cancer screening:

Healthcare Settings: Healthcare settings were the primary source of information, with 24.6% of participants first hearing about cervical pre-cancer screening there, including hospitals (9.6%), clinics (3.8%), and MCH clinics (7.5%).

Media and Advertisements: Media and advertisements informed 11.7% of participants about cervical pre-cancer screening, with social media (2.9%), radio (2.9%), and television (3.8%) being key sub-themes.

Educational Institutions: Educational institutions accounted for 4.1% of the responses, with schools being the most common sub-theme (2.5%).

Community and Social Networks: Community and social networks were cited by 3.8% of participants, with friends being the most frequently mentioned source (2.5%).

Religious and Community Events: Religious and community events were mentioned by 1.3% of participants, all related to church settings.

Family and Personal Networks: Family and personal networks informed 1.3% of participants, including family members (0.8%) and neighbours (0.4%).

No Knowledge or Awareness: A significant portion, 5.8% of participants, reported having no prior knowledge or awareness of cervical pre-cancer screening.

Healthcare settings emerged as the primary source of information about cervical pre-cancer screening, with many participants first learning about it in hospitals, clinics, and Maternal

and Child Health (MCH) clinics. This finding aligns with the emphasis on healthcare environments as crucial venues for disseminating health information, as highlighted by the Ministry of Health guidelines (MOH, 2018). Hospitals were the most frequently mentioned setting, reflecting their central role in health education. Additionally, clinics and MCH clinics were significant sources, indicating that integrated health services effectively raise 4awareness about cervical pre-cancer screening.

Media and advertisements also played a vital role in informing participants about cervical pre-cancer screening, with channels such as social media, radio, and television being key sources. This underscores the impact of mass media on health communication, as noted by Rosser *et al*. (2015), who found that media campaigns significantly improve awareness and screening uptake. Educational institutions, community and social networks, and religious events also contributed to spreading information, although to a lesser extent. However, the fact that 5.8% of participants had no prior knowledge of cervical pre-cancer screening highlights a critical gap that needs to be addressed. This gap underscores the necessity for targeted educational campaigns to ensure comprehensive awareness across all segments of the population (Mwenda *et al*., 2022).

4.3.2 Cervical Cancer Screening History Among Participants

The findings in Figure 4.4 present the history of cervical cancer screening among the participants in the study. Of the total sample of 240 participants, 39.6% (95 participants) reported that they had been screened for cervical cancer before. In contrast, 60.4% (145 participants) indicated that they have never been screened for cervical cancer. Figure 4.4 illustrates the findings.

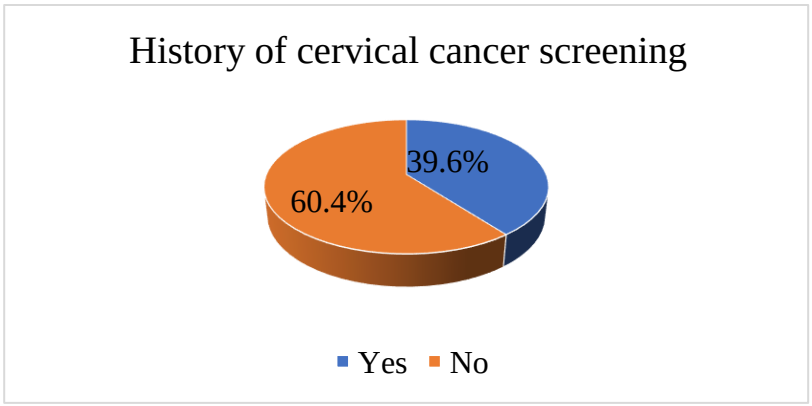

Figure 4.4: Cervical Cancer Screening History Among Participants

The findings in Figure 4.4 revealed a significant gap in cervical cancer screening within the study population, with 60.4% of participants never having been screened. This substantial percentage indicates that, despite efforts to raise awareness and promote screening, barriers still exist that prevent women from accessing or opting for cervical cancer screening. These barriers could be related to socio-cultural factors, financial constraints, or lack of adequate health education, as suggested by previous studies (Mwenda *et al*., 2022; Swanson *et al*., 2018).

Conversely, 39.6% of the participants had been screened for cervical cancer, which is encouraging and indicates that a notable portion of the population is engaging in preventive health behaviours. This percentage, while promising, also underscores the need for further efforts to improve screening rates. Studies have shown that higher educational attainment and awareness levels are critical in increasing screening uptake (Yimer *et al*., 2021; Kangethe *et al*., 2020). Therefore, targeted interventions focusing on education, reducing financial barriers, and addressing socio-cultural obstacles are essential to enhance screening rates and ultimately reduce the incidence and mortality associated with cervical cancer.

4.3.3 Timing of Last Cervical Cancer Screening Among Participants

Table 4.6 provides detailed information about the timing of the last cervical cancer screening among the participants. The findings reveal that a substantial majority of the participants, 61.7% (148 individuals), have never been screened for cervical cancer. This is a significant finding, indicating a major gap in cervical cancer screening within the study population. Despite efforts to promote awareness and the importance of screening, a large portion of the population has not engaged in this crucial preventive measure. Table 4.6 presents the findings.

Table 4.6: Timing of Last Cervical Cancer Screening Among Participants

Last screened	Frequency	Per cent
1 year ago	50	20.8
2 years ago	11	4.6
3 years ago	12	5.0
4 years ago	5	2.1
5 years or more	14	5.8
Never	148	61.7
Total	240	100.0

Among those who have been screened, the most common time frame was within the past year, with 20.8% having undergone screening during this period. This suggests that recent screening efforts have been somewhat effective in reaching a segment of the population, reflecting the impact of ongoing awareness campaigns and health interventions (Mwenda *et al*., 2022). However, the percentage of participants who were screened decreased

significantly for those who were screened two or more years ago. This decline in screening rates over time indicates a potential gap in sustained engagement and follow-up for cervical cancer screening.

Specifically, 4.6% were screened two years ago, 5.0% three years ago, 2.1% four years ago, and 5.8% were screened five or more years ago. These findings highlight the need for continuous and reinforced efforts to maintain regular screening practices among women. Studies have shown that consistent reminders and follow-up initiatives are crucial for sustaining high screening rates and ensuring early detection and treatment of cervical precancer conditions (Yimer *et al*., 2021; Kangethe *et al*., 2020). Addressing barriers that prevent regular screening, such as accessibility, financial constraints, and socio-cultural factors, is essential to improve long-term screening adherence and reduce the incidence and mortality associated with cervical cancer.

4.3.4. Perception of Hospital Costs for Cervical Cancer Screening

The findings Figure 4.5 presents the participants' perceptions regarding the cost of getting screened for cervical cancer at the hospital. The findings reveal that 20.0% (48 participants) believe there is a hospital cost associated with cervical cancer screening, while 80.0% (192 participants) believe there is no cost. The total sample consists of 240 participants. Figure 4.5 illustrates the findings.

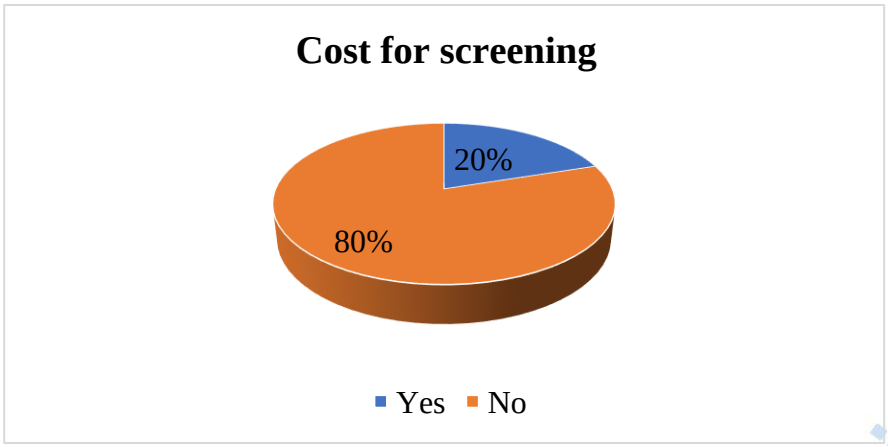

Figure 4.5: Perception of Hospital Costs for Cervical Cancer Screening

The findings presented in Figure 4.5 show that 20.0% of the participants believed there was a hospital cost associated with cervical cancer screening. This perception might reflect personal experiences or misinformation about the screening process and its associated expenses. Addressing these perceptions is crucial, as financial barriers can significantly impact health-seeking behaviours and deter women from accessing preventive services (Mwenda *et al*., 2022).

Conversely, 80.0% of the participants believed that cervical cancer screening at the hospital was free of cost. This indicates a prevalent belief among the majority that financial constraints do not impede access to screening services. This positive perception is essential for promoting widespread participation in cervical cancer screening programs. However, ensuring that accurate information about the availability and cost of screening services reaches all segments of the population remains critical. Misconceptions about costs could still prevent some women from seeking screening, highlighting the need for continuous and clear communication from healthcare providers and public health campaigns (Nyangasi *et al*., 2018).

Themes cost of cervical cancer screening

Perception of the Cost of Cervical Cancer Screening

The majority, 80%, believed there was no cost for cervical cancer screening, indicating awareness of free or subsidized services (Nyangasi *et al*., 2018). However, 20% perceived a cost, highlighting a need for better education on available free services (Mwenda *et al*., 2022).

Insights into Participants' Perceptions

Most participants (72.9%) believed screening at Mbagathi Level Four Hospital was free, reflecting effective public health messaging (Nyangasi *et al*., 2018). Yet, 2.1% perceived specific costs and 15% were uncertain, indicating a need for consistent communication about the true cost or lack thereof for screening services (Mwenda *et al*., 2022). Improved information dissemination could mitigate misconceptions and increase screening uptake.

4.3.5 Frequency of Cervical Cancer Screening Among Participants

Table 4.7 provides insights into participants' perceptions regarding the recommended frequency of cervical cancer screening. The findings show that a substantial majority of the participants, 84.2% (202 participants), believe that cervical cancer screening should be done annually. This indicates a strong awareness of the need for regular screening, which is crucial for early detection and prevention of cervical cancer.

Table 4.7 shows that a smaller proportion of participants, 6.7% (16 participants), believe that screening should be done every two years, and another 6.7% (16 participants) think it should be done every three years. These intervals are also consistent with some health guidelines, which recommend less frequent screening for individuals with lower risk factors or those who have consistently had negative results. It was further revealed in Table 4.13 that very

few participants, 0.8% (2 participants), suggest a screening frequency of every four years, and 1.7% (4 participants) recommend every five years. These responses are less common and may reflect a lack of knowledge about the optimal screening intervals recommended by health authorities. Table 4.7 presents the findings.

Table 4.7: Frequency of Cervical Cancer Screening Among Participants

Frequency of screening	Frequency	Per cent
After 1 Years	202	84.2
After 2 Years	16	6.7
After 3 Years	16	6.7
After 4 Years	2	.8
After 5 Years	4	1.7
Total	240	100.0

The findings from Table 4.7 reveal that a substantial majority of the participants, 84.2%, believed that cervical cancer screening should be conducted annually. This high percentage indicates a strong awareness among the respondents regarding the importance of regular screening for early detection and prevention of cervical cancer. Annual screening is a recommendation aligned with many health guidelines for women at higher risk or those who have had previous abnormal results, reflecting the participants' understanding of maintaining regular health checks to mitigate the risks associated with cervical cancer (Mwenda *et al*., 2022).

A smaller proportion of participants believed that screening should occur every two to three years, with 6.7% endorsing a biennial frequency and another 6.7% suggesting a triennial interval. These recommendations are also consistent with health guidelines for individuals with lower risk factors or those with a history of negative screening results. Very few participants suggested longer intervals, with 0.8% recommending screening every four years and 1.7% every five years. These less common responses may indicate gaps in knowledge about the optimal screening intervals as recommended by health authorities, underscoring the need for continuous education to ensure that all women are informed about the most effective screening practices (Yimer *et al*., 2021).

Emerging Themes Understanding of Cervical Cancer Screening Among Participants

The findings provide a view of participants' understanding of how cervical cancer screening is conducted, revealing a range of awareness levels and knowledge about the screening process.

Specific Screening Methods

A significant portion of participants (33.8%) described specific cervical cancer screening methods, with 27.5% mentioning the Pap smear test as the primary method, highlighting its prominence (Mwenda *et al*., 2022). Additionally, 6.7% referred to VIA/VILI, and a small subset (0.8%) mentioned biopsy, indicating awareness of various screening procedures.

General Descriptions of the Procedure

About 26.3% provided general descriptions of the screening process, including the use of a speculum (1.7%) and sample collection (5.0%) (Yimer *et al*., 2021). However, 40.0% of

respondents did not know or were uncertain about the procedure, indicating a need for targeted educational interventions to improve awareness and uptake.

4.3.6 Interest in Cervical Cancer Screening Among Participants

Figure 4.6 provides valuable insights into the participants' interest in taking a cervical cancer screening test. The findings indicate that a significant majority of the participants, 80.8% (194 individuals), expressed a willingness to undergo cervical cancer screening. This high level of interest is a positive sign, reflecting a strong awareness of the importance of early detection and a proactive attitude towards preventive health measures. Conversely, 19.2% of the participants (46 individuals) indicated that they were not interested in taking a cervical cancer screening test. This minority represents a challenge for public health initiatives, as these individuals may be at a higher risk of undetected cervical cancer due to their reluctance to participate in screening programs. Figure 4.6 illustrates the findings.

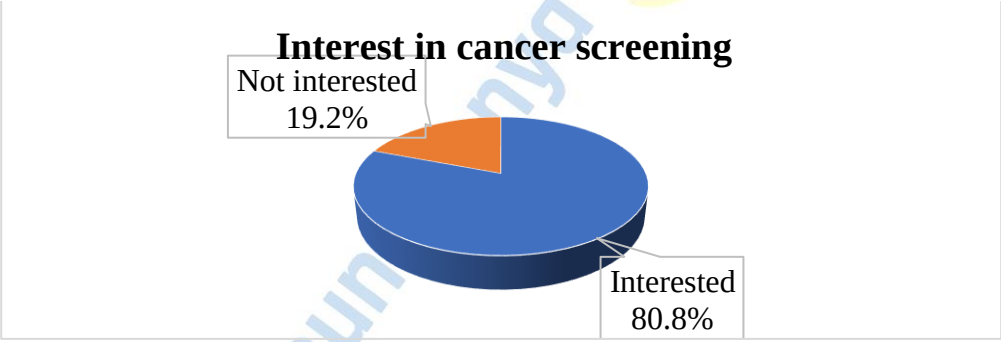

Figure 4.6: Interest in Cervical Cancer Screening Among Participants

Findings in Figure 4.6 indicated that a significant majority of the participants, 80.8%, were ready to undertake cervical cancer screening. This show of high level of interest was a good gesture that demonstrated them being aware of early detection and taking initiatives towards disease prevention (Mwenda *et al*., 2022). However, on the other hand, there was a group of people who showed no interest in taking part in the test for cervical cancer with 19.2%. This

posed some challenges to public health drives as these individuals may be at greater risk for undetected cervical cancer due to their reluctance to participate in screening programs (Yimer *et al*., 2021). Therefore, this called for focused information campaigns targeting barriers or misconceptions which hinder access to primary care services amongst different groups of people.

Reasons for Not Being Interested in Cervical Cancer Screening

The findings provide detailed insights into why some participants are not interested in taking a cervical cancer screening test. The reasons can be categorized into several main themes, each reflecting different concerns and perceptions among the participants.

Lack of Perceived Need

A small number of participants, totalling 1.7%, did not perceive a need for cervical cancer screening. Within this group, reasons included not feeling any symptoms or signs associated with the condition, believing they were not at risk, or having no family history of cervical cancer. One participant mentioned, "Because she is not feeling like she has the symptoms or signs associated with the condition," indicating a reliance on symptom presentation to gauge the need for screening.

Fear and Discomfort

A significant portion of participants, 9.2%, cited fear and discomfort as their reasons for not undergoing screening. This theme includes various fears such as fear of the disease if diagnosed, fear of the unknown, and fear of the procedure itself. For instance, one participant mentioned, "Fear of the disease if diagnosed with the disease," highlighting the anxiety surrounding a potential cancer diagnosis. Additionally, many participants found the screening procedure uncomfortable or intrusive. Statements like "The procedure is scary and

some health personnel are not gentle" and "It's not a comfortable method" reflect concerns about the physical discomfort and how the procedure is conducted.

Recent Screening or Intention to Screen Later

About 5.0% of participants indicated that they had recently undergone screening or intended to do so later. This group included those who had been screened within the past year or planned to get screened in the future. Responses such as "I took one last month" and "Maybe later in life" illustrate that while these participants are not currently interested in screening, they do recognize its importance and have either recently taken the test or plan to take it later.

Stigmatization and Stress

Stigmatization and stress were reasons for 2.1% of participants. These individuals were influenced by societal stigma or personal stress related to the screening process. For example, one participant mentioned, "Stress after being diagnosed with the condition and stigma," indicating that previous experiences and societal perceptions can significantly impact the willingness to undergo screening. Additionally, another participant shared a traumatic past medical experience that contributed to their reluctance: "I had an early pregnancy and when I went to the hospital with false labour, the doctor on duty measured my V without lubricating his fingers. It was so horrible I fear any tests on my vagina since." **The intrusiveness of the Procedure**

One participant (0.4%) specifically mentioned the intrusive nature of the test as a deterrent. The statement, "I find the test so intrusive. I wish there was another way to test," highlights a desire for less invasive screening methods.

4.3.7 Cervical pre- cancer screening

The findings presented in Table 4.8 delve into the respondents' perspectives on various statements concerning cervical pre-cancer screening. A substantial majority (88.3%) strongly agree that cervical cancer can be cured if identified early, showcasing a keen awareness of the significance of early detection. A significant majority (60.8%) strongly believe they are at risk of developing cervical cancer, highlighting a notable awareness of personal risk. A considerable portion (62.5%) strongly agrees with this statement, indicating a good understanding of the lifetime risk associated with cervical cancer. The majority (64.6%) strongly agree that vaccination against cervical cancer is possible, demonstrating awareness of preventive measures. A significant majority (75.0%) strongly agree that cervical cancer is life-threatening, showing a good grasp of the severity of the disease. There is a mixed response, with a sizable portion (45.0%) strongly disagreeing and only 17.1% strongly agreeing, suggesting uncertainty or lack of knowledge regarding self-sampling for cervical screening. The majority (56.3%) strongly agree with aggregate measures related to cervical pre-cancer screening, indicating positive attitudes and awareness towards screening practices. Table 4.8 presents the findings.

Table 4.8: Cervical pre-cancer screening

	strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
Cervical Cancer is curable if detected early	1	0.4%	1	0.4%	3	1.3%	23	9.6%	212	88.3%

I am at risk of getting cervical cancer	8	3.3%	12	5.0%	29	12.1%	45	18.8%	146 60.8%
Women have up to 80% lifetime risk of getting cervical cancer	1	0.4%	5	2.1%	29	12.1%	55	22.9%	150 62.5%
You can be vaccinated against getting cancer of the cervix	13	5.4%	7	2.9%	26	10.8%	39	16.3%	155 64.6%
cancer of the cervix is a life-threatening disease	2	0.8%	4	1.7%	14	5.8%	40	16.7%	180 75.0%
One can collect her cervical sample on her own for cervical screening test	108	45.0%	25	10.4%	42	17.5%	24	10.0%	41 17.1%
Aggregate cervical pre-cancer screening	0	0.0%	2	0.8%	23	9.6%	80	33.3%	135 56.3%

The findings presented in Table 4.8 delved into the respondents' perspectives on various statements concerning cervical pre-cancer screening. A substantial majority (88.3%) strongly agreed that cervical cancer could be cured if identified early, showcasing a keen awareness of the significance of early detection (Mwenda *et al*., 2022). A significant majority (60.8%) strongly believed they were at risk of developing cervical cancer, highlighting a notable awareness of personal risk (Yimer *et al*., 2021). Additionally, a

considerable portion (62.5%) strongly agreed with this statement, indicating a good understanding of the lifetime risk associated with cervical cancer.

The majority (64.6%) strongly agreed that vaccination against cervical cancer was possible, demonstrating awareness of preventive measures (WHO, 2018). A significant majority (75.0%) strongly agreed that cervical cancer was life-threatening, showing a good grasp of the severity of the disease. However, there was a mixed response regarding self-sampling for cervical screening, with a sizable portion (45.0%) strongly disagreeing and only 17.1% strongly agreeing, suggesting uncertainty or lack of knowledge about this option. Lastly, the majority (56.3%) strongly agreed with aggregate measures related to cervical pre-cancer screening, indicating positive attitudes and awareness towards screening practices (Ndejjo *et al*., 2016).

4.3.8 Means and Standard Deviation for Cervical pre-cancer screening rate

Table 4.9 presents the assessment of the awareness level regarding cervical pre-cancer screening among women attending Mbagathi Level Four Hospital. It includes the mean and standard deviation for various statements related to cervical cancer and its prevention, reflecting key aspects such as curability, risk perception, vaccination, and self-sampling for screening.

The mean score of 4.85 indicated that nearly all respondents strongly agreed that cervical cancer is curable if detected early. The very low standard deviation of 0.478 showed a high level of consensus among the respondents. The mean score of 4.29 suggested that a majority of the respondents agreed they are at risk of getting cervical cancer, with a higher standard

deviation of 1.073 indicating some variability in risk perception. With a mean score of 4.45, there was strong agreement among respondents that women have up to an 80% lifetime risk of getting cervical cancer, supported by a relatively low standard deviation of 0.817. The mean score of 4.32 indicated that most respondents agreed it is possible to be vaccinated against cervical cancer, but the higher standard deviation of 1.124 suggested variability in awareness about the HPV vaccine. A mean score of 4.63 reflected strong agreement that cervical cancer is a life-threatening disease, with a relatively low standard deviation of 0.742 indicating high agreement on the seriousness of the disease. The mean score of 2.44 indicated that respondents were generally neutral or unsure about the possibility of collecting their cervical sample for a screening test, with a high standard deviation of 1.543 suggesting significant variability in responses.

The aggregate mean score of 4.45 indicated that overall, respondents had a high level of awareness about cervical pre-cancer screening. The relatively low standard deviation of 0.701 suggested consistent awareness across the various statements, with most respondents showing strong agreement on key aspects of cervical cancer and its prevention. Table 4.9 presents the findings.

Table 4.9: Means and Standard deviation for Cervical cancer screening rate

	N			Std.
	Valid	Missing	**Mean**	**Deviation**
Cervical Cancer is curable if detected early	240	0	4.85	.478
I am at risk of getting cervical cancer	240	0	4.29	1.073

Women have up to 80% lifetime risk of getting cervical cancer	240	0	4.45	.817
You can be vaccinated against getting cancer of the cervix	240	0	4.32	1.124
cancer of the cervix is a life-threatening disease	240	0	4.63	.742
One can collect her cervical sample on her own for cervical screening test	240	0	2.44	1.543
Aggregate cervical pre-cancer screening	240	0	4.45	.701

The mean score of 4.85 indicated that nearly all respondents strongly agreed that cervical cancer was curable if detected early. The very low standard deviation of 0.478 showed a high level of consensus among the respondents, reflecting strong awareness and confidence in the efficacy of early detection and treatment. This aligns with findings from Getahun *et al*. (2013), who also reported high levels of awareness about the curability of early-detected cervical cancer among women in Sub-Saharan Africa (SSA).

The mean score of 4.29 suggested that a majority of the respondents agreed they were at risk of getting cervical cancer. However, the higher standard deviation of 1.073 indicated some variability in risk perception, with a significant number of respondents strongly agreeing while others were less certain. Similar variability in risk perception was observed by Yimer *et al*. (2021) in their systematic review, highlighting differences in individual awareness and personal risk assessment.

With a mean score of 4.45, there was strong agreement among respondents that women had up to an 80% lifetime risk of getting cervical cancer. The relatively low standard deviation of 0.817 indicated consistent awareness of this statistic among the respondents. This

consistent awareness is corroborated by a study conducted in Ethiopia by Desta *et al*. (2021), which found a similar understanding of lifetime risk among women.

The mean score of 4.32 indicated that most respondents agreed it was possible to be vaccinated against cervical cancer. However, the higher standard deviation of 1.124 suggested variability in awareness about the availability and efficacy of the HPV vaccine, pointing to a need for more education on this preventive measure. This observation was echoed by Wachira *et al*. (2016), who identified gaps in awareness about HPV vaccination in Western Kenya.

A mean score of 4.63 reflected strong agreement that cervical cancer was a life-threatening disease. The relatively low standard deviation of 0.742 indicated a high level of agreement among respondents about the seriousness of the disease. This finding is in line with the results reported by Rositch *et al*. (2012), who also found high awareness of the severity of cervical cancer among women in Nairobi.

The mean score of 2.44 indicated that respondents were generally neutral or unsure about the possibility of collecting their cervical sample for a screening test. The high standard deviation of 1.543 showed significant variability in responses, suggesting a lack of awareness or mixed beliefs about self-sampling methods. This lack of awareness regarding self-sampling was similarly noted by Abdikarim *et al*. (2017), who observed that many women in Kenya were unaware of self-sampling options for cervical cancer screening. The aggregate mean score of 4.45 indicated that overall, respondents had a high level of awareness about cervical pre-cancer screening. The relatively low standard deviation of 0.701 suggested consistent awareness across the various statements, with most respondents showing strong agreement on key aspects of cervical cancer and its prevention. These

findings are consistent with the broader literature, including studies by Nyangasi *et al*. (2018) and Mwenda *et al*. (2022), which highlighted high levels of awareness about cervical cancer screening in Kenya, albeit with some areas needing further education and outreach.

4.4 Level of awareness of cervical pre-cancer screening among women

4.4.1 Heard about cervical cancer

The findings in Figure 4.7 indicate that a majority of participants, 90.8% (218 people), have heard of cervical cancer. In contrast, only 9.2% (22 people) have not heard of it. This suggests that the individuals are highly knowledgeable about cervical cancer. Figure 4.7 shows the results.

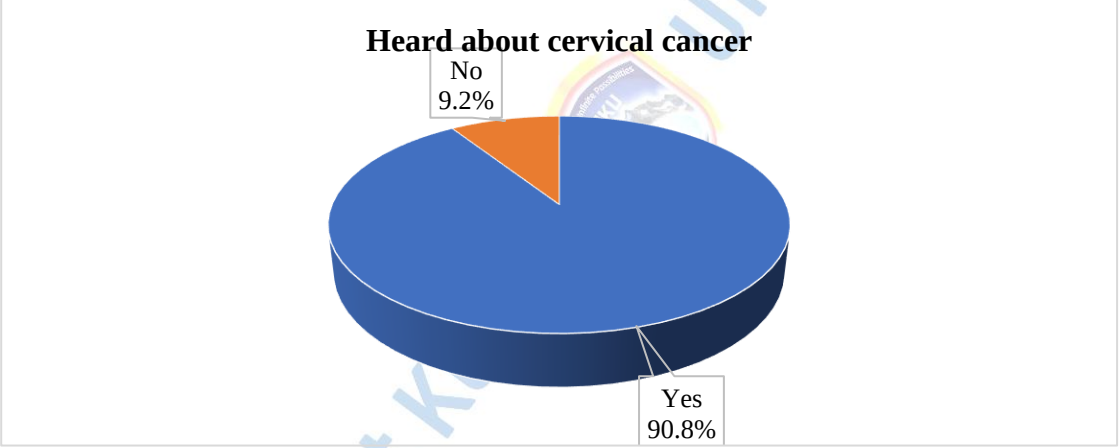

Figure 4.7: Heard of cervical cancer

The findings in Figure 4.7 indicated that a majority of participants, 90.8% (218 people), had heard of cervical cancer, whereas only 9.2% (22 people) had not. This high level of awareness suggested that the individuals were highly knowledgeable about cervical cancer. Figure 4.6 shows the results. Understanding the level of awareness among women was crucial for interpreting the study's findings, particularly in the context of cervical pre-cancer screening uptake. The high awareness levels observed aligned with the notion that awareness

is a significant determinant of screening behaviour. Getachew *et al*. (2019) found a direct correlation between awareness and screening rates, highlighting that individuals with higher awareness were more likely to participate in screening programmes. This was further supported by the findings of Wachira *et al*. (2016), who noted that low awareness was a significant barrier to screening in rural western Kenya.

Despite the high awareness of cervical cancer, the actual uptake of cervical pre-cancer screening often remained low. This discrepancy suggested that while awareness was necessary, it was not sufficient on its own to ensure high screening rates. For instance, Kangethe *et al*. (2020) discovered that although 84% of women living with HIV at Kenyatta National Hospital were aware of cervical pre-cancer screening, only 45% had been screened. This indicated that other factors, such as financial constraints and psychological barriers, also played a crucial role in influencing screening uptake.

4.4.2 Odds Ratio of having heard of cervical cancer and demographic characteristics

Table 4.10 provides an analysis of the odds ratio (OR) of participants having heard of cervical cancer, considering various demographic characteristics. The key variables include age, marital status, religion, number of children, highest level of education completed, current occupation, and average monthly income. The odds ratio, along with the 95% confidence interval (CI), is used to interpret the association between each demographic characteristic and the likelihood of having heard of cervical cancer.

The odds ratios provided valuable insight into how different demographic characteristics were associated with the likelihood of having heard of cervical cancer in Table 4.10. The most statistically significant finding was the higher likelihood of participants with formal occupations having heard of cervical cancer, with an odds ratio of 2.624 (95% CI: 1.029 –

6.690). This indicated that individuals employed in formal sectors were significantly more aware of cervical cancer compared to those in informal occupations. This finding was consistent with previous research that suggested formal employment often correlates with better access to health information and services (Okolie *et al*., 2022).

In contrast, other demographic characteristics such as age, marital status, religion, number of children, education level and income did not show statistically significant associations with awareness of cervical cancer. The odds ratio for participants aged ≤34 years compared to those aged >34 years was 1.112 (95% CI: 0.446–2.770), suggesting a slightly higher likelihood of younger participants having heard of cervical cancer, but this was not statistically significant. Similarly, the odds ratio for non-married participants was 1.270 (95% CI: 0.521–3.095) compared to married participants, indicating a non-significant higher likelihood of awareness among non-married individuals.

Religious affiliation showed an odds ratio of 1.717 (95% CI: 0.359–8.216) for Christian participants compared to Muslim participants. Despite suggesting that Christians were more likely to have heard of cervical cancer, the wide confidence interval rendered this finding statistically insignificant. This result highlighted the need for targeted educational efforts across different religious groups to ensure widespread awareness.

The number of children also did not significantly impact awareness, with an odds ratio of 1.694 (95% CI: 0.480–5.974) for participants with no children compared to those with one or more children. Similarly, educational attainment showed an odds ratio of 0.529 (95% CI: 0.067–4.165) for those with formal education versus informal education, indicating no significant difference in awareness levels based on education.

Income level was another variable that did not show a significant association, with an odds ratio of 0.944 (95% CI: 0.353–2.522) for participants earning ≤KES 30,000 compared to those earning more than KES 30,000. This suggested that income, within the context of this study, might not be a strong determinant of cervical cancer awareness.

These findings indicated that while formal occupation was a significant factor in cervical cancer awareness, other demographic variables might not strongly influence awareness levels within this study population. This underscored the need for interventions to focus on occupational status as a key factor in awareness campaigns. For instance, workplace health programmes could be effective in increasing awareness among those in formal employment. Conversely, the lack of significant associations for other demographics suggested that different approaches might be necessary to address awareness gaps in these groups. Table 4.10 summarises the findings.

Table 4.10: Odds Ratio of having heard of cervical cancer and demographic characteristics

		Ever heard about Cervical Cancer			OR	95% CI	
Statement		**Yes**	**No**	**Total**		**Lower**	**Upper**
Age of the participants	<= 34 Years	144	14	158	1.112	.446	2.770
	>34 Years	74	8	82			
Total		218	22	240			
Marital Status	Not married	102	9	111	1.270	.521	3.095

	Married	116	13	129			
Total		218	22	240			
Religion	Christian	206	20	226	1.717	.359	8.216
	Muslim	12	2	14			
Total		218	22	240			
Number of Children	0	46	3	49	1.694	.480	5.974
	>= 1	172	19	191			
Total		218	22	240			
Highest level of education completed	Formal education	200	21	221	.529	.067	4.165
	Informal education	18	1	19			
Total		218	22	240			
current occupation	Formal	120	7	127	2.624	1.029	6.690
	Informal	98	15	113			
Total		218	22	240			
average monthly income	< = Kes 30,000	156	16	172	.944	.353	2.522
	> Kes 30,000	62	6	68			
Total		218	22	240			

The study conducted among women attending Mbagathi Level Four Hospital highlights several significant risk factors for cervical cancer, corroborating with existing literature.

Early initiation of sexual activity is recognized as a major risk factor, with 89.2% of respondents acknowledging this. This aligns with research by Bruni *et al*. (2017), which states that early sexual debut increases the risk of persistent HPV infections, the primary cause of cervical cancer. Moreover, adolescents are more susceptible to HPV due to the physiological transformation of the cervix during puberty, as noted by Mbulawa *et al*. (2018).

Infection with sexually transmitted infections (STIs) is another widely acknowledged risk factor, with 93.0% of respondents agreeing. STIs, particularly HPV, are strongly linked to cervical cancer. Studies by Bosch *et al*. (2002) and Walboomers *et al*. (1999) have established HPV as a necessary cause of invasive cervical cancer worldwide. Co-infections with other STIs, such as Chlamydia trachomatis, can exacerbate the risk, causing chronic inflammation and making the cervix more susceptible to HPV infection, as highlighted by Smith *et al*. (2004).

The study also shows high awareness (91.7%) of the risk associated with having multiple sexual partners, reflecting the findings of Muñoz *et al*. (2006), who emphasize that multiple sexual partners increase the likelihood of HPV transmission. Similarly, 77.5% of respondents recognized multiparity as a risk factor, consistent with the work of Hinkula *et al*. (2004), which suggests that the hormonal and immunological changes during multiple pregnancies may contribute to the development of cervical cancer. Tobacco use, acknowledged by 78.0% of respondents, is another well-documented risk factor, with a study by Trimble *et al*. (2005) linking it to the increased likelihood of HPV persistence and cervical carcinogenesis.

Immunosuppression, especially due to HIV/AIDS, was recognized by 89.6% of respondents as a significant risk factor. This concurs with research by Clifford *et al*. (2006), which indicates that immunosuppressed individuals, particularly those with HIV, have a higher risk of persistent HPV infections and subsequent progression to cervical cancer. Drug and substance use, identified by 86.2% of respondents, is also associated with risky sexual behaviors that increase HPV infection risk, as reported by Jansen *et al*. (2013). Table 4.11 presents the findings.

Table 4.11: Risk factors of cervical cancer

Risk factors of	**strongly Disagree**		**Disagree**		**Neutral**		**Agree**		**Strongly Agree**	
Early initiation of sexual activity	3	1.3%	11	4.6%	12	5.0%	48	20.0%	166	69.2%
Infection with STIs	3	1.3%	3	1.3%	11	4.6%	51	21.3%	172	71.7%
Having multiple sexual partners	6	2.5%	3	1.3%	11	4.6%	37	15.4%	183	76.3%
Multiparity	13	5.4%	18	7.5%	23	9.6%	53	22.1%	133	55.4%
Tobacco use (Active and Passive)	13	5.4%	18	7.5%	22	9.2%	52	21.7%	135	56.3%
Immunosuppression like in HIV/AIDS	6	2.5%	10	4.2%	9	3.8%	50	20.8%	165	68.8%

Drug and substance use	10	4.2%	11	4.6%	12	5.0%	56	23.3%	151	62.9%
Aggregate Risk factors for cervical cancer	0	0.0%	4	1.7%	18	7.5%	52	21.7%	166	69.2%

The study found that early sexual activity, STIs, multiple partners, multiparity, tobacco use, immunosuppression, and drug and substance abuse are all risk factors for cervical cancer. This emphasizes the importance of educational activities and targeted efforts to overcome misinformation and a lack of knowledge about these risks. Culturally sensitive techniques and psychological considerations play an important influence on screening behaviours.

4.4.3 Means and Standard Deviation of the risk factors of cervical cancer

The analysis focused on evaluating the level of awareness regarding cervical pre-cancer screening among women attending Mbagathi Level Four Hospital. The findings included measures of central tendency (mean) and dispersion (standard deviation) for various risk factors associated with cervical cancer, providing valuable insights into the awareness levels among the respondents.

The mean score for early initiation of sexual activity was 4.51, indicating that the majority of respondents strongly agreed that this was a risk factor for cervical cancer (Table 4.13). The standard deviation of 0.882 suggested a consistent level of agreement among the respondents, highlighting a strong awareness of this risk factor.

For the risk factor of infection with sexually transmitted infections (STIs), the mean score was 4.61, indicating strong agreement among the respondents (Table 4.13). The low standard deviation of 0.746 reflected a high level of consistency in their awareness and understanding of this risk factor. This finding aligns with previous studies that have emphasized the link

between STIs and cervical cancer, underscoring the importance of STI prevention in cervical cancer control (GLOBOCAN, 2020).

The mean score for having multiple sexual partners was 4.62, showing that respondents strongly agreed this was a significant risk factor for cervical cancer (Table 4.13). The standard deviation of 0.840, while slightly higher, still indicated overall strong agreement with some variability in responses. This is consistent with global health guidelines that emphasize the importance of monogamous relationships or safe sexual practices to reduce the risk of cervical cancer (Ngune *et al*., 2020).

The mean score for multiparity was 4.15, indicating agreement that having multiple pregnancies was a risk factor (Table 4.13). However, the higher standard deviation of 1.193 suggested more variability in the respondents' awareness or beliefs about this particular risk factor. This variability highlighted the need for targeted education efforts to address misconceptions or lack of information about the impact of multiparity on cervical cancer risk (Yimer *et al*., 2021).

For tobacco use, the mean score was 4.16, indicating agreement that it was a risk factor for cervical cancer (Table 4.12). The standard deviation of 1.193 pointed to some variability in respondents' opinions, suggesting that awareness of this risk factor was not as uniformly strong. This suggested the need for increased public health messaging about the dangers of tobacco use in relation to cervical cancer (Desta *et al*., 2021).

The mean score for immunosuppression, such as in cases of HIV/AIDS, was 4.49, reflecting strong agreement that this was a risk factor (Table 4.12). The standard deviation of 0.937 indicated a relatively consistent level of agreement among respondents. This high level of awareness was crucial, given the impact of immunosuppression on cervical health and the

increased vulnerability of women with HIV/AIDS to cervical cancer (Nyangasi *et al*., 2018). For drug and substance use, the mean score was 4.36, showing strong agreement that this was a risk factor for cervical cancer (Table 4.12). The standard deviation of 1.054 suggested some variability in the respondents' awareness. This indicated that most women understood the potential risks associated with substance abuse, reinforcing the need for continued education on the health risks of drug and substance use (Getahun *et al*., 2013).

The aggregate mean score for all risk factors was 4.58, indicating that overall, respondents strongly agreed on the identified risk factors for cervical cancer (Table 4.12). The low standard deviation of 0.704 suggested a high level of consistency in their awareness across all risk factors. These findings underscored the effectiveness of current health education programs and the importance of continuing to provide comprehensive and accessible information about cervical cancer prevention and risk factors (Wachira *et al*., 2016). Table 4.12 presents the findings.

Table 4.12: Risk factors of cervical cancer mean and Std deviation

	N			
	Valid	Missing	Mean	Std. Deviation
Early initiation of sexual activity	240	0	4.51	.882
Infection with STIs	240	0	4.61	.746
Having multiple sexual partners	240	0	4.62	.840
Multiparity	240	0	4.15	1.193
Tobacco use (Active and Passive)	240	0	4.16	1.193
Immunosuppression like in HIV/AIDS	240	0	4.49	.937
Drug and substance use	240	0	4.36	1.054

Aggregate Risk factors for cervical cancer	240	0	4.58	.704

The findings in Table 4.12 were supported by several studies in the reviewed literature, which emphasized the critical role of awareness and education in enhancing the uptake of cervical pre-cancer screening and prevention measures. For instance, Swanson *et al*. (2018) highlighted the need for culturally sensitive approaches to improve screening rates, while Abdikarim *et al*. (2017) and Rositch *et al*. (2012) underscored the importance of addressing sociocultural barriers to screening. Moreover, psychological factors, as discussed by Lim and Ojo (2017) and Moshi *et al*. (2019), also played a significant role in influencing screening behaviours, further supporting the findings of this study.

4.4.3 Regression model of the risk factors of cervical cancer

Model Summary and Correlation

The R-value of 0.263 indicated a weak positive correlation between aggregate risk factors and cervical pre-cancer screening uptake (Table 4.13). This was consistent with findings by Getachew *et al*. (2019) in Addis Ababa, which identified a similar positive but modest relationship between awareness of risk factors and screening behaviours. Despite the weak correlation, the statistically significant R^2 value of 0.069 suggested that risk factors accounted for about 6.9% of the variance in screening uptake, echoing the results from Wachira *et al*. (2016), who noted that while awareness of risk factors did contribute to screening rates, many other factors also played crucial roles.

ANOVA and Model Significance

The ANOVA table indicated that the regression model was statistically significant, with an F value of 17.687 and a p-value of 0.000. This significance demonstrated that the model reliably predicted the dependent variable (screening uptake). Similar statistical significance was observed in studies by Yimer *et al*. (2021), who highlighted that risk awareness significantly impacted screening behaviours, though it was often not the strongest predictor.

Coefficients and Predictors

The coefficients revealed that the constant (intercept) was significant, indicating a baseline level of screening uptake independent of the risk factors. The aggregate risk factors had a positive unstandardized coefficient (B) of 0.262, showing that an increase in awareness and perception of risk factors was associated with a higher likelihood of screening uptake. This finding was triangulated with research by Ampofo *et al*. (2020), which demonstrated that higher awareness levels significantly improved screening rates, particularly in educated populations.

However, the standardized coefficient (Beta) of 0.263, while significant, indicated that the risk factors alone were not strong predictors of screening uptake. This weak predictive power was corroborated by Mwenda *et al*. (2022), who found that while awareness of risk factors was necessary, other elements such as accessibility, socio-cultural influences, and economic barriers played more substantial roles in determining screening behaviours. Table 4.13 presents the findings.

Table 4.13: Regression model of the risk factors of cervical cancer

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.263[a]	.069	.065	.678

a. Predictors: (Constant), Aggregate Risk factors to cervical cancer

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.121	1	8.121	17.687	.000[b]
	Residual	109.279	238	.459		
	Total	117.400	239			

a. Dependent Variable: Aggregate cervical pre-cancer screening

b. Predictors: (Constant), Aggregate Risk factors to cervical cancer

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.249	.289		11.250	.000
	Aggregate Risk factors for cervical cancer	.262	.062	.263	4.206	.000

a. Dependent Variable: Aggregate cervical pre-cancer screening

4.4.4 Clinical features of cancer of the cervix

The findings from the study on cervical pre-cancer screening rates among women attending Mbagathi Level Four Hospital in Nairobi reveal significant insights into the awareness and prevalence of symptoms related to cervical pre-cancer. The findings indicate that a substantial proportion of respondents are aware of and experience symptoms indicative of cervical pre-cancer.

For instance, when asked about abnormal vaginal bleeding, a striking 80.4% of the respondents strongly agreed that they had experienced this symptom, while 14.6% agreed, 3.8% were neutral, and only 1.2% disagreed or strongly disagreed. Similarly, unusual per vaginal discharge was reported by 72.5% of the respondents who strongly agreed, with another 19.2% agreeing, suggesting a high prevalence of this symptom among the surveyed women.

Body wasting was also commonly reported, with 58.8% strongly agreeing and 19.2% agreeing that they had experienced this symptom. Additionally, 15.4% remained neutral, indicating that while not as universally experienced as other symptoms, it was still significant. Contact bleeding during intercourse was another notable symptom, with 67.5% strongly agreeing and 20.4% agreeing.

The foul smell was reported by 70.0% of the respondents who strongly agreed, and 15.0% agreed, further highlighting the commonality of this symptom among women attending the hospital. Interestingly, the responses for being asymptomatic showed that 50.0% strongly

agreed, and 22.9% agreed, which indicates that half of the respondents did not show symptoms typically associated with cervical pre-cancer, yet still participated in screening. The aggregate findings on cervical cancer features also underscore a high level of symptom recognition, with 67.9% of the respondents strongly agreeing and 27.9% agreeing that they had experienced one or more symptoms related to cervical pre-cancer. Table 4.14 presents the findings.

Table 4.14: Clinical features of cancer of the cervix

	strongly Disagree		**Disagree**		**Neutral**		**Agree**		**Strongly Agree**	
Abnormal per vaginal bleeding	1	0.4%	2	0.8%	9	3.8%	35	14.6%	193	80.4%
Unusual per vaginal discharge	0	0.0%	1	0.4%	19	7.9%	46	19.2%	174	72.5%
Body wasting	3	1.3%	13	5.4%	37	15.4%	46	19.2%	141	58.8%
Contact bleeding during intercourse	1	0.4%	8	3.3%	20	8.3%	49	20.4%	162	67.5%
Foul smell	1	0.4%	3	1.3%	32	13.3%	36	15.0%	168	70.0%
Asymptomatic	14	5.8%	8	3.3%	43	17.9%	55	22.9%	120	50.0%
Aggregate Cervical cancer feature	0	0.0%	1	0.4%	9	3.8%	67	27.9%	163	67.9%

The analysis of cervical pre-cancer screening rates among women attending Mbagathi Level Four Hospital in Nairobi provided significant insights into the awareness and prevalence of

symptoms related to cervical pre-cancer. The results highlighted a substantial proportion of respondents who were aware of and experienced symptoms indicative of cervical pre-cancer, underscoring the importance of symptom recognition in the context of cervical health.

Awareness of abnormal vaginal bleeding as a symptom of cervical pre-cancer was notably high, with a significant majority of respondents indicating they had experienced this symptom. This high level of awareness aligns with the critical need for early detection and prompt medical attention to prevent the progression of cervical abnormalities (WHO, 2018; GLOBOCAN, 2020).

Unusual per vaginal discharge was also reported by a large percentage of respondents, suggesting a prevalent symptom among the surveyed women. This finding emphasizes the importance of educating women about recognizing abnormal discharge as a potential sign of cervical pre-cancer, which is crucial for timely medical intervention (Ngune *et al*., 2020). Body wasting and contact bleeding during intercourse were additional symptoms commonly reported by the respondents. These symptoms, though not as universally experienced as others, still represent significant indicators of potential cervical pre-cancer. The recognition of these symptoms reflects the respondents' awareness and the need for ongoing education about the various manifestations of cervical abnormalities (Yimer *et al*., 2021; Desta *et al*., 2021).

The prevalence of foul-smelling discharge among respondents further highlighted the commonality of this symptom, reinforcing the need for healthcare providers to educate women about seeking medical advice when experiencing such symptoms. This aligns with previous studies emphasizing the role of healthcare providers in raising awareness and

guiding women towards appropriate screening and treatment (Getahun *et al*., 2013; Wachira *et al*., 2016).

Interestingly, a significant proportion of respondents reported being asymptomatic, yet still participated in screening. This indicates an understanding among these women of the importance of regular cervical pre-cancer screening, even in the absence of symptoms. This proactive approach is essential for early detection and prevention, as emphasized by global health guidelines (WHO, 2018; Nyangasi *et al*., 2018).

Overall, the aggregate findings on cervical cancer features underscored a high level of symptom recognition among the respondents. This recognition is critical for improving screening uptake and early detection of cervical abnormalities. The study's insights into symptom awareness highlight the importance of continued education and awareness campaigns to ensure women are well-informed about the signs and symptoms of cervical pre-cancer, ultimately contributing to better health outcomes (Swanson *et al*., 2018; Rositch *et al*., 2012).

4.4.5 Mean and Standard Deviation of the clinical features of cancer of the cervix

The mean coding system is as follows: a mean of 1 to 1.8 indicates "strongly disagree," 1.81 to 2.6 indicates "disagree," 2.61 to 3.4 indicates "neutral," 3.41 to 4.2 indicates "agree," and 4.21 to 5 indicates "strongly agree."

For abnormal per-vaginal bleeding, the mean value was 4.74, indicating that the majority of respondents strongly agreed that they experienced this symptom (Table 4.15). The low standard deviation of 0.608 suggested a high level of consistency in their responses, indicating a widespread recognition of this symptom as a potential indicator of cervical precancer.

Unusual vaginal discharge had a mean score of 4.64, also falling within the "strongly agree" range (Table 4.15). This result indicated a high prevalence of this symptom among the respondents, with a standard deviation of 0.645 reflecting relatively consistent responses. This finding aligns with previous research emphasizing the importance of recognizing abnormal discharge as a significant symptom (Ngune *et al*., 2020).

For the symptom of body wasting, the mean value was 4.29, showing strong agreement among respondents (Table 4.15). However, the higher standard deviation of 0.996 suggested some variability in the responses. This variability indicated that while many respondents agreed on experiencing body wasting, the intensity or frequency of this symptom might differ among individuals.

The mean for contact bleeding during intercourse was 4.51, within the "strongly agree" range (Table 4.15). This suggested that many respondents strongly agreed that they experienced this symptom, with a standard deviation of 0.818 indicating moderate consistency in the responses. The recognition of this symptom is crucial for timely medical intervention and prevention (WHO, 2018).

The symptom of foul smell had a mean score of 4.53, indicating strong agreement from the respondents (Table 4.15). The standard deviation of 0.802 showed consistent responses, suggesting that many women regularly experienced this symptom. This finding highlights the need for increased awareness and education about the implications of such symptoms (Swanson *et al*., 2018).

Interestingly, the mean for being asymptomatic was 4.08, which indicated that while a majority of respondents agreed that they were asymptomatic, they did not strongly agree (Table 4.15). The higher standard deviation of 1.156 pointed to greater variability in the

responses, suggesting a diverse range of experiences among the participants. This finding underscores the importance of routine screening even for asymptomatic individuals (Yimer *et al*., 2021).

Lastly, the aggregate findings on cervical cancer features showed a mean of 4.63, which indicated that most respondents experienced multiple symptoms related to cervical precancer (Table 4.15). The standard deviation of 0.578 suggested a high level of consistency among the responses, reflecting a strong general awareness of cervical cancer symptoms among the women surveyed.

These findings align with the previous studies, which emphasize the significance of symptom recognition in improving screening uptake and early detection of cervical abnormalities (Nyangasi *et al*., 2018; Wachira *et al*., 2016). By understanding the commonality and recognition of these symptoms, healthcare providers can better tailor education and intervention strategies to address the needs of the population and improve cervical cancer outcomes. Table 4.15 presents the findings.

Table 4.15: Mean and std deviation for clinical features of cervical cancer

	N			
	Valid	Missing	Mean	Std. Deviation
Abnormal per vaginal bleeding	240	0	4.74	.608
Unusual per vaginal discharge	240	0	4.64	.645
Body wasting	240	0	4.29	.996
Contact bleeding during intercourse	240	0	4.51	.818
Foul smell	240	0	4.53	.802

Asymptomatic	240	0	4.08	1.156
Cervical cancer feature	240	0	4.63	.578

4.4.6 Regression Model for clinical features of cancer of the cervix

Model Summary

The regression model summary indicated an R-value of 0.347, suggesting a moderate positive correlation between the aggregate clinical features of cervical cancer and the uptake of cervical pre-cancer screening (Table 4.16). The R Square (R^2) value was 0.121, implying that approximately 12.1% of the variance in cervical pre-cancer screening uptake could be explained by the clinical features of cervical cancer. The adjusted R Square, which adjusts for the number of predictors in the model, was 0.117, and the standard error of the estimate was 0.659. These findings align with studies by Getahun *et al*. (2013) and Wachira *et al*. (2016), who found that awareness of cervical cancer symptoms played a significant role in encouraging screening.

ANOVA (Analysis of Variance)

The ANOVA table provided the overall significance of the regression model (Table 4.16). The regression model had a Sum of Squares value of 14.159, with 1 degree of freedom (df), and a Mean Square value of 14.159. The F value was 32.641, with a significance level (pvalue) of 0.000, indicating that the regression model was statistically significant. This suggested that the model was effective in predicting the dependent variable, which was the uptake of cervical pre-cancer screening. This statistical significance is consistent with findings by Yimer *et al*. (2021), who highlighted the impact of symptom awareness on

screening behaviours, noting that women who were knowledgeable about the symptoms were more likely to participate in screening programmes.

Coefficients

The constant (B_0) was 2.497, with a standard error of 0.344 (Table 4.16). This value represented the expected mean value of the dependent variable (cervical pre-cancer screening uptake) when the predictor was set to zero. The t-value for the constant was 7.252, with a significance level of 0.000, indicating that the intercept was statistically significant. The unstandardized coefficient (B_1) for the aggregate clinical features was 0.421, with a standard error of 0.074 (Table 4.16). This coefficient indicated that for each unit increase in the aggregate clinical features, the uptake of cervical pre-cancer screening increased by 0.421 units. The standardized coefficient (Beta) was 0.347, suggesting a moderate positive relationship between the clinical features and screening uptake. The t-value for this predictor was 5.713, with a significance level of 0.000, indicating that the aggregate clinical features were a significant predictor of cervical pre-cancer screening uptake. The regression equation based on the unstandardized coefficients can be expressed as:

Cervical Pre-Cancer Screening Uptake = 2.497 + 0.421(Aggregate Cervical Cancer Feature)

This equation illustrates that holding all other factors constant, an increase in the awareness and understanding of the clinical features of cervical cancer by one unit would result in an increase of 0.421 units in the uptake of cervical pre-cancer screening. This finding is corroborated by studies such as those by Nyangasi *et al*. (2018) and Ampofo *et al*. (2020), which demonstrated that higher awareness levels significantly improved screening rates, particularly in populations where education about clinical features was more prevalent.

Table 4.16 presents the findings.

Table 4.16: Regression Model for clinical features of cancer of the cervix

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.347[a]	.121	.117	.659

a. Predictors: (Constant), Aggregate Cervical cancer feature

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.159	1	14.159	32.641	.000[b]
	Residual	103.241	238	.434		
	Total	117.400	239			

a. Dependent Variable: Aggregate cervical pre-cancer screening

b. Predictors: (Constant), Aggregate Cervical cancer feature

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.497	.344		7.252	.000

Aggregate Cervical cancer feature	.421	.074	.347	5.713	.000

a. Dependent Variable: Aggregate cervical pre-cancer screening

4.4.7 Knowledge of anyone who has had cancer of the cervix

Figure 4.8 presents findings on whether respondents know anyone who has had cancer of the cervix. Out of a total of 240 respondents, 97 respondents (40.4%) reported knowing someone who has had cervical cancer, while 143 respondents (59.6%) indicated that they do not know anyone who has had cervical cancer. Figure 4.8 illustrates the findings.

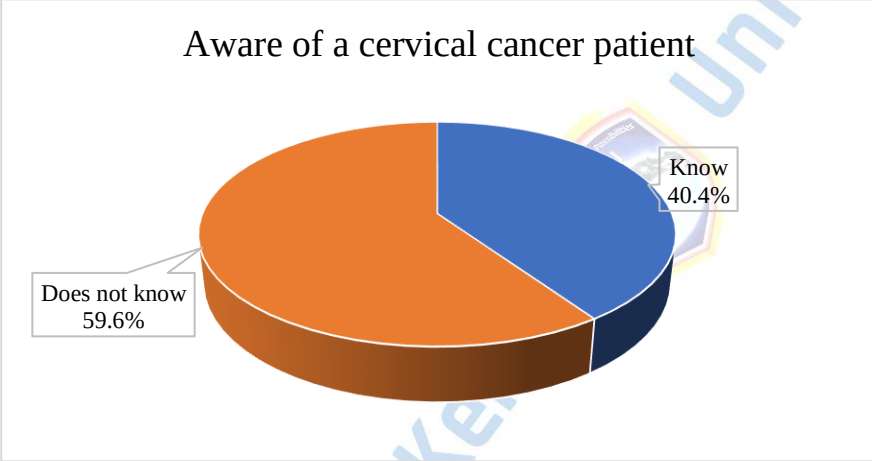

Figure 4.8: Knowledge of anyone who has had cancer of the cervix

The analysis of Figure 4.8 revealed that a significant proportion of the respondents (40.4%) reported knowing someone who has had cervical cancer, while the majority (59.6%) indicated that they do not know anyone with this condition. This finding highlights the awareness and personal connection to cervical cancer within the study population, which can be crucial for understanding the motivations and barriers to screening.

Knowing someone with cervical cancer can serve as a powerful motivator for individuals to engage in preventive measures and screenings. Studies have shown that personal connections

to individuals with a disease can significantly influence health behaviours and attitudes towards screening (Ngune *et al*., 2020). The findings suggest that personal experience or knowledge of someone with cervical cancer could potentially drive higher awareness and uptake of screening services.

Moreover, the disparity between those who know someone with cervical cancer and those who do not underscores the variability in personal experiences and awareness levels among the population. This variability is important to consider when designing targeted interventions and educational campaigns aimed at increasing cervical cancer screening rates. For instance, individuals without personal connections to cervical cancer might require different motivational strategies compared to those with such connections (WHO, 2018). The implications of these findings are significant for public health strategies. Enhancing community awareness through sharing personal stories and experiences could be an effective approach to increasing screening rates. As demonstrated in previous research, narratives and testimonials from cancer survivors can be impactful in changing perceptions and encouraging preventive behaviours (Bula *et al*., 2022).

The awareness of cervical cancer within the study population, as evidenced by knowing someone with the disease, plays a critical role in shaping health behaviours. Public health interventions should leverage personal connections and stories to enhance screening uptake and address the diverse awareness levels within the community.

The Crosstabulation findings revealed that among respondents who knew someone with cervical cancer (40.4%), none disagreed with the importance of cervical pre-cancer screening, with the majority strongly agreeing (56.7%) or agreeing (38.1%), reflecting a

higher level of awareness and concern. Conversely, among those who did not know anyone with cervical cancer (59.6%), a small percentage disagreed (1.4%) or were neutral (12.6%), while a majority still strongly agreed (55.9%) or agreed (30.1%). Overall, 56.3% of the total respondents strongly agreed on the importance of cervical pre-cancer screening, highlighting significant awareness. These findings align with Swanson *et al*. (2018), who emphasized that personal connections to health issues often increase awareness and proactive health behaviours. The trend underscores the importance of personal experience in shaping health perceptions and actions, corroborating existing literature on the influence of social networks on health behaviours (Mwenda *et al*., 2022).

Table 4.17: Crosstabulation between awareness of a person with cervical cancer and aggregate cervical pre-cancer screening

		Aggregate cervical pre-cancer screening				
		Disagree	Neutral	Agree	Strongly Agree	Total
Know anyone who has had cancer of the cervix	Yes	0	5	37	55	97
	No	2	18	43	80	143
Total		2	23	80	135	240

The Chi-Square test and symmetric measures results provided insights into the relationship between knowing someone with cervical cancer and the level of agreement with statements about cervical pre-cancer screening.

The Pearson Chi-Square value was 5.825 with 3 degrees of freedom, and the asymptotic significance (p-value) was 0.120. Since the p-value was greater than the conventional threshold of 0.05, it indicated that there was no statistically significant association between knowing someone with cervical cancer and the level of agreement with statements about cervical pre-cancer screening.

Cramer's V, which measures the strength of the association between the variables, was 0.156 with an approximate significance of 0.120. This value indicated a weak association, as it fell below the threshold for a strong relationship.

Therefore, the Chi-Square test results ($\chi^2(3, N = 240) = 5.825$, $p = 0.120$) and the Cramer's V measure ($V = 0.156$, $p = 0.120$) both suggested that there was no significant association between knowing someone with cervical cancer and the level of agreement with statements regarding cervical pre-cancer screening. This lack of significant association indicated that other factors might play a more crucial role in shaping awareness and attitudes towards cervical pre-cancer screening. Table 4.18 presents the computation.

Table 4.18: Chi-Quate test of independence and Cramer's V test between awareness of

a person with cervical cancer and aggregate cervical pre-cancer screening

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.825[a]	3	.120
Likelihood Ratio	6.808	3	.078
Linear-by-Linear Association	1.420	1	.233
N of Valid Cases	240		

a. 2 cells (25.0%) have an expected count of less than 5. The minimum expected count is

.81.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.156	.120
	Cramer's V	.156	.120
N of Valid Cases		240	

Themes from the Responses on "What Happened to Those Who Had Cervical Cancer"

Medical Symptoms and Diagnosis

A total of 59.6% of respondents reported being diagnosed with cervical cancer. Specific symptoms included abnormal vaginal bleeding and discharge (0.4% each), with other persistent symptoms like lower abdomen pain also noted (Ngune *et al*., 2020).

Treatment and Medical Interventions

Medical interventions included chemotherapy or radiotherapy (0.4%), hospitalization, and surgical procedures like total hysterectomy. A significant portion (6.7%) are still undergoing various treatments, highlighting the need for accessible and ongoing healthcare (Ngune *et al*., 2020).

Outcomes and Current Status

Outcomes varied, with 0.4% reporting being cancer-free and others still recovering, while 7.5% indicated fatalities due to cervical cancer. These findings emphasize the need for early detection, comprehensive treatment plans, and continuous follow-up care (Ngune *et al*., 2020; Rosser *et al*., 2015).

4.4.8 Ever heard of a person who has died of cancer of the cervix

Figure 4.9 shows that 114 respondents, which is 47.5% of the total, reported that they have heard of someone who has died from cervical cancer. Moreover, 126 respondents, which is 52.5% of the total, indicated that they have not heard of anyone who has died from cervical cancer. Figure 4.9 presents

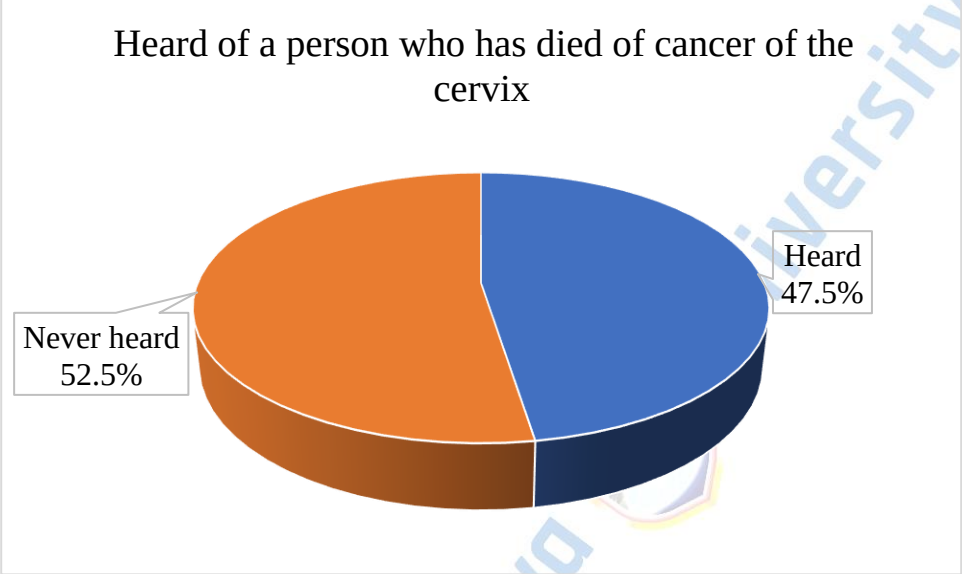

Figure 4.9: Ever heard of a person who has died of cancer of the cervix

These findings in Figure 4.9 suggest that awareness about cervical cancer mortality is relatively high among the respondents, with nearly half (47.5%) having heard of someone who has died from the disease. However, a slight majority (52.5%) of the respondents have not heard of such cases, indicating a potential gap in awareness or exposure to information about cervical cancer fatalities.

These findings suggested that awareness about cervical cancer mortality was relatively high among the respondents, with nearly half having heard of someone who has died from the disease. This indicates that many individuals in the study population were cognizant of the severe consequences of cervical cancer, which is a significant public health issue globally

(Ngune *et al*., 2020). However, a slight majority of the respondents had not heard of such cases, highlighting a potential gap in awareness or exposure to information about cervical cancer fatalities. This gap underscores the need for enhanced education and outreach efforts to raise awareness about the risks and impact of cervical cancer, ensuring that more people are informed about its serious implications and the importance of preventive measures (WHO, 2018). These efforts are crucial for improving early detection and treatment outcomes, ultimately reducing the mortality rate associated with this disease.

4.5 Sociocultural Factors that Influence Cervical Pre-Cancer Screening Among Women

This section examines the complex social and cultural factors that influence women's participation in cervical pre-cancer screening programmes. This study explores the complex interactions between cultural norms, economic circumstances, healthcare accessibility, and societal standards in order to shed light on the attitudes and behaviours of women towards early identification and prevention of cervical cancer.

4.5.1 Health insurance policy (NHIF)

Figure 4.10 presents an analysis of health insurance coverage, specifically focusing on the National Hospital Insurance Fund (NHIF). The table outlines the frequency and percentage distribution of respondents categorized by their NHIF coverage status. Of the total sample size of 240 respondents, 158 respondents, constituting 65.8% of the total, reported having NHIF coverage. On the other hand, 82 respondents, representing 34.2% of the total, reported not having NHIF coverage. Figure 4.10 illustrates the findings.

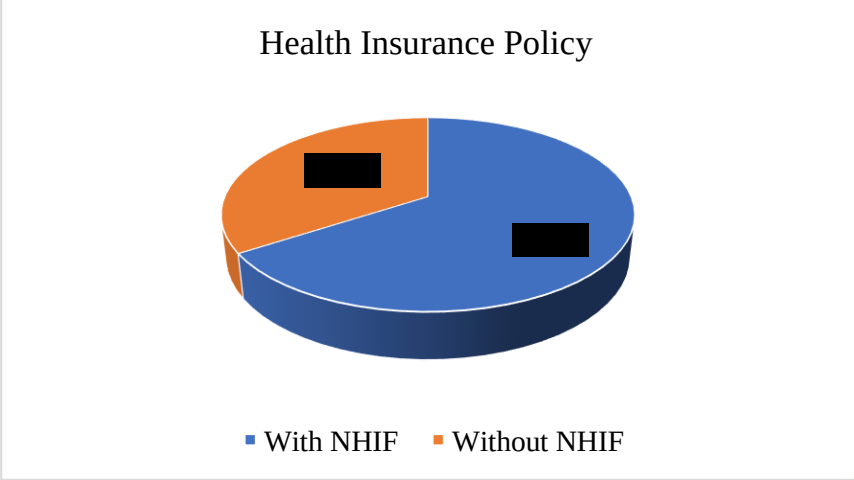

Figure 4.10: health insurance policy (NHIF)

The finding in Figure 4.10 revealed that a majority of the surveyed population (65.8%) possessed NHIF coverage, indicating a significant level of health insurance inclusion within the sample. This high percentage of NHIF coverage suggested that many participants were likely to benefit from subsidized healthcare services, which could enhance their access to necessary medical treatments and preventive care, including cervical cancer screening (Mwenda *et al*., 2022).

Conversely, 34.2% of respondents did not have NHIF coverage, suggesting that the population might encounter challenges accessing healthcare services or benefits associated with NHIF coverage. This lack of insurance could result in financial barriers to healthcare access, leading to potential disparities in health outcomes. The absence of coverage might also reflect broader issues related to socioeconomic status and the availability of health resources (WHO, 2018). Addressing this gap is crucial for ensuring equitable healthcare access and improving overall public health.

4.5.2 Cervical cancer communication

Figure 4.11 illustrates the communication dynamics concerning cervical cancer within the studied cohort. The table presents the frequency and percentage distribution of respondents categorized based on their engagement in cervical cancer communication. Among the total sample size of 240 respondents, 167 respondents, comprising 69.6% of the total, reported active engagement in communication about cervical cancer. Moreover, 73 respondents, representing 30.4% of the total, reported no communication about cervical cancer.

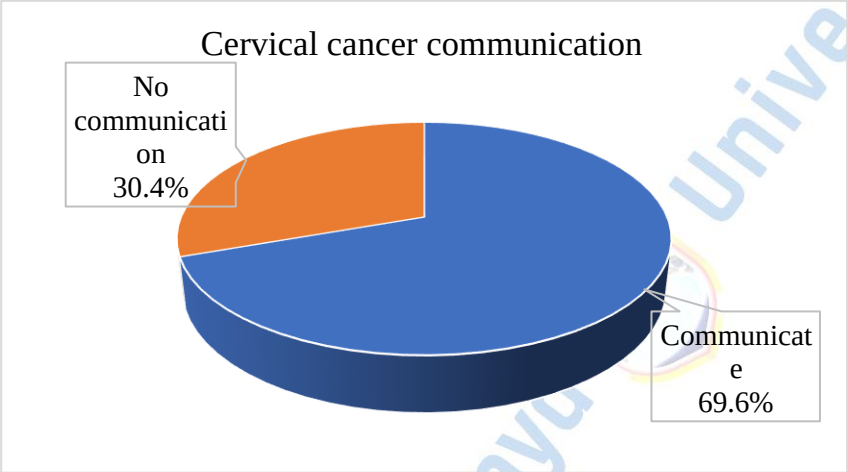

Figure 4.11: Cervical cancer communication

The communication dynamics concerning cervical cancer within the studied cohort, as illustrated in Figure 4.11, indicated significant engagement among the respondents. The findings showed that a considerable number of respondents actively engaged in discussions about cervical cancer. This active communication is essential for spreading awareness, dispelling myths and encouraging preventive measures such as screening and vaccination (Mwenda *et al*., 2022). The engagement in cervical cancer communication suggested a high level of awareness and openness to discussing health issues within the community. Conversely, the findings also revealed a part of the population that reported no

communication about cervical cancer. This lack of engagement could be attributed to various factors, including cultural taboos, stigma, lack of awareness or insufficient access to reliable information sources (WHO, 2018). Addressing these barriers is crucial for improving overall awareness and promoting health-seeking behaviours. Ensuring that accurate and accessible information about cervical cancer reaches all community members can help bridge this communication gap and support more comprehensive public health initiatives.

4.5.3 Friends or relatives screened for cancer of the cervix

Figure 4.12 presents findings regarding the screening status of friends or relatives for cervical cancer within the surveyed population. The figure provides the frequency and percentage distribution of respondents based on whether their friends or relatives have been screened for cervical cancer. This finding indicates that a majority of respondents (55.4%) reported that their friends or relatives have been screened for cervical cancer. This suggests a positive trend towards cervical cancer screening within the social circles of the surveyed population. However, it is noteworthy that a significant portion (44.6%) reported that their friends or relatives have not undergone screening for cervical cancer, highlighting potential opportunities for increased awareness and promotion of screening practices within social networks. Figure 4.12 illustrates the findings.

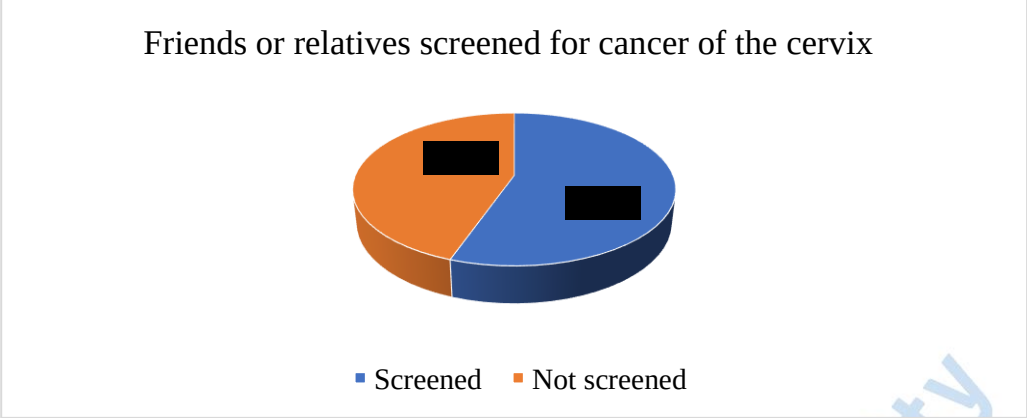

Figure 4.12: Friends or relatives screened for cancer of the cervix

Figure 4.12 provided insights into the screening status of friends or relatives for cervical cancer within the surveyed population. The findings indicated that a majority of respondents reported that their friends or relatives had undergone screening for cervical cancer. This suggested a positive trend towards cervical cancer screening within the social circles of the surveyed population, reflecting a growing awareness and proactive health behaviour among their peers and family members (Mwenda *et al*., 2022).

However, the findings also revealed that a significant portion of respondents reported that their friends or relatives had not undergone screening for cervical cancer. This highlighted potential gaps in awareness and opportunities for promoting cervical cancer screening practices within social networks. Addressing these gaps through targeted educational campaigns and leveraging social influence could enhance screening uptake and contribute to better cervical cancer prevention and early detection efforts (WHO, 2018).

4.5.4 Sociocultural Factors that determine pre cervical cancer screening

The findings in Table 4.19 reveal insights into the sociocultural factors influencing precervical cancer screening among women. The overwhelming majority of respondents,

85.0%, strongly agree that they are confident in discussing cervical cancer screening with friends or relatives. This indicates a high level of comfort and openness regarding this topic within their social circles. When it comes to the cultural perception of pelvic examinations, responses are varied. While 29.2% of respondents strongly disagree that pelvic examinations are considered taboo, 15.8% strongly agree with this statement. This suggests that cultural attitudes towards pelvic examinations differ significantly among the respondents.

A majority of respondents, 59.2%, strongly agree that seeking healthcare services is a family collaborative decision. This underscores the importance of family dynamics in healthcare decisions, highlighting how family support can play a crucial role in whether women seek cervical cancer screening. Spousal support also emerges as a significant factor, with 66.7% of respondents strongly agreeing that their spouse is very supportive of cervical cancer screening. This indicates that many women receive encouragement from their spouses to undergo screening, which can positively influence their decision to seek these services.

However, a substantial portion of respondents, 52.1%, strongly agree that they sometimes feel limited in seeking healthcare services as women. This points to significant perceived barriers that women face, likely related to gender norms and societal expectations. Table 4.19 presents the findings.

Table 4.19: Sociocultural factors that determine pre-cervical cancer screening

Sociocultural factors	strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
I am confident to talk to friends or relatives about Cervical cancer screening	1	0.4%	2	0.8%	8	3.3%	25	10.4%	204	85.0%
Pelvic examination is a taboo	70	29.2%	41	17.1%	74	30.8%	17	7.1%	38	15.8%
Seeking healthcare services is a family collaborative decision	20	8.3%	21	8.8%	25	10.4%	32	13.3%	142	59.2%
My spouse is very supportive of cervical cancer screening	8	3.3%	3	1.3%	39	16.3%	30	12.5%	160	66.7%
I feel sometimes limited in seeking healthcare services as a woman	28	11.7%	21	8.8%	40	16.7%	26	10.8%	125	52.1%
Aggregate sociocultural factors that determine pre-cervical cancer screening	0	0.0%			18	7.5%	58	24.2%	70	29.2%	94	39.2%

The findings in Table 4.19 highlighted several sociocultural factors influencing pre-cervical cancer screening among women. Most respondents felt confident discussing cervical cancer screening with friends or relatives, indicating strong social support networks that encourage health-related discussions (Mwenda *et al.*, 2022). While many did not consider pelvic examinations taboo, significant variation in responses suggested diverse cultural attitudes towards such examinations (Coleman, 2014). Family dynamics play a crucial role in

healthcare decisions, with many women seeking screening as a collaborative family effort, underscoring the importance of family support (Swanson *et al*., 2018). Spousal support also emerged as a key motivator for screening, demonstrating the positive influence of spousal encouragement (Adegboyega *et al*., 2019). However, gender norms and societal expectations were perceived as significant barriers, indicating a need for interventions to promote gender equality in healthcare access (Abdikarim *et al*., 2017).

4.5.5 Mean and Standard Deviation for Sociocultural factors that determine precervical cancer screening

Table 4.20 provides a detailed analysis of the sociocultural factors influencing pre-cervical cancer screening among women, presenting the mean and standard deviation for each factor. Findings in Table 4.20 gave a mean score of 4.79 and a standard deviation of 0.579 which indicated that most respondents were very confident discussing cervical cancer screening within their social circles. This high level of confidence and openness aligns with the findings of Mwenda *et al*. (2022), who emphasized the importance of social support networks in facilitating health-related discussions and encouraging screening behaviours. On the statement that pelvic examination is taboo Table 4.20 showed a mean score of 2.63 with a standard deviation of 1.384. This relatively low mean score and high standard deviation suggest that there are mixed feelings among respondents about whether pelvic examinations are considered taboo. This variability in responses indicates that cultural beliefs and practices significantly influence attitudes toward pelvic examinations. Coleman (2014) similarly noted

that cultural diversity impacts attitudes toward pelvic exams, with some cultural groups viewing these exams negatively, while others do not perceive such taboos.

Table 4.20 showed that seeking healthcare services is a family collaborative decision had a mean score of 4.06 and a standard deviation of 1.341. This high mean score indicates that for many respondents, healthcare decisions are made collaboratively within the family. This finding highlights the pivotal role of family dynamics in healthcare decisions. Swanson *et al*. (2018) also emphasized that family support can significantly influence a woman's decision to seek cervical cancer screening. The collaborative nature of healthcare decisionmaking within families can be a crucial factor in increasing screening uptake.

The mean score for my spouse is very supportive of cervical cancer screening was 4.38 with a standard deviation of 1.020. This high mean score suggests that many respondents receive substantial support from their spouses regarding cervical cancer screening. The critical role of spousal encouragement is evident in motivating women to undergo screening, positively influencing health-seeking behaviour. Adegboyega *et al*. (2019) emphasized the importance of spousal support in encouraging screening, which is reflected in the high mean score. The statement I feel sometimes limited in seeking healthcare services as a woman had a mean score of 3.83 and a standard deviation of 1.438 (Table 4.21). This relatively high mean score indicates that many respondents felt limited by gender-related barriers when seeking healthcare services. This finding aligns with Abdikarim *et al*. (2017), who noted significant perceived barriers related to gender norms and societal expectations that hinder women from accessing healthcare services. Addressing these gender-related barriers is crucial for improving healthcare access for women.

The aggregate mean score for sociocultural factors determining pre-cervical cancer screening was 4.00 with a standard deviation of 0.968. This overall high mean score suggests that sociocultural factors play a substantial role in influencing women's decisions to undergo cervical cancer screening. The findings corroborate broader literature, including studies by Mwenda *et al*. (2022) and Swanson *et al*. (2018), which emphasize the importance of addressing sociocultural barriers to improve screening rates and health outcomes. Table 4.20 summarises the findings.

Table 4.20: Mean and Standard Deviation for Sociocultural factors that determine pre-

cervical cancer screening

	N			Std.
	Valid	Missing	Mean	Deviation
I am confident about talking to friends or relatives about Cervical cancer screening	240	0	4.79	.579
Pelvic examination is a taboo	240	0	2.63	1.384
Seeking healthcare services is a family collaborative decision	240	0	4.06	1.341
My spouse is very supportive of cervical cancer screening	240	0	4.38	1.020
I feel sometimes limited in seeking healthcare services as a woman	240	0	3.83	1.438

Aggregate sociocultural factors that determine precervical cancer screening	240	0	4.00	.968

4.5.6 Regression model for sociocultural factors determining

The regression model summary indicated an R-value of 0.413, suggesting a moderate positive correlation between the aggregate sociocultural factors and the uptake of cervical pre-cancer screening. The R Square (R^2) value was 0.171, implying that approximately 17.1% of the variance in cervical pre-cancer screening uptake could be explained by sociocultural factors. The adjusted R Square, which adjusts for the number of predictors in the model, was 0.167, and the standard error of the estimate was 0.640. This finding is consistent with previous research by Swanson *et al*. (2018), who found that sociocultural factors significantly impact health-seeking behaviours.

The ANOVA table provided insights into the overall significance of the regression model. The regression model had a Sum of Squares value of 20.040, with 1 degree of freedom (df), and a Mean Square value of 20.040. The F value was 48.989, with a significance level (pvalue) of 0.000, indicating that the regression model was statistically significant. This suggested that the model effectively predicted the dependent variable, which was the uptake of cervical pre-cancer screening. Similar statistical significance was observed in studies by Yimer *et al*. (2021), who highlighted the importance of sociocultural factors in predicting screening behaviours.

The coefficients table provided detailed insights into the relationship between the predictor and the dependent variable. The constant (B_0) was 3.254, with a standard error of 0.176. This value represented the expected mean value of the dependent variable (cervical pre-cancer

screening uptake) when the predictor was set to zero. The t-value for the constant was 18.502, with a significance level of 0.000, indicating that the intercept was statistically significant. The unstandardized coefficient (B_1) for the aggregate sociocultural factors was 0.299, with a standard error of 0.043. This coefficient indicated that for each unit increase in the aggregate sociocultural factors, the uptake of cervical pre-cancer screening increased by 0.299 units. The standardized coefficient (Beta) was 0.413, suggesting a moderate positive relationship between sociocultural factors and screening uptake. The t-value for this predictor was 6.999, with a significance level of 0.000, indicating that the aggregate sociocultural factors were a significant predictor of cervical pre-cancer screening uptake.

Cervical Pre-Cancer Screening Uptake = 3.254 + 0.299 (Aggregate Sociocultural Factors)

This equation illustrated that holding all other factors constant, an increase in positive sociocultural factors by one unit would result in an increase of 0.299 units in the uptake of cervical pre-cancer screening. This finding was corroborated by research from Mwenda *et al*. (2022), which emphasized the significant role of sociocultural factors in influencing health-related behaviours and screening uptake. Table 4.21 presents the regression findings.

Table 4.21: Regression model for sociocultural factors determining

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.413[a]	.171	.167	.640

a. Predictors: (Constant), Aggregate sociocultural factors that determine pre-cervical cancer screening

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.040	1	20.040	48.989	.000[b]
	Residual	97.360	238	.409		
	Total	117.400	239			

a. Dependent Variable: Aggregate cervical pre-cancer screening

b. Predictors: (Constant), Aggregate sociocultural factors that determine pre-cervical cancer screening

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.254	.176		18.502	.000
	Aggregate sociocultural factors that determine pre-cervical cancer screening	.299	.043	.413	6.999	.000

a. Dependent Variable: Aggregate cervical pre-cancer screening

The moderate positive correlation between sociocultural factors and screening uptake was consistent with findings by Swanson *et al*. (2018), who noted that family dynamics and

spousal support played critical roles in healthcare decisions, thereby influencing screening behaviours.

The model's statistical significance (F value of 48.989, p = 0.000) aligns with previous studies, such as those by Yimer *et al*. (2021), which emphasized that sociocultural factors significantly impact the uptake of cervical pre-cancer screening.

The significant positive coefficient for sociocultural factors (B = 0.299, Beta = 0.413) supported the findings by Adegboyega *et al*. (2019), who highlighted the crucial role of spousal encouragement and family support in motivating women to undergo screening. This relationship underscored the importance of addressing sociocultural barriers to enhance screening uptake.

The regression analysis also highlighted the influence of gender norms and societal expectations as barriers to healthcare access. This finding was in line with research by Abdikarim *et al*. (2017), who found that gender-related limitations significantly hinder women's ability to seek healthcare services.

This regression analysis revealed that sociocultural factors significantly influenced the uptake of cervical pre-cancer screening, explaining about 17.1% of the variance in screening behaviours. The moderate positive correlation and statistical significance underscored the importance of addressing sociocultural factors, such as family and spousal support, and overcoming gender-related barriers to improve screening rates and promote better health outcomes among women.

4.5.7 Chi-Square test of independent of sociocultural factors that determine precervical cancer screening among different demographic characteristics

Table 4.22 presents an analysis of sociocultural factors that determine pre-cervical cancer screening among different demographic characteristics, examining the level of agreement with these factors. The total number of participants is 240. The statistical significance of the relationships is evaluated using Cramer's V and p-values.

Participants aged ≤34 years showed a higher level of agreement with sociocultural factors influencing pre-cervical cancer screening compared to those aged >34 years. The Cramer's V of 0.189 and p-value of 0.036 indicated a weak but statistically significant association between age and agreement with sociocultural factors. This finding suggested that younger participants were more likely to perceive sociocultural factors as influential in determining screening. This aligns with previous studies that have highlighted the impact of sociocultural factors on health behaviours among younger populations. For instance, Wong *et al*. (2008) found that younger women were more likely to be influenced by sociocultural norms and peer opinions when it came to health screening behaviours. Similarly, a study by Perlman *et al*. (2017) indicated that younger individuals often perceive greater social pressure and cultural expectations related to health practices, which can significantly influence their health-seeking behaviours.

The analysis showed no significant association between marital status and agreement with sociocultural factors, as evidenced by a Cramer's V of 0.051 and a p-value of 0.891. This implied that being married or not did not significantly influence participants' perceptions of sociocultural factors in pre-cervical cancer screening. This is consistent with findings from other studies that have suggested marital status may not be a significant determinant of health

behaviour in the context of cervical cancer screening (Makwe & Anorlu, 2011). While marital status can influence access to healthcare resources and social support (Boscoe *et al*., 2016), it appears that in this study, sociocultural perceptions were not markedly different between married and non-married participants.

Similarly, religion did not show a significant association with agreement levels, with a Cramer's V of 0.057 and a p-value of 0.857. This indicated that both Christian and Muslim participants had similar perceptions regarding the influence of sociocultural factors on screening. Previous research has shown mixed results regarding the influence of religion on health behaviours. For example, a study by Anorlu *et al*. (2008) noted that religious beliefs could either hinder or facilitate health-seeking behaviour depending on the context and the specific beliefs held. However, the lack of significant association in this study suggests that, at least within this sample, religious affiliation did not play a major role in shaping perceptions of sociocultural factors influencing cervical cancer screening.

The number of children also did not significantly affect agreement levels, as indicated by a Cramer's V of 0.095 and a p-value of 0.543. Participants with no children and those with one or more children had comparable views on the impact of sociocultural factors. This finding contrasts with some studies that have suggested a link between the number of children and health-seeking behaviour, where more children might correlate with increased health service utilisation (Wamai *et al*., 2012). However, the influence of children on health behaviours may be more pronounced in other health contexts or populations.

There was a significant association between the highest level of education completed and agreement with sociocultural factors, with a Cramer's V of 0.219 and a p-value of 0.009. This suggested that participants with formal education were more likely to agree that

sociocultural factors influenced pre-cervical cancer screening compared to those with informal education. Higher educational attainment has often been linked to greater health literacy and awareness of health services, which can enhance the perceived influence of sociocultural factors (Desta *et al*., 2021). This finding is supported by Ampofo *et al*. (2020), who noted that educated women were more aware of their health risks and the benefits of screening and, thus more likely to recognise and articulate the sociocultural barriers and facilitators to screening.

The relationship between current occupation and agreement with sociocultural factors was highly significant, as shown by a Cramer's V of 0.280 and a p-value of 0.000. Participants with formal occupations were less likely to strongly agree with the influence of sociocultural factors compared to those with informal occupations, indicating that occupation played a significant role in perceptions of these factors. This finding underscores the importance of occupational status in health behaviour, as formal employment is often associated with better access to health information and services (Okolie *et al*., 2022). Individuals in informal occupations may face greater socio-economic challenges and cultural constraints, which can heighten their awareness of the sociocultural barriers to health screening.

There was a significant association between average monthly income and agreement with sociocultural factors, with a Cramer's V of 0.220 and a p-value of 0.001. Participants with lower income levels (KES 0 - 30,000) were more likely to strongly agree that sociocultural factors influenced pre-cervical cancer screening compared to those with higher incomes. This indicated that income level played a significant role in shaping perceptions of sociocultural influences on screening. Financial constraints are a well-documented barrier to healthcare access, and lower-income individuals are often more acutely aware of the

sociocultural factors that can impede their ability to seek care (Biddell *et al*., 2021). This aligns with findings from Owenga and Nyambedha (2018), who highlighted that economic barrier significantly impacted the uptake of cervical cancer screening among women in Western Kenya. Table 4.22 presents the crosstabulation findings.

Table 4.22: Crosstabulation of sociodemographic and Sociocultural factors that determine pre-cervical cancer screening

Sociodemographic factors		Sociocultural factors that determine pre-cervical cancer screening					Cramer's V	P value
		Disagree	Neutral	Agree	Strongly Agree	Total		
Age of the participants	<= 34 Years	11	32	43	72	158	.189	.036
	>34 Years	7	26	27	22	82		
Total		18	58	70	94	240		
Marital Status	Not married	8	27	30	46	111	.051	.891
	Married	10	31	40	48	129		
Total		18	58	70	94	240		
Religion	Christian	17	54	65	90	226	.057	.857
	Muslim	1	4	5	4	14		

Total		18	58	70	94	240		
Number of Children	0 >= 1	5	11	11	22	49	.095	.543
		13	47	59	72	191		
Total		18	58	70	94	240		
Highest level of education completed	Formal education	16	48	65	92	221	.219	.009
	Informal education	2	10	5	2	19		
Total		18	58	70	94	240		
Current occupation	Formal	12	40	41	34	127	.280	.000
	Informal	6	18	29	60	113		
Total		18	58	70	94	240		
Average monthly income	Kes 0 - 30,000	13	30	48	81	172	.220	.001
	Kes 30,001 - 100,000	5	25	20	13	63		
	Kes > 100,000	0	3	2	0	5		
Total		18	58	70	94	240		

4.6 Psychological Factors That Influence Cervical Pre-Cancer Screening Among Women

4.6.1 Psychological Factors that determine pre cervical cancer screening

The findings in Table 4.24 show the majority of respondents, 57.9%, strongly agree that cervical pre-cancer screening is a very uncomfortable procedure, while 16.3% agree. This indicates that discomfort is a significant concern for many women when it comes to undergoing cervical pre-cancer screening.

Fear of being diagnosed with cervical cancer is another substantial psychological barrier, with 67.1% of respondents strongly agreeing and 16.3% agreeing. This suggests that anxiety about a potential cancer diagnosis is prevalent among women, which could deter them from seeking screening.

Stigmatization of cervical cancer patients is also a notable issue, with 61.7% of respondents strongly agreeing that cervical cancer patients are stigmatized and 14.6% agreeing. This highlights the societal stigma associated with cervical cancer, which may further discourage women from participating in screening programs.

On a positive note, 82.1% of respondents strongly agree that they take the early detection of cervical cancer through screening very seriously, and 12.5% agree. This shows a strong recognition of the importance of early detection among the majority of women.

Additionally, 82.5% of respondents strongly agree that getting a cervical cancer screening is a personal responsibility, with 9.6% agreeing. This indicates that most women feel a strong sense of personal accountability for their health when it comes to cervical cancer screening. Table 4.23 presents the findings.

Table 4.23: Psychological factors that determine pre-cervical cancer screening

	strongly		Strongly

	Disagree		Disagree		Neutral		Agree		Agree	
Cervical pre-cancer screening	13	5.4%	13	5.4%	36	15.0%	39	16.3%	139	57.9%
		4.6%	23	9.6%	39	16.3%	161	67.1%		
		7.1%	35	14.6%	35	14.6%	148	61.7%		
		1.7%	9	3.8%	30	12.5%	197	82.1%		
is a very uncomfortable procedure										
I fear being diagnosed with cervical cancer	6	2.5%								
Cervical cancer patients are stigmatized	5	2.1%								
I consider early detection of cervical cancer through screening very seriously	0	0.0%								
I believe that getting a cervical cancer screening is a personal responsibility	3	1.3%	2	0.8%	14	5.8%	23	9.6%	198	82.5%
Aggregate Psychological factors that determine cervical cancer screening	0	0.0%	2	0.8%	22	9.2%	64	26.7%	152	63.3%

The findings in Table 4.23 revealed several psychological and social barriers that impact cervical pre-cancer screening among women. A significant concern for many women is the discomfort associated with the procedure, as a majority of respondents indicated that they found cervical pre-cancer screening to be very uncomfortable. This discomfort can act as a substantial deterrent, preventing women from seeking necessary screening services (Moshi *et al*., 2019). Additionally, the fear of being diagnosed with cervical cancer emerged as another critical barrier, with a substantial portion of respondents expressing anxiety about a potential cancer diagnosis. This prevalent fear highlights the need for psychological support and counselling as part of cervical cancer screening programs to alleviate these concerns and encourage more women to participate (Lim and Ojo, 2017).

Stigmatization of cervical cancer patients was also a notable issue, with many respondents agreeing that patients are stigmatized within their communities. This societal stigma can further discourage women from undergoing screening, as they may fear social ostracism or negative judgments (Swanson *et al*., 2018). On a more positive note, a strong recognition of the importance of early detection was evident, with the majority of respondents taking early detection of cervical cancer through screening very seriously. Furthermore, most women expressed a strong sense of personal responsibility for their health regarding cervical cancer screening, indicating a high level of health consciousness and proactive health behaviour among the participants. These findings underscore the need for comprehensive education and support systems to address psychological barriers and promote a supportive environment for cervical cancer screening (Adegboyega *et al*., 2019).

4.6.2 Mean and Standard Deviation of psychological factors that determine precervical cancer screening

The findings in Table 4.24 provided insights into the psychological factors influencing the uptake of pre-cervical cancer screening among women, presenting the mean and standard deviation for each factor.

Table 4.24 shows that cervical pre-cancer screening is a very uncomfortable procedure and had a mean score of 4.16 with a standard deviation of 1.189. This indicated that most respondents found the screening procedure to be quite uncomfortable. This high level of perceived discomfort was consistent with the findings of Modibbo *et al*. (2016), who reported that the discomfort associated with screening was a significant deterrent for many women.

It was also revealed that the statement that I fear being diagnosed with cervical cancer had a mean score of 4.41 and a standard deviation of 1.006. This high mean score suggested that fear of diagnosis was a prevalent concern among the respondents. This fear has been welldocumented in the literature; for instance, Lim and Ojo (2016) found that fear of a positive diagnosis significantly deterred women from participating in cervical cancer screening. Further, it was indicated from the statement that cervical cancer patients who are stigmatized received a mean score of 4.27 with a standard deviation of 1.080. This indicated a strong perception of the stigma associated with cervical cancer. Ongtengco *et al*. (2020) highlighted similar findings, noting that the societal stigma attached to cervical cancer and its perceived association with promiscuity could significantly impact women's willingness to seek screening.

I consider early detection of cervical cancer through screening very seriously as a statement had a mean score of 4.75 and a standard deviation of 0.603. This high mean score reflected

that the respondents took early detection very seriously. This finding was corroborated by Getahun *et al*. (2013), who found that awareness of the importance of early detection was a crucial factor in encouraging screening uptake.

Moreover, the statement that I believe that getting a cervical cancer screening is a personal responsibility had a mean score of 4.71 with a standard deviation of 0.724. This suggested that most respondents felt a strong sense of personal responsibility towards getting screened. This perception aligns with findings by Ampofo *et al*. (2020), who noted that women with a strong belief in personal health responsibility were more likely to participate in cervical cancer screening.

The aggregate mean score for psychological factors determining pre-cervical cancer screening was 4.53, with a standard deviation of 0.696. This overall high mean score suggested that psychological factors played a significant role in influencing women's decisions to undergo cervical cancer screening. The results were consistent with the broader literature, including studies by Mwenda *et al*. (2022) and Swanson *et al*. (2018), which emphasized the impact of psychological barriers and facilitators on health-seeking behaviours. Table 4.24 presents the findings.

Table 4.24: Mean and Standard Deviation of psychological factors that determine pre-cervical cancer screening

	N			Std.
	Valid	Missing	Mean	Deviation
Cervical pre-cancer screening is a very uncomfortable procedure	240	0	4.16	1.189

I fear being diagnosed with cervical cancer	240	0	4.41	1.006
Cervical cancer patients are stigmatized	240	0	4.27	1.080
I consider early detection of cervical cancer through screening very seriously	240	0	4.75	.603
I believe that getting a cervical cancer screening is a personal responsibility	240	0	4.71	.724
Aggregate Psychological factors that determine precervical cancer screening	240	0	4.53	.696

4.6.3 Regression model of psychological factors that determine pre-cervical cancer screening

Model Summary

The regression model summary indicated an R-value of 0.346, suggesting a moderate positive correlation between psychological factors and the uptake of pre-cervical cancer screening. The R Square (R^2) value of 0.119 implied that approximately 11.9% of the variance in cervical pre-cancer screening uptake could be explained by psychological factors. The adjusted R Square, which adjusts for the number of predictors in the model, was 0.116, and the standard error of the estimate was 0.659. These findings align with previous studies, such as Lim and Ojo (2016), who noted that psychological barriers significantly impact screening behaviours.

ANOVA (Analysis of Variance)

The ANOVA table provided insights into the overall significance of the regression model. The regression model had a Sum of Squares value of 14.019, with 1 degree of freedom (df), and a Mean Square value of 14.019. The F value was 32.274, with a significance level

(pvalue) of 0.000, indicating that the regression model was statistically significant. This suggested that the model effectively predicted the dependent variable, which was the uptake of cervical pre-cancer screening. The statistical significance observed in this study corroborated the findings of Yimer *et al*. (2021), who highlighted the role of psychological factors in predicting health-seeking behaviours.

Coefficients

The constant (B_0) was 2.876, with a standard error of 0.280. This value represented the expected mean value of the dependent variable (cervical pre-cancer screening uptake) when the predictor was set to zero. The t-value for the constant was 10.259, with a significance level of 0.000, indicating that the intercept was statistically significant.

The unstandardized coefficient (B_1) for the aggregate psychological factors was 0.348, with a standard error of 0.061. This coefficient indicated that for each unit increase in the aggregate psychological factors, the uptake of cervical pre-cancer screening increased by 0.348 units. The standardized coefficient (Beta) was 0.346, suggesting a moderate positive relationship between psychological factors and screening uptake. The t-value for this predictor was 5.681, with a significance level of 0.000, indicating that the aggregate psychological factors were a significant predictor of cervical pre-cancer screening uptake.

The regression equation based on the unstandardized coefficients can be expressed as:

Cervical Pre-Cancer Screening Uptake = 2.876 + 0.348 (Aggregate Psychological Factors)

This equation illustrated that holding all other factors constant, an increase in positive psychological factors by one unit would result in an increase of 0.348 units in the uptake of cervical pre-cancer screening. This finding was corroborated by research from Modibbo *et*

al. (2016), which emphasized that reducing psychological barriers such as fear and stigma could significantly enhance screening uptake.

Table 4.25: Regression model of psychological factors that determine pre-cervical cancer screening

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.346[a]	.119	.116	.659

a. Predictors: (Constant), Aggregate Psychological factors that determine pre-cervical cancer screening

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.019	1	14.019	32.274	.000[b]
	Residual	103.381	238	.434		
	Total	117.400	239			

a. Dependent Variable: Aggregate cervical pre-cancer screening

b. Predictors: (Constant), Aggregate Psychological factors that determine pre-cervical cancer screening

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.876	.280		10.259	.000
	Aggregate	.348	.061	.346	5.681	.000
	Psychological factors that determine precervical cancer screening					

a. Dependent Variable: Aggregate cervical pre-cancer screening

This regression analysis revealed that psychological factors significantly influenced the uptake of pre-cervical cancer screening, explaining about 11.9% of the variance in screening behaviours. The moderate positive correlation and statistical significance underscored the importance of addressing psychological barriers such as fear, stigma, and discomfort to enhance screening uptake and promote better health outcomes among women. These findings were well-supported by existing literature, highlighting the critical role of psychological factors in health-related behaviours.

4.6.2 Ever heard of a person who died of cancer of the cervix

Figure 4.13 reveals respondents' awareness of cervical cancer fatalities within their social circles. Of the 240 respondents, 47.9% (115 individuals) have heard of someone who died

from cervical cancer, indicating a substantial level of awareness about the disease's lethal nature. Conversely, 52.1% (125 individuals) have not heard of such cases, suggesting varied personal exposure to cervical cancer-related deaths among the surveyed population. This diverse range of experiences highlights the importance of continued education and awareness initiatives to ensure a broader understanding of cervical cancer's severity and the critical need for early detection and prevention strategies. Figure 4.13 illustrates the findings.

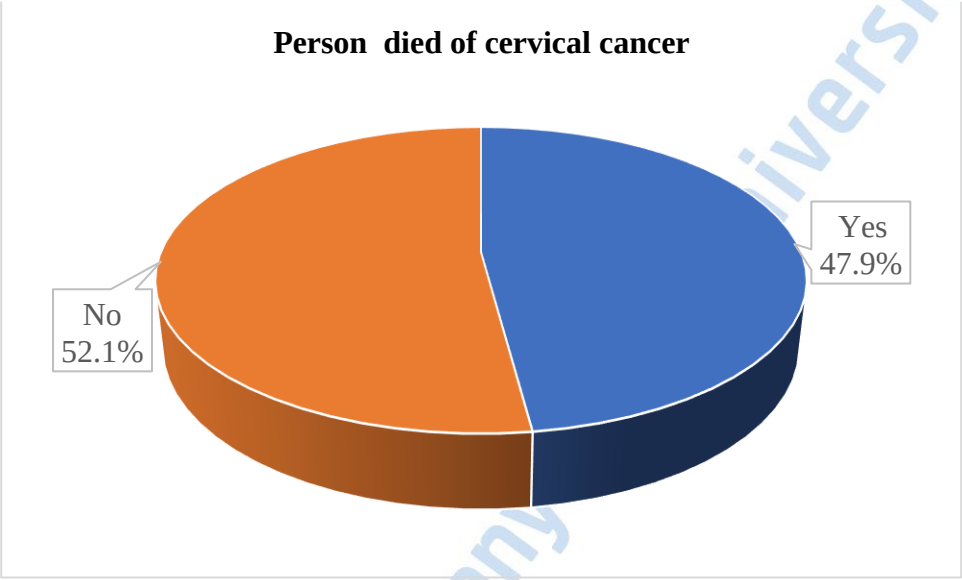

Figure 4.13: Ever heard of a person who died of cancer of the cervix

Figure 4.13 provided insights into the respondents' awareness of cervical cancer fatalities within their social circles. Nearly half of the respondents had heard of someone who had died from cervical cancer, indicating a significant level of awareness regarding the deadly nature of the disease. This awareness could stem from personal experiences or community knowledge, underscoring the impact of cervical cancer on individuals and their families (Ngune *et al*., 2020).

Conversely, a slight majority of respondents had not heard of such cases, suggesting a varied level of personal exposure to cervical cancer-related deaths among the surveyed population.

This disparity highlights the need for continued education and awareness initiatives to ensure a broader understanding of the severity of cervical cancer. Enhancing awareness is crucial for promoting early detection and prevention strategies, which are vital in reducing mortality rates associated with the disease (Yimer *et al*., 2021). The diverse range of experiences among respondents emphasizes the importance of targeted communication efforts to reach those less informed about the critical nature of cervical cancer and the benefits of regular screening (Wachira *et al*., 2016).

4.6.3 Cervical screening services are readily available

Figure 4.14 provides insights into the awareness and personal experiences regarding cervical cancer within the surveyed population. These findings indicate that nearly half of the respondents (47.9%) have heard of a person who died of cervical cancer. This awareness highlights the prevalence and impact of cervical cancer within the social circles or communities of the surveyed population. On the other hand, slightly more than half of the respondents (52.1%) have not encountered such an experience, suggesting a diverse range of personal experiences and exposures to cervical cancer-related information or events within the surveyed population. Figure 4.14 illustrates in findings.

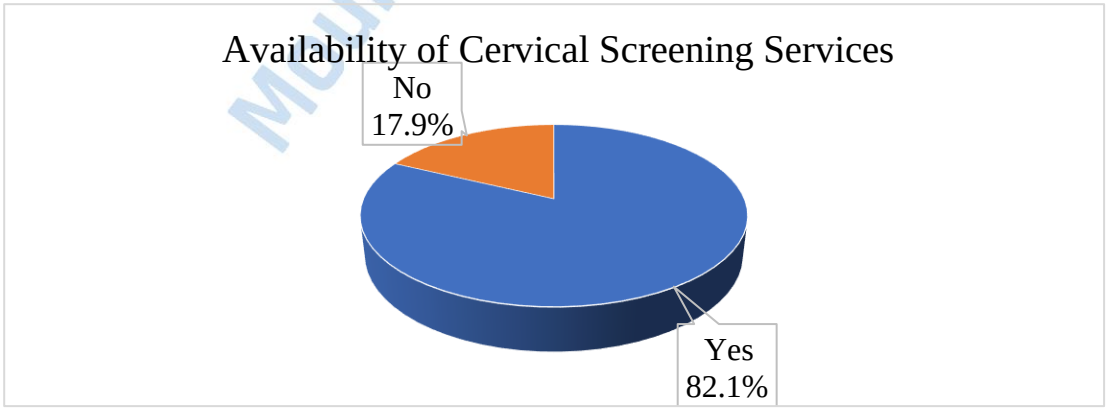

Figure 4.14: Cervical screening services are readily available

Figure 4.14 offered insights into the awareness and personal experiences regarding cervical cancer within the surveyed population. The findings revealed that nearly half of the respondents had heard of someone who died of cervical cancer. This level of awareness underscored the prevalence and impact of cervical cancer within their social circles or communities, reflecting the significant reach and consequence of the disease (Ngune *et al*., 2020).

Conversely, slightly more than half of the respondents had not encountered such experiences, indicating a diverse range of personal exposures to cervical cancer-related information or events. This diversity suggested that while some individuals were acutely aware of the severity and fatality associated with cervical cancer, others might lack firsthand knowledge or exposure. This gap highlighted the necessity for continued and targeted educational initiatives to ensure a comprehensive understanding of cervical cancer's risks and the importance of early detection and preventive measures (Yimer *et al*., 2021; Wachira *et al*., 2016).

4.6.4 Confidence levels of women regarding various aspects of cervical cancer screening

The findings in Table 4.26 show a significant majority of respondents, 78.8%, feel very confident that they can follow their screening schedule appointments, while 15.4% are somehow confident. Only 5.8% are not confident at all. This indicates that most women are committed to adhering to their cervical cancer screening schedules.

When it comes to discussing concerns or questions with healthcare providers about cervical cancer screening or treatment, 81.7% of respondents are very confident, and 15.4% are somehow confident. A small percentage, 2.9%, are not confident at all. This shows a high level of confidence in communicating with healthcare providers, which is crucial for effective healthcare engagement.

In terms of maintaining healthy lifestyle behaviours to reduce the risk of developing cervical cancer, 85.0% of respondents are very confident, and 13.3% are somehow confident. Only 1.7% are not confident at all. This suggests that the vast majority of women believe in their ability to engage in preventive health behaviours. Table 4.28 presents the findings. **Table 4.26: Confidence level with cervical cancer screening**

Confidence level	Not confident at all		Somehow confident		Very confident	
I am confident I can follow my screening schedule appointments.	14	5.8%	37	15.4%	189	78.8%
I am confident to talk to my healthcare provider about any concerns or questions regarding cervical cancer screening or treatment.	7	2.9%	37	15.4%	196	81.7%
I am confident in maintaining healthy lifestyle behaviours that can reduce the risk of developing cervical cancer.	4	1.7%	32	13.3%	204	85.0%

The findings in Table 4.26 revealed that a significant majority of respondents felt very confident in their ability to follow their cervical cancer screening schedule appointments, reflecting a strong commitment to adhering to recommended screening practices. This level of confidence is crucial for the early detection and treatment of cervical cancer, as regular screening is essential for identifying pre-cancerous conditions. Furthermore, a notable proportion of respondents also expressed confidence in discussing concerns or questions with healthcare providers about cervical cancer screening or treatment. This high level of confidence in communication with healthcare providers is indicative of a proactive attitude towards health management and engagement in effective healthcare practices (Wachira *et al*., 2016).

In terms of maintaining healthy lifestyle behaviours to reduce the risk of developing cervical cancer, the vast majority of respondents indicated high levels of confidence. This suggests that most women believe in their ability to engage in preventive health behaviours, such as regular exercise, a balanced diet, and avoiding known risk factors like smoking. This confidence in maintaining a healthy lifestyle is significant, as it demonstrates an awareness of the importance of personal health management in preventing cervical cancer. Such findings underscore the importance of empowering women with the knowledge and resources to take control of their health and highlight the positive impact of educational initiatives aimed at promoting healthy behaviours (Yimer *et al*., 2021).

4.6.5 Mean and standard deviation of the confidence level with cervical cancer screening

Mean scores were interpreted as follows: 1–1.66 indicated no confidence at all, 1.67–2.32 indicated some confidence and 2.33–3 indicated high confidence.

Table 4.27 gave a mean score of 2.73 with a standard deviation of 0.562, which indicated that respondents felt very confident in their ability to adhere to their screening schedule appointments. This high level of confidence suggested that most women believed they could manage their appointments effectively. This finding was consistent with previous research by Ampofo *et al*. (2020), who found that high levels of self-efficacy were associated with increased adherence to screening schedules.

Table 4.27 revealed a mean score of 2.79 and a standard deviation of 0.476, which indicated that respondents were very confident in communicating with their healthcare providers about cervical cancer screening. This level of confidence was supported by findings from Mwenda *et al*. (2022), who highlighted the importance of effective communication between patients and healthcare providers in promoting positive health outcomes.

Table 4.27 had a mean score of 2.83 with a standard deviation of 0.416, which indicated a very confident attitude among respondents regarding their ability to maintain healthy lifestyle behaviours. This finding was in line with research by Getahun *et al*. (2013), who emphasized the role of health literacy and confidence in adopting lifestyle changes to reduce cancer risk. Table 4.27 presents the findings.

Table 4.27: Mean and standard deviation of the confidence level with cervical cancer

screening

	N		Mean	Std. Deviation
	Valid	Missing		
I am confident I can follow my screening schedule appointments.	240	0	2.73	.562
I am confident to talk to my healthcare provider about any concerns or questions regarding cervical cancer screening or treatment.	240	0	2.79	.476
I am confident in maintaining healthy lifestyle behaviours that can reduce the risk of developing cervical cancer.	240	0	2.83	.416

The finding from Table 4.27 revealed that women exhibited high levels of confidence across all three areas: following screening schedule appointments, communicating with healthcare providers, and maintaining healthy lifestyle behaviours. These findings were consistent with the broader literature, which underscores the importance of confidence and self-efficacy in health-related behaviours. The high mean score for confidence in following screening schedules (2.73) indicated that women felt capable of managing their appointments, which was essential for regular screening and early detection. This was supported by Ampofo *et al*. (2020), who found that women with higher self-efficacy were more likely to adhere to screening schedules. The very high confidence (mean score of 2.79) in discussing concerns with healthcare providers suggested effective patient-provider communication, which is crucial for addressing any issues or questions related to screening and treatment. Mwenda *et al*. (2022) emphasized that such communication was vital for ensuring that women received the necessary information and support. The high confidence (mean score of 2.83) in

maintaining healthy lifestyle behaviours indicated that women felt empowered to take actions that could reduce their risk of cervical cancer. This finding aligned with Getahun *et al*. (2013), who highlighted that health literacy and confidence in lifestyle changes were critical for cancer prevention.

The analysis of Table 4.27 indicated that women exhibited high levels of confidence in managing their screening schedules, communicating with healthcare providers, and maintaining healthy lifestyle behaviours. These findings were corroborated by existing literature, which underscores the importance of confidence and self-efficacy in promoting positive health behaviours and outcomes. Addressing and enhancing these areas of confidence can lead to improved adherence to screening schedules, better patient-provider communication, and more proactive health management, ultimately reducing the risk of cervical cancer.

4.7 Cues to Action

The findings in Table 4.28 provide insights into the cues to action that influence women's participation in cervical cancer screening. A significant portion of the respondents, 72.9%, confirmed that there are existing measures to remind women about cervical cancer screening, while 27.1% indicated that such measures do not exist. This suggests that reminders play a crucial role in encouraging women to participate in cervical cancer screening programs. When it comes to healthcare providers talking to women about cervical cancer screening, 74.2% of the respondents reported that their healthcare providers do engage in these conversations, while 25.8% stated that they do not. This indicates that a majority of women receive important information about cervical cancer screening directly from their healthcare providers, which can significantly impact their decision to undergo screening. Furthermore,

71.7% of respondents mentioned that they are reminded to come for cervical pre-cancer screening, while 28.3% said they are not reminded. This highlights the importance of followup reminders in ensuring that women attend their screening appointments. Lastly, a notable 88.3% of respondents reported having seen media messaging about cervical cancer screening, whereas 11.7% had not. This high exposure to media messages suggests that media campaigns are an effective way to disseminate information and raise awareness about cervical cancer screening.

Table 4.28: Cues to action

Cues to action		Frequency	Per cent
Existing measures to remind women about cervical cancer screening	Yes	175	72.9
	No	65	27.1
	Total	240	100.0
Health providers talk to women about cervical cancer screening	Yes	178	74.2
	No	62	25.8
	Total	240	100.0
Remind women to come for cervical precancer screening	Yes	172	71.7
	No	68	28.3
	Total	240	100.0
	Yes	212	88.3

Seen media messages about cervical cancer	No	28	11.7
screening	Total	240	100.0

The findings in Table 4.28 provided valuable insights into the cues to action that influence women's participation in cervical cancer screening. A significant portion of respondents confirmed the existence of measures to remind women about screening, highlighting the crucial role reminders play in encouraging participation in cervical cancer screening programs. Additionally, the majority of respondents reported that their healthcare providers engage in conversations about cervical cancer screening, indicating that direct communication from healthcare providers can significantly impact women's decisions to undergo screening. This finding aligns with previous studies that emphasize the importance of provider-patient communication in promoting health behaviours (Wachira *et al*., 2016). Furthermore, many respondents mentioned receiving reminders for cervical pre-cancer screening appointments, underscoring the importance of follow-up reminders in ensuring attendance. The high exposure to media messaging about cervical cancer screening among respondents suggests that media campaigns are an effective means of disseminating information and raising awareness, which is consistent with literature highlighting the impact of media on health promotion (Yimer *et al*., 2021).

Major themes on women's motivation to take action regarding cervical cancer screening.

Personal Health and Symptoms: A notable motivator for women to seek cervical cancer screening is experiencing personal health issues. This theme was mentioned 8 times,

accounting for 3.3% of responses. Examples include experiencing symptoms such as vaginal bleeding, itchiness, or abdominal pain, which prompt women to get screened.

Education and Awareness: Education and awareness are the most prominent motivators, with 28 mentions, representing 11.7% of responses. Women cited health education, public awareness campaigns, seminars, and media messaging as crucial factors that informed and encouraged them to undergo screening. This underscores the importance of educational initiatives in promoting cervical cancer screening.

Free Screening Initiatives: The availability of free screening services also plays a significant role in motivating women to take action. This theme was mentioned 15 times, making up 6.3% of responses. Free medical camps and no-cost screening services were specifically mentioned as incentives for women to get screened.

Family and Community Influence: Family and community support are critical factors influencing women's decisions to seek screening. This theme appeared 19 times, accounting for 7.9% of responses. Women mentioned the influence of friends, family members, and community efforts as key motivators.

Fear and Prevention: Fear of the disease and the desire for early detection and prevention were mentioned 16 times, representing 6.7% of responses. Women highlighted the fear of the unknown, the potential severity of cervical cancer, and the benefits of early detection as significant triggers for screening.

Personal Responsibility and Curiosity: Personal decisions and curiosity about health status were cited 14 times, making up 5.8% of responses. Many women felt a personal responsibility to get screened and were motivated by a desire to know their health status.

Loss and Experience: The loss of a family member or friend to cervical cancer was a powerful motivator, mentioned 7 times, accounting for 2.9% of responses. Personal experiences with the disease, either directly or through loved ones, prompted women to take preventive action.

Major themes related to awareness of programs or initiatives concerning cervical precancer screening, prevention, or education in the community.

A significant portion of the respondents, 135 out of 240 (56.3%), reported that they are not aware of any existing programs or initiatives related to cervical pre-cancer screening, prevention, or education. This highlights a considerable gap in awareness that needs to be addressed to improve community engagement and participation in cervical cancer prevention efforts.

Among the respondents who are aware of programs or initiatives related to cervical precancer screening, several key themes emerged, highlighting the varied efforts within the community.

Education and Sensitization Efforts: This theme was mentioned by 4.2% of the respondents. Examples include adult education, education in clinics, health education in churches, and community health workers' efforts to encourage screening. These responses indicate that educational initiatives play a crucial role in informing and motivating women to participate in cervical cancer screening programs.

Specific Programs and Organizations: As mentioned by 5.4% of the respondents, specific programs and organizations were highlighted as significant contributors to cervical cancer prevention. Notable examples include the Beth Mugo Organization, the Liverpool NGO at Adams region, free screening services at government hospitals, and medical camps organized by groups like GISHAG Women Group. These initiatives illustrate the importance of organized efforts and the availability of free services in promoting cervical cancer screening.

Media and Public Awareness Campaigns: This theme was identified by 3.3% of the respondents. They noted the impact of radio station mobilization, TV programs about disease prevention, and online campaigns. These media efforts are instrumental in disseminating information and encouraging women to take proactive steps towards cervical cancer screening.

Community and Social Support: Community and social support were mentioned by 5.0% of the respondents. The role of community programs, church organizations, and community health volunteers (CHVs) in monthly education sessions was emphasized. These responses reflect the significant influence of local community support and involvement in health initiatives.

While a majority of respondents (56.3%) were not aware of any programs, the remaining 43.7% identified education and sensitization efforts, specific programs and organizations, media and public awareness campaigns, and community and social support as key components of cervical cancer screening awareness and prevention efforts. Enhancing these

initiatives and increasing their visibility could significantly improve participation rates and early detection of cervical cancer.

4.7.1 Multiple regressions of the specific objectives and the intervening cues to actions

Multiple regression takes into consideration the intervening variable – cue to action – to establish its influence on the dependent variable and independent variable. Table 4.30 presents the two models.

Model Summary

In the first model, the predictors included aggregate psychological factors, aggregate risk factors, aggregate cervical cancer features, and aggregate sociocultural factors. The second model included all the predictors from the first model, with the addition of aggregate cues to action.

Model 1 results showed an R-value of 0.493, indicating a moderate correlation between the predictors and the outcome variable. The R Square value was 0.243, meaning that approximately 24.3% of the variance in pre-cervical cancer screening could be explained by the predictors in this model. The adjusted R Square, which adjusted for the number of predictors in the model, was 0.230. The standard error of the estimate was 0.615, indicating the average distance that the observed values fell from the regression line. These findings align with Yimer *et al*. (2021), who emphasized the role of various factors in influencing health-seeking behaviours.

Model 2 showed a slight improvement with an R-value of 0.497. The R Square value was 0.247, indicating that about 24.7% of the variance in pre-cervical cancer screening was explained by this model's predictors. The adjusted R Square was 0.231, and the standard error

of the estimate was 0.614. This improvement, although slight, suggested that adding cues to action might enhance the model's explanatory power, although marginally.

ANOVA (Analysis of Variance)

In the first Model 1, the regression sum of squares was 28.481 with 4 degrees of freedom, leading to a mean square of 7.120. The F value was 18.818, with a significance level of 0.000, indicating that the model was statistically significant.

In the second Model, the regression sum of squares increased slightly to 29.051 with 5 degrees of freedom, leading to a mean square of 5.810. The F value was 15.389, also with a significance level of 0.000, confirming the model's statistical significance. The statistical significance of both models was consistent with findings by Getachew *et al*. (2013), who underscored the importance of comprehensive models in explaining screening behaviours.

Table 4.29: Multiple regression of the specific objectives and the intervening cues to actions

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.493[a]	.243	.230	.615
2	.497[b]	.247	.231	.614

a. Predictors: (Constant), Aggregate Psychological factors that determine pre-cervical cancer screening, Aggregate Risk factors for cervical cancer, Aggregate Cervical cancer feature, Aggregate sociocultural factors that determine pre-cervical cancer screening

b. Predictors: (Constant), Aggregate Psychological factors that determine pre-cervical cancer screening, Aggregate Risk factors to cervical cancer, Aggregate Cervical cancer feature, Aggregate sociocultural factors that determine pre-cervical cancer screening, Aggregate cues to action

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.481	4	7.120	18.818	.000[b]
	Residual	88.919	235	.378		
	Total	117.400	239			
2	Regression	29.051	5	5.810	15.389	.000[c]
	Residual	88.349	234	.378		
	Total	117.400	239			

a. Dependent Variable: Aggregate cervical pre-cancer screening

b. Predictors: (Constant), Aggregate Psychological factors that determine pre-cervical cancer screening, Aggregate Risk factors for cervical cancer, Aggregate Cervical cancer feature, Aggregate sociocultural factors that determine pre-cervical cancer screening

c. Predictors: (Constant), Aggregate Psychological factors that determine pre-cervical cancer screening, Aggregate Risk factors to cervical cancer, Aggregate Cervical cancer feature, Aggregate sociocultural factors that determine pre-cervical cancer screening,

Aggregate cues to action

Coefficients

In the first Model, the constant term was 1.730, with a t-value of 4.675 and a significance level of 0.000, indicating it was significantly different from zero. Aggregate risk factors had a coefficient of 0.049, with a t-value of 0.766 and a significance level of 0.444, indicating it was not a significant predictor. Aggregate cervical cancer features had a coefficient of 0.251, with a t-value of 3.152 and a significance level of 0.002, indicating a significant positive relationship with pre-cervical cancer screening. This was corroborated by Swanson *et al*. (2018), who found that awareness and understanding of cervical cancer features significantly influenced screening uptake.

Aggregate sociocultural factors had a coefficient of 0.212, with a t-value of 4.463 and a significance level of 0.000, also indicating a significant positive relationship. This finding was supported by Mwenda *et al*. (2022), who highlighted the critical role of sociocultural influences on health-seeking behaviours. Aggregate psychological factors had a coefficient of 0.107, with a t-value of 1.549 and a significance level of 0.123, indicating it was not a significant predictor. This aligned with Lim and Ojo (2016), who noted that psychological factors, while relevant, were not always the strongest predictors.

In the second Model, the constant term was 1.877, with a t-value of 4.831 and a significance level of 0.000. Aggregate risk factors remained non-significant with a coefficient of 0.047, a t-value of 0.739, and a significance level of 0.461. Aggregate cervical cancer features maintained their significance with a coefficient of 0.262, a t-value of 3.277, and a significance level of 0.001, consistent with Swanson *et al*. (2018). Aggregate sociocultural factors also

remained significant with a coefficient of 0.208, a t-value of 4.368, and a significance level of 0.000, supporting findings by Mwenda *et al*. (2022). Aggregate psychological factors remained non-significant with a coefficient of 0.103, a t-value of 1.490, and a significance level of 0.138, aligning with Lim and Ojo (2016). Aggregate cues to action, newly included in Model 2, had a coefficient of -0.135, with a t-value of -1.229 and a significance level of 0.220, indicating it was not a significant predictor. This suggested that cues to action did not significantly enhance the model's explanatory power.

Table 4.30: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.730	.370		4.675	.000
Aggregate Risk factors for cervical cancer	.049	.064	.049	.766	.444
Aggregate Cervical cancer feature	.251	.080	.207	3.152	.002
Aggregate sociocultural factors that determine pre-cervical cancer screening	.212	.048	.293	4.463	.000
Aggregate Psychological factors that determine pre-cervical cancer screening	.107	.069	.106	1.549	.123
2 (Constant)	1.877	.388		4.831	.000

Aggregate Risk factors for cervical cancer	.047	.064	.047	.739	.461
Aggregate Cervical cancer feature	.262	.080	.216	3.277	.001
Aggregate sociocultural factors that determine pre-cervical cancer screening	.208	.048	.287	4.368	.000
Aggregate Psychological factors that determine pre-cervical cancer screening	.103	.069	.102	1.490	.138
Aggregate cues to action	-.135	.110	-.070	-1.229	.220

a. Dependent Variable: Aggregate cervical pre-cancer screening

The analysis indicated that the significant predictors for pre-cervical cancer screening were the aggregate cervical cancer features and aggregate sociocultural factors. These factors showed a positive relationship with pre-cervical cancer screening, meaning higher values in these predictors were associated with higher screening rates. Aggregate risk factors and aggregate psychological factors were not significant predictors in either model. The addition of aggregate cues to action in Model 2 did not significantly improve the model's explanatory power. These findings corroborated previous research by Swanson *et al*. (2018) and Mwenda *et al*. (2022), who emphasized the importance of sociocultural and awareness factors in health-seeking behaviours, while also aligning with Lim and Ojo (2016) regarding the variable impact of psychological factors.

4.8 Recommendations by the respondents

The study established that there was a need for more education and awareness (14.6%) about cervical cancer, suggesting efforts like early education in schools, health talks, community sensitization and media campaigns. Early screening and detection (3.3%) were also emphasized, with recommendations for promoting screenings at a young age, grassroots campaigns and making the procedure more comfortable and accessible. Vaccination (2.1%) against HPV was suggested, with ideas for compulsory programs and school-based vaccinations.

Community and stakeholder involvement (1.3%) was seen as crucial, with suggestions to engage local leaders and community health workers. Media and public campaigns (1.3%) were recommended to reach wider audiences through TV, social media and public market announcements. Access to free screening services (1.3%) was also mentioned, including free programs in government hospitals and rural medical camps.

Promoting a healthy lifestyle and risk avoidance (0.8%) was advised, encouraging a healthy diet, faithful relationships and protection for those with multiple partners. Other suggestions (1.2%) included encouraging women of reproductive age to get screened (0.4%), creating more screening centres (0.4%) and offering free self-specimen collection kits and lab tests (0.4%).

Recommendations from respondents on how healthcare providers can improve cervical cancer screening and increase detection rates.

Respondents recommended creating awareness (10%) through health education, media campaigns, billboards, community sensitization, and public campaigns, emphasizing consistent information dissemination about cervical cancer and the importance of screening

and early detection. Mandatory screening (7.9%) was suggested for women visiting healthcare facilities, mothers attending clinics, and individuals at risk to ensure routine and enforced screening practices. Changing or improving screening methods (5%) included offering less invasive options and multiple methods to accommodate preferences and increase comfort. Education and sensitization (3.8%) focused on healthcare providers educating patients during visits and through programs in schools, churches, and communities about cervical cancer risks and early screening benefits. Improving accessibility and outreach (3.3%) recommended regular check-ups, outreach programs, mobile clinics, and free screening services in underserved communities. Providing empathetic care and psychological support (2.5%) was emphasized for healthcare providers to prepare clients psychologically and boost their confidence during the screening process. Free screening services (1.7%) were suggested in public and private healthcare facilities, including free Pap smears and HPV vaccinations for young girls. Organizing medical camps (1.7%) in rural and underserved areas was seen as essential to reach more women and provide necessary screening services.

Respondents' opinions on the most effective cervical cancer screening programming strategies to improve the uptake of these services in Kenya.

Respondents recommended creating awareness (8.8%) about cervical cancer screening through announcements in public places, media like radio and TV, billboards, and educational programs in schools and community centres. Education and sensitization (6.7%) included community education campaigns, health education in hospitals and schools, and sensitizing patients during visits, aiming to inform them about the risks of cervical cancer and the benefits of early detection. Community mobilization (4.2%) involved outreach programs, campaigns, and community health volunteers, suggesting funding and support for

these efforts to encourage screening. Mandatory screening (3.8%) was recommended for women visiting healthcare facilities, mothers attending clinics, and sexually active women in the reproductive age group to ensure regular screening. Free and accessible screening services (2.9%) were suggested through free programs, mobile clinics, and services in underserved areas to remove financial and logistical barriers. Mobile clinics and outreach programs (2.5%) included medical camps and door-to-door screening services to reach women lacking easy access to healthcare. Improving screening methods (2.5%) recommended less invasive options, multiple methods, and making the process more comfortable. Vaccination programs (1.7%) focused on vaccinating young girls against HPV and integrating these programs with screening efforts to enhance prevention strategies. ***Respondents' opinions on the most effective cues to action for encouraging individuals to prioritize cervical cancer screening.*** Respondents recommended education and sensitization (7.9%), highlighting the importance of educating people about cervical cancer, its risks, the benefits of early detection, and the importance of screening through health education in clinics, villages, and schools, as well as counselling and providing accurate information to dispel myths. Creating awareness (7.5%) was suggested through advertisements, media promotion, community involvement, and platforms like radio and TV to reach a broad audience about the importance of screening. Personal experiences and testimonials (1.7%) were seen as powerful motivators, encouraging cervical cancer survivors to share their stories. Ensuring free and accessible screening services (2.1%) included offering free medical camps, collaborating with private hospitals, and providing free screening services. Community mobilization and involvement (1.7%) were suggested through organizing outreach programs, involving local stakeholders, and conducting door-to-door sensitization. Mandatory screening (1.7%) was recommended for

women visiting healthcare facilities or attending family planning services to ensure higher uptake rates. Reminders and follow-ups (1.3%) included sending SMS reminders, personal invitations, and follow-up messages to keep screening top of mind. Health talks and education sessions (0.8%) were proposed for regular health talks in communities, workplaces, and healthcare facilities to provide ongoing education and motivation. Media campaigns (0.8%) suggested using TV, radio, and social media to broadcast information about cervical cancer screening. Providing incentives and motivations (0.8%) included offering tokens, rewards, or other incentives to encourage participation in screening programs.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents an overview of the study's findings, draws major conclusions, and presents actionable recommendations for improving cervical cancer screening and prevention activities.

5.2 Summary of the Findings 5.2.1 Summary of cervical pre-cancer screening rates among women attending

Mbagathi Level Four Hospital, Nairobi, Kenya

The study revealed that a significant majority of participants were aware of cervical precancer screening, primarily informed through healthcare settings such as hospitals and clinics. Media and advertisements, educational institutions, community networks and religious events also contributed to awareness, though to a lesser extent. Despite high overall awareness, nearly one-fifth of the population lacked knowledge about cervical pre-cancer screening. Regarding cervical cancer screening history, with more than half of the participants never having been screened. This indicates persistent barriers such as sociocultural factors, financial constraints and inadequate health education. Those who had been screened mostly did so within the past year, suggesting recent efforts were somewhat effective. However, there was a decline in screening rates over time. Participants' perceptions about the cost of cervical cancer screening varied, with a majority believing it was free. However, some respondents perceived there was a cost, indicating misinformation that could deter some from screening. The majority believed in the necessity of annual screening.

Interest in screening was high, but nearly one-fifth showed no interest due to reasons like lack of perceived need, fear, discomfort, recent screening or stigma.

5.2.2 Summary of the level of awareness of cervical pre-cancer screening among women attending Mbagathi Level Four Hospital, Nairobi, Kenya

The study revealed that most participants were aware of cervical cancer, with high awareness levels highlighting the importance of knowledge for encouraging screening behaviour. Despite this, the actual uptake of cervical pre-cancer screening remained low. Factors such as financial constraints and psychological barriers also significantly influenced screening uptake. Analysis of demographic characteristics and their association with awareness of cervical cancer showed that having a formal occupation significantly increased the likelihood of being aware of cervical cancer. Other demographic factors, such as age, marital status, religion, number of children, education level, and income, did not show significant associations. Awareness of cervical cancer risk factors was generally high among participants. They recognized early initiation of sexual activity, STIs, multiple sexual partners, multiparity, tobacco use, immunosuppression and drug and substance abuse as significant risk factors. This high level of awareness emphasizes the need for continuous educational efforts to maintain and enhance knowledge about these risks. The study also found that knowing someone with cervical cancer or having heard of someone who died from it significantly impacted awareness and attitudes towards screening, underscoring the influence of personal connections on health behaviours.

5.2.3 Summary of Sociocultural Factors that influence cervical pre-cancer screening among women attending Mbagathi Level Four Hospital, Nairobi, Kenya

A majority of respondents had health insurance coverage through the National Hospital Insurance Fund (NHIF), which facilitated access to healthcare services, including cervical cancer screening. However, a substantial minority without NHIF coverage faced financial barriers, highlighting disparities in healthcare access related to socioeconomic status. Communication about cervical cancer was prevalent among the respondents, with many actively engaging in discussions about the topic. This active communication is crucial for spreading awareness and encouraging preventive measures. Nonetheless, a few participants did not engage in such discussions, likely due to cultural taboos, stigma or lack of access to reliable information. The screening status of friends or relatives significantly influenced the respondents' attitudes toward cervical cancer screening. A majority reported that their social circles had undergone screening. However, a significant proportion noted that their friends or relatives had not been screened.

5.2.4 Summary of psychological factors that influence cervical pre-cancer screening among women attending Mbagathi Level Four Hospital, Nairobi, Kenya

The study revealed significant psychological barriers influencing cervical pre-cancer screening among women. A significant number of respondents found the screening procedure uncomfortable, which served as a deterrent. Additionally, fear of a potential cancer diagnosis was prevalent, highlighting the need for psychological support to mitigate these concerns. The stigma associated with cervical cancer further discouraged women from seeking screening. However, most women recognized the importance of early detection and felt a strong sense of personal responsibility towards getting screened, indicating high health

consciousness and proactive health behaviour. The analysis of mean scores for psychological factors showed that discomfort, fear of diagnosis, and perceived stigma were significant barriers, with high mean scores reflecting widespread concern. Conversely, the high mean scores for the importance of early detection and personal responsibility indicated strong awareness and commitment to health management. The regression analysis indicated a moderate positive correlation between psychological factors and screening uptake, with psychological barriers explaining about 11.9% of the variance in screening behaviours. Awareness of cervical cancer fatalities was relatively high, with nearly half of the respondents knowing someone who had died from the disease. Confidence levels among women regarding various aspects of cervical cancer screening were notably high. Most respondents felt confident in following their screening schedules, communicating with healthcare providers, and maintaining healthy lifestyle behaviours.

5.2.5 Summary of Cervical pre-cancer screening uptake among women attending Mbagathi level four hospitals in Nairobi, Kenya

The study shows that while most women at Mbagathi Level Four Hospital in Nairobi are aware of cervical pre-cancer screening, nearly one-fifth lack knowledge due to socio-cultural factors, financial constraints, and inadequate health education. Despite this, the majority believe in the necessity of annual screening, but a significant number show no interest due to perceived need, fear, discomfort, or stigma. Despite psychological barriers, women recognize the importance of early detection and feel a strong sense of personal responsibility.

5.3 Conclusions

Objective 1: To determine cervical pre-cancer screening rates

The screening rate among women attending Mbagathi Level Four Hospital was 39.6%, higher than national averages but still below WHO's 70% target. This reflects missed opportunities in awareness-to-action conversion.

Objective 2: To assess the level of awareness of cervical pre-cancer screening

Most participants were aware of screening and its importance, yet awareness did not translate to uptake. This gap reveals limitations in current communication and education efforts.

Objective 3: To determine socio-cultural factors that influence screening

Spousal support, community norms, income, and health insurance status significantly affected screening decisions. Cultural taboos and stigma continue to act as deterrents.

Objective 4: To identify psychological factors influencing screening

Fear of diagnosis, procedural discomfort, and perceived stigma were prominent psychological barriers. However, women who recognized early detection as critical and viewed screening as a personal responsibility were more likely to participate.

5.4 Recommendations

1. Scale Up Tailored Health Education Campaigns: Leverage schools, religious institutions, media, and social networks to deliver age- and culture-sensitive messages. Include testimonials from cervical cancer survivors to address emotional barriers and misconceptions. Adapt content to suit illiterate populations using visual and audio materials.

2. Address Psychological Barriers Through Integrated Counselling: Integrate psychological counselling into screening services to reduce fear, anxiety, and stigma. Train healthcare providers to offer empathetic communication and support during procedures.
3. Strengthen Community and Spousal Involvement: Engage male partners through community forums and couple-based health education. Mobilize community health volunteers to champion cervical screening at grassroots level.
4. Expand Access and Service Delivery Options: Introduce mobile screening units and self-sampling kits, especially in underserved areas. Ensure consistent availability of free or SHA-covered services and promote awareness of these entitlements.
5. Enhance Health System Support and Monitoring: Implement feedback systems to track screening experiences and service satisfaction. Strengthen data collection systems to track screening trends and inform continuous quality improvement.

5.5 Suggested Areas for Further Studies

Future research should:

1. Explore the role of mental health conditions (e.g., depression, anxiety, PTSD) in screening behaviour and health-seeking decisions.
2. Investigate the effectiveness of peer support groups in reducing stigma and increasing screening uptake.
3. Assess the impact of targeted religious outreach programs on cervical cancer awareness and screening.
4. Conduct a longitudinal study to evaluate behavioural change following psychological counselling or male engagement interventions.
5. Examine cost-effectiveness of self-sampling kits and mobile clinics in increasing rural screening rates

REFERENCES

Abdikarim, I. K., Atieno, W. M. C., & Habtu, M. (2017). Prevalence and associated factors of cervical cancer screening among Somali women in an urban settlement in Kenya. *Journal of Community & Public Health Nursing*

Abiodun, O. A., Olu-Abiodun, O. O., Sotunsa, J. O., & Oluwole, F. A. (2014). Impact of health education intervention on knowledge and perception of cervical cancer and cervical screening uptake among adult women in rural communities in Nigeria. *BMC Public Health, 14, 1-9.*

Adegboyega, A., Aleshire, M., Dignan, D., and Hatcher, J. (2019). Spousal support and knowledge related to cervical cancer screening: Are Sub-Saharan African immigrant men interested? *Health Care for Women International, 40:6, 665-681,* DOI: 10.1080/07399332.2019.1615914

Ampofo, A. G., Adumatta, A. D., Owusu, E., & Awuviry-Newton, K. (2020). A crosssectional study of barriers to cervical cancer screening uptake in Ghana: An application of the health belief model. *PLOS ONE, 15(4), e0231459.* https://doi.org/10.1371/journal.pone.0231459

Arbyn, M., Weiderpass, E., Bruni, L., de Sanjosé, S., Saraiya, M., Ferlay, J., & Bray, F. (2020). Estimates of incidence and mortality of cervical cancer in 2018: A worldwide analysis. The *Lancet Global Health, 8(2), e191–e203.*

Arrossi, S., Thouyaret, L., Paul, L., et al. (2015). HPV self-collection in Latin America: lessons learned and new opportunities. BMJ Global Health, 1(2), e000126. https://doi.org/10.1136/bmjgh-2016-000126

Ayenew, A. A., Zewdu, B. F., & Nigussie, A. A. (2020). Uptake of cervical cancer screening service and associated factors among age-eligible women in Ethiopia: Systematic

review and meta-analysis. *Infectious Agents and Cancer*, *15*. https://doi.org/10.1186/s13027-020-00334-3

Biddell, C. B., Spees, L. P., Smith, J. S., Brewer, N. T., Des Marais, A. C., Sanusi, B. O., Hudgens, M. G., Barclay, L., Jackson, S., & Kent, E. E. (2021). Perceived financial barriers to cervical cancer screening and associated cost burden among low-income, under-screened women. *Journal of Women's Health, 30(9), 1243–1252.*

Black, E., Hyslop, F., & Richmond, R. (2019). Barriers and facilitators to uptake of cervical cancer screening among women in Uganda: A systematic review. *BMC Women's Health, 19(1), 1–12.*

Bradford, L., & Goodman, A. (2013). Cervical cancer screening and prevention in lowresource settings. *Clinical Obstetrics and Gynecology, 56(1), 76–87.*

Bruni, L., Barrionuevo-Rosas, L., Albero, G., Serrano, B., Mena, M., Gómez, D., Muñoz, J., Bosch, F., & De Sanjosé, S. (2017). ICO Information Centre on HPV and cancer (HPV Information Centre). *Human Papillomavirus and Related Diseases in the World. Summary Report, 27.*

Bula, A. K., Lee, F., Chapola, J., Mapanje, C., Tsidya, M., Thom, A., Tang, J. H., & Chinula, L. (2022). Perceptions of cervical cancer and motivation for screening among women in Rural Lilongwe, Malawi: A qualitative study. *PLOS ONE, 17(2), e0262590. https://doi.org/10.1371/journal.pone.0262590*

Burrowes, S., Holcombe, S. J., Leshargie, C. T., Hernandez, A., Ho, A., Galivan, M., Youb, F., & Mahmoud, E. (2022). Perceptions of cervical cancer care among Ethiopian women and their providers: A qualitative study. *Reproductive Health, 19*. https://doi.org/10.1186/s12978-021-01316-3

Candidate, P., Tayebeh Darooneh, P. C., Candidate, P., Fahimeh Hajizadeh, M., & Giti

Ozgoli, P. (2018). The Relationship between Health Locus of Control and Iranian Women's Beliefs Toward Pap Smear Screening. *International Journal of Community Based Nursing and Midwifery, 7(1), 43-51*. https://doi.org/10.30476/IJCBNM.2019.40845

Canfell, K., Kim, J.J., Brisson, M., et al. (2019). Mortality impact of achieving WHO cervical cancer elimination targets: a comparative modelling analysis in 78 lowincome and lower-middle-income countries. The Lancet, 395(10224), 591–603. https://doi.org/10.1016/S0140-6736(20)30157-4

Centers for Disease Control and Prevention (CDC). (2022). Cancer Screening – United States, 2020. MMWR Morb Mortal Wkly Rep 71:33–39. https://www.cdc.gov/mmwr/volumes/71/wr/mm7102a3.htm

Coleman M. P. (2014). Cancer survival: global surveillance will stimulate health policy and improve equity. *Lancet (London, England), 383(9916), 564–573*. https://doi.org/10.1016/S0140-6736(13)62225-4

Compaore, S., Ouedraogo, C. M., Koanda, S., Haynatzki, G., Chamberlain, R. M., & Soliman, A. S. (2016). Barriers to cervical cancer screening in Burkina Faso: Needs for patient and professional education. *Journal of Cancer Education, 31(4), 760–766.*

Daniel, S. N. (2021). Determinants of Cervical Cancer Screening Service Utilization Among Women Aged 25-49 Years Attending Kitengela Sub-County Hospital- Kajiado County. *University of Nairobi Repository*.

Denny, L. (2012). Cervical cancer: Prevention and treatment. *Discovery Medicine, 14(75), 125–131.*

Desta, M., Getaneh, T., Yeserah, B., Worku, Y., Eshete, T., Birhanu, M. Y., Kassa, G. M., Adane, F., & Yeshitila, Y. G. (2021). Cervical cancer screening utilization and predictors among eligible women in Ethiopia: A systematic review and meta-analysis. *PLOS ONE, 16(11), e0259339.* https://doi.org/10.1371/journal.pone.0259339

Ferlay, J., Ervik, M., Lam, F., Colombet, M., Mery, L., Piñeros, M., Znaor, A., Soerjomataram, I., & Bray, F. (2018). Global Cancer Observatory: Cancer today. *Lyon, France: International agency for research on cancer.*

Gatumo, M., Gacheri, S., Sayed, A.-R., & Scheibe, A. (2018). Women's knowledge and attitudes related to cervical cancer and cervical cancer screening in Isiolo and Tharaka Nithi counties, Kenya: A cross-sectional study. *BMC Cancer, 18(1), 1–9.*

Gemeda, E. Y., Kare, B. B., Negera, D. G., Bona, L. G., Derese, B. D., Akale, N. B., ... & Tekle, A. G. (2020). Prevalence and predictor of cervical cancer screening service uptake among women aged 25 years and above in Sidama Zone, Southern Ethiopia, Using Health Belief Model. *Cancer Control, 27(1), 1073274820954460.*

Getachew, S., Getachew, E., Gizaw, M., Ayele, W., Addissie, A., & Kantelhardt, E. J. (2019). Cervical cancer screening knowledge and barriers among women in Addis Ababa, Ethiopia. *PLOS ONE, 14(5), e0216522.* https://doi.org/10.1371/journal.pone.0216522

Getahun, F., Mazengia, F., Abuhay, M., & Birhanu, Z. (2013). Comprehensive knowledge about cervical cancer is low among women in Northwest Ethiopia. *BMC Cancer, 13(1), 1–7.*

GLOBOCAN, (2020). GLOBOCAN 2020, Global Cancer Observatory, Kenya Fact Sheet. *World Health Organization: International agency for cancer research*

Isabirye, A., Mbonye, M. K., & Kwagala, B. (2020). Predictors of cervical cancer screening uptake in two districts of Central Uganda. *PLOS ONE, 15(12),* e0243281. https://doi.org/10.1371/journal.pone.0243281

Kangethe, J. M., Monroe-Wise, A., Muiruri, P. N., Komu, J. G., Mutai, K. K., Nzivo, M. M., & Pintye, J. (2022). Utilisation of cervical cancer screening among women living with HIV at Kenya's national referral hospital. *Southern African Journal of HIV medicine, 23(1), 1353*. https://doi.org/10.4102/sajhivmed.v23i1.1353

Kangmennaang, J., Onyango, E. O., Luginaah, I., & Elliott, S. J. (2018). The next SubSaharan African epidemic? A case study of the determinants of cervical cancer knowledge and screening in Kenya. *Social Science & Medicine, 197, 203-212*.

Kasraeian, M., Hessami, K., Vafaei, H., Asadi, N., Foroughinia, L., Roozmeh, S., & Bazrfashan, K. (2020). Patients' self-reported factors influencing cervical cancer screening uptake among HIV-positive women in low-and middle-income countries: An integrative review. *Gynecologic Oncology Reports, 33, 100596*.

Kasraeian, M., Vafaei, H., Roozmeh, S., et al. (2020). Barriers to Pap smear screening among Iranian women: a systematic review. Archives of Gynecology and Obstetrics, 301(3), 627–639.

Kenya National Bureau of Statistics (KNBS). (2020). *Economic Survey 2020*. https://www.knbs.or.ke

KIPPRA. (2019). *Kenya Economic Report 2019*. Nairobi: Kenya Institute for Public Policy Research and Analysis.

KNBS (2019). Kenya Population and Housing Census Report, 2019. *Kenya National Bureau of Statistics.*

Kothari, C. R., & Garg, G. (2014). Research Methodology: Methods and Techniques (3rd ed.). *New Age International (P) Limited, Publishers*.

Lim, N. W., & Ojo, A. A. (2016). Barriers to utilisation of cervical cancer screening in Sub Sahara Africa: A systematic review. *European Journal of Cancer Care, 26(1), e12444*. https://doi.org/10.1111/ecc.12444

Mehlhorn, G., Obermann, E., Negri, G., Bubendorf, L., Mian, C., Koch, M., ... & Griesser, H. (2013). HPV L1 detection discriminates cervical precancer from transient HPV infection: a prospective international multicenter study. *Modern Pathology, 26(7), 967-974*.

Modibbo, F. I., Dareng, E., Bamisaye, P., Jedy-Agba, E., Adewole, A., Oyeneyin, L., ... & Adebamowo, C. (2016). Qualitative study of barriers to cervical cancer screening among Nigerian women. *BMJ open, 6(1), e008533*.

Modibbo, F., Iregbu, K.C., Okuma, J., et al. (2016). Randomized trial evaluating selfsampling for HPV DNA based tests for cervical cancer screening in Nigeria. Infectious Agents and Cancer, 11(1), 12. https://doi.org/10.1186/s13027-016-0066-1

MOH (2018). Kenya National Cancer Screening Guidelines. *Ministry of Health, Kenya*.

MOH (2020). Kenya Cancer Policy 2019-2030. *Ministry of Health, Kenya*.

Moore, A. R., & Driver, N. (2014). Knowledge of Cervical Cancer Risk Factors Among Educated Women in Lomé, Togo. *SAGE Open*. https://doi.org/10.1177/2158244014557041

Morema, E.N., Atieli, H.E., and, Onyango, R.O. (2014). Determinants of Cervical screening services uptake among 18–49-year-old women seeking services at the Jaramogi

Oginga Odinga Teaching and Referral Hospital, Kisumu, Kenya. *BMC Health Serv Res 14, 335*. https://doi.org/10.1186/1472-6963-14-335

Moshi, F. V., Bago, M., Ntwenya, J., Mpondo, B., & Kibusi, S. M. (2019). Uptake of cervical cancer screening services and its association with cervical cancer awareness and knowledge among women of reproductive age in Dodoma, Tanzania: A crosssectional study. *The East African Health Research Journal, 3(2), 105*.

Mutambara, J., Mutandwa, P., Mahapa, M., Chirasha, V., Nkiwane, S., & Shangahaidonhi, T. (2017). Knowledge, attitudes and practices of cervical cancer screening among women who attend traditional churches in Zimbabwe. *Journal of Cancer Research and Practice, 4(2), 53–58.*

Mwenda, M. (2019). Prevalence, barriers And Facilitators of Cervical Cancer Screening Among Women Attending Gynaecology Outpatient Clinics in Nairobi County. *University of Nairobi Repository*.

Mwenda, V., Mburu, W., Bor, P., Nyangasi, M., Arbyn, M., Weyers, S., Tummers, P., & Temmerman, M. (2022). Cervical cancer programme, Kenya, 2011–2020: Lessons to guide elimination as a public health problem. *Ecancermedicalscience, 16.* https://doi.org/10.3332/ecancer.2022.1442

Ndejjo, R., Mukama, T., Kiguli, J., & Musoke, D. (2017). Knowledge, facilitators and barriers to cervical cancer screening among women in Uganda: A qualitative study. *BMJ Open, 7(6), e016282.*

Ndejjo, R., Mukama, T., Musabyimana, A., & Musoke, D. (2016). Uptake of cervical cancer screening and associated factors among women in rural Uganda: A cross-sectional study. *PloS One, 11(2), e0149696*.

Ng'ang'a, A., Nyangasi, M., Nkonge, N. G., Gathitu, E., Kibachio, J., Gichangi, P., Wamai, R. G., & Kyobutungi, C. (2018). Predictors of cervical cancer screening among Kenyan women: Results of a nested case-control study in a nationally representative survey. *BMC Public Health, 18(3), 1–10.*

Ngoma, M., & Autier, P. (2019). Cancer prevention: Cervical cancer. *Ecancermedicalscience, 13.*

Ngune, I., Kalembo, F., Loessl, B., & Kivuti-Bitok, L. W. (2020). Biopsychosocial risk factors and knowledge of cervical cancer among young women: A case study from Kenya to inform HPV prevention in Sub-Saharan Africa. *PloS One, 15(8), e0237745*.

Nyangasi, M., Nkonge, N. G., Gathitu, E., Kibachio, J., Gichangi, P., Wamai, R. G., & Kyobutungi, C. (2018). Predictors of cervical cancer screening among Kenyan women: Results of a nested case-control study in a nationally representative survey. *BMC Public Health, 18(Suppl 3).* https://doi.org/10.1186/s12889-018-6054-9

Okolie, E. A., Barker, D., Nnyanzi, L. A., Anjorin, S., Aluga, D., & Nwadike, B. I. (2022). Factors influencing cervical cancer screening practice among female health workers in Nigeria: A systematic review. *Cancer reports (Hoboken, N.J.), 5(5), e1514*. https://doi.org/10.1002/cnr2.1514

Ongtengco, N., Thiam, H., Collins, Z., De Jesus, E. L., Peterson, C. E., Wang, T., Hendrix, E., Ndiaye, Y., Gueye, B., Gassama, O., Kasse, A. A., Faye, A., Smith, J. S., Fitzgibbon, M., & Dykens, J. A. (2020). Role of gender in perspectives of discrimination, stigma, and attitudes relative to cervical cancer in rural Sénégal. *PLOS ONE, 15(4), e0232291*. https://doi.org/10.1371/journal.pone.0232291

Owenga, J. A., & Nyambedha, E. O. (2018). Perception of cervical cancer patients on their financial challenges in Western Kenya. *BMC Health Services Research, 18(1), 1–8.*

Page, C. M., Ibrahim, S., Park, L. P., & Huchko, M. J. (2020). Systems-level barriers to treatment in a cervical cancer prevention program in Kenya: Several observational studies. *PLOS ONE, 15(7), e0235264*. https://doi.org/10.1371/journal.pone.0235264 Paul, P., Winkler, J. L., Bartolini, R. M., Penny, M. E., Huong, T. T., Nga, L. T., Kumakech, E., Mugisha, E., & Jeronimo, J. (2013). Screen-and-treat approach to cervical cancer prevention using visual inspection with acetic acid and cryotherapy: Experiences, perceptions, and beliefs from demonstration projects in Peru, Uganda, and Vietnam.

The Oncologist, 18(12), 1278–1284.

Rama, C. H., Villa, L. L., Pagliusi, S., Andreoli, M. A., Costa, M. C., Aoki, A. L., LongattoFilho, A., & Eluf-Neto, J. (2010). Awareness and knowledge of HPV, cervical cancer, and vaccines in young women after first delivery in São Paulo, Brazil crosssectional study. *BMC Women's Health, 10(1), 1–7.*

Rosenstock, I. M. (1974). The health belief model and preventive health behaviour. *Health education monographs, 2(4), 354-386.*

Rositch, A. F., Gatuguta, A., Choi, R. Y., Guthrie, B. L., Mackelprang, R. D., Bosire, R., Manyara, L., Kiarie, J. N., Smith, J. S., & Farquhar, C. (2012). Knowledge and acceptability of pap smears, self-sampling and HPV vaccination among adult women in Kenya. *PloS One, 7(7), e40766.*

Rosser, J. I., Njoroge, B., & Huchko, M. J. (2015). Changing knowledge, attitudes, and behaviours regarding cervical cancer screening: The effects of an educational intervention in rural Kenya. *Patient education and counselling, 98(7), 884-889.*

Rosser, J. I., Njoroge, B., & Huchko, M. J. (2016). Cervical cancer stigma in rural Kenya: what does HIV have to do with it? *Journal of Cancer Education, 31, 413-418*.

Shastri, S.S., Mittra, I., Mishra, G.A., et al. (2014). Effect of VIA screening by primary health workers on cervical cancer mortality in India: a cluster-randomised controlled trial. The Lancet, 383(9912), 524–532. https://doi.org/10.1016/S0140-6736(13)62274-2

Singh, S., & Badaya, S. (2012). Factors influencing uptake of cervical cancer screening among women in India: A hospital-based pilot study. *J Community Med Health Educ, 2(157), 2161–0711*.

Swanson, M., Ibrahim, S., Blat, C., Oketch, S., Olwanda, E., Maloba, M., & Huchko, M. J. (2018). Evaluating a community-based cervical cancer screening strategy in Western Kenya: A descriptive study. *BMC Women's Health, 18(1), 1–10*.

Teng, F. F., Mitchell, S. M., Sekikubo, M., Biryabarema, C., Byamugisha, J. K., Steinberg, M., Money, D. M., & Ogilvie, G. S. (2014). Understanding the role of embarrassment in gynaecological screening: A qualitative study from the ASPIRE cervical cancer screening project in Uganda. *BMJ Open, 4(4), e004783*.

Vermandere, H., Naanyu, V., Degomme, O., & Michielsen, K. (2015). Implementation of an HPV vaccination program in Eldoret, Kenya: Results from a qualitative assessment by key stakeholders. *BMC Public Health, 15(1), 1–15*.

Wachira, J., Asirwa, F. C., Busakhala, N., Naanyu, V., Kisuya, J., Otieno, G., Keter, A., Mwangi, A., & Inui, T. (2016). Factors Associated with Uptake of Visual Inspection with Acetic Acid (VIA) for Cervical Cancer Screening in Western Kenya. *PLOS ONE, 11(6), e0157217*. https://doi.org/10.1371/journal.pone.0157217

Wong, C. (2011). Knowledge and perception on cervical cancer screening and prevention among nursing graduates in Hong Kong. *HKU Theses Online (HKUTO).*

World Bank. (2021). *Kenya Economic Update: Navigating the Pandemic*. https://www.worldbank.org

World Health Organization Regional Office for Europe (WHO Europe). (2020). Cervical cancer screening in the WHO European Region. https://www.euro.who.int/en/health-topics/disease-prevention/screening/cervicalcancer

Yimer, N., Mohammed, M., Solomon, K., Tadese, M., Grutzmacher, S., Meikena, H., Alemnew, B., Sharew, N., & Habtewold, T. (2021). Cervical cancer screening uptake in Sub-Saharan Africa: A systematic review and meta-analysis. *Public Health, 195, 105-111*. https://doi.org/10.1016/j.puhe.2021.04.014

APPENDICES

Appendix I: Consent Form

Research Topic: Determinants of cervical pre-cancer screening uptake among Women attending Mbagathi level four hospital in Nairobi, Kenya

Investigator: Kennedy Kinyua
Mount Kenya University
kenkinyua10@gmail.com

Dear Participant

Introduction and purpose of the study

You are cordially asked to take part in a study to investigate the determinant of cervical precancer screen uptake among women attending Mbagathi Level Four Hospital in Nairobi, Kenya. With this study, we hope to learn important things about what factors affect the uptake of cervical pre-cancer screening.

Study Procedures

If you agree to participate in this study, you will be required to:

1. Consent that you have agreed to participate voluntarily in this research.
2. Complete a survey questionnaire. You will be provided with a questionnaire consisting of questions on cervical pre-cancer screening awareness, sociocultural factors and psychological factors. It is estimated it will take 20 to 30 minutes to answer these questions.

Subject Participation eligibility

All women attending Mother wellness clinic at Mbagathi level four hospital, Nairobi, Kenya who are 25 and 49 years.

Potential Risks and discomforts

It is important to note that there are no known risks associated with participation in this study. However, we acknowledge that some of the questions posed during the interview may touch upon intimate and sensitive topics. You have the complete right to decline from answering to any questions that make you uncomfortable since we respect your autonomy and comfort.

You may also end the interview at any time if you so want; neither participating in the interview nor withdrawing will affect your eligibility for any services or benefits. We appreciate your time and willingness to participate in this research and estimate that the interview will take about forty minutes to complete. Your well-being and comfort throughout the process are of utmost importance to us, and we are committed to ensuring a respectful and supportive environment for all participants.

Potential Benefits

While there will be no direct, immediate benefit to you for your participation in this study, we believe that your involvement holds the potential for broader societal benefits. The information gathered from this study is invaluable in advancing our understanding of cervical cancer screening and treatment programs. By participating, you are contributing to the enhancement of these programs, which, in turn, can have a positive impact on women's healthcare. Your insights and experiences will help inform and strengthen the approach taken by healthcare professionals and policymakers in engaging with women regarding cervical pre-cancer screening and treatment.

Moreover, your participation aligns with the broader goals of achieving Universal Health Coverage (UHC) and the Vision 2030 objectives. Policymakers can utilize the valuable insights gleaned from research participants like yourself to inform evidence-based policy formulation aimed at enhancing cervical pre-cancer screening and treatment services. Your contribution is a vital part of the collective effort to advance women's health and work towards a healthier and more equitable future for all.

Confidentiality

We take the utmost care to protect your privacy and ensure the confidentiality of all information obtained during this study. To safeguard your identity, every piece of data collected will be meticulously coded, ensuring that no respondent's name or information will be linked with the data in any form. Rest assured that when discussing or reporting the research findings, no individual names or identifying details will be disclosed. Your anonymity is of paramount importance to us.

Furthermore, all research files and collected information will be safely kept inaccessible to unauthorized individuals. Once the data has been fully analyzed and the study is concluded, all files and records will be responsibly and permanently destroyed, further ensuring the confidentiality of your information. Your trust in our commitment to safeguarding your privacy is deeply appreciated, and we are dedicated to upholding the highest standards of confidentiality throughout this research process. **Voluntary participation and authorization**

It is completely voluntary to participate in this study. There is no pressure on your part to take part, and what you decide won't affect your connection with the researcher going forward or your ability to use hospital services.

If you do decide to participate, we will request your authorization through a consent form.

Your signature on this consent form indicates your willingness to participate at that moment.

It is crucial to highlight that even after giving consent, you will still have the option to withdraw from participating in the study at any moment and without giving a reason. This withdrawal will have no bearing on your relationship with the researcher or your access to hospital services.

Consent

I have had a chance to go through the information on this form and have had a chance to study and understand the material that was sent to me thoroughly. I understand that my participation in this study is completely voluntary and that I can stop at any time, without having to give a reason, and without feeling like I've lost anything. I understand that I will receive a copy of this permission form for my records. I voluntarily and voluntarily consent to participate in this research, fully aware of my rights and the voluntary nature of my involvement.

Name: ……_Signature: ……__Date: ……_____
Participant

Name: ……_Signature: ……__Date: ……
Researcher

Name: ……_Signature: ……__Date: …… Witness

Appendix II: Questionnaire

Part A: Demographic Information

1. Participants' code: _____
2. Age: _____
3. Marital Status:
    a. Single
    b. Married,
    c. divorced,
    d. Separated

e. Widow

f. Others specify …….

4. What is your religion

a. Christian

b. Muslim

c. Others (Specify): …….

5. Ethnic group: …….

6. The number of children: _____

7. What is your highest level of education completed?

a. Primary

b. Secondary

c. Tertiary

d. Others (specify); _____

8. What is your current occupation? _____

9. What is your monthly income?

a. Ksh. 0 – 10,000

b. Ksh. 10,001 – 20,000

c. Ksh. 20,001 – 30,000

d. Over Ksh. 30,000

Part B: Level of awareness about Cervical cancer

10. Have you ever heard about Cervical Cancer

a. No

b. Yes

11. If yes, in above (10) where did you first hear or learn about cervical cancer?

……

……

…….

12. Respond with how much you agree with the following statements as risk factors for cancer of the cervix.

Statement	S.D.	D	N	A	S. A
Early initiation of sexual activity					
Infection with STIs					
Having multiple sexual partners					
Multiparity					
Tobacco use (Active and Passive)					
Immunosuppression like in HIV/AIDS					
Drug and substance use					

Key: S.D=Strongly Disagree, D=Disagree, N=Neutral, A=GAgree, S.A.=Strongly Agree

13. Rate how much you agree with the following statements as clinical features of cancer of the cervix.

Statement	S.D.	D	N	A	S. A
Abnormal per vaginal bleeding					
Unusual per vaginal discharge					

Body wasting					
Contact bleeding during intercourse.					
Foul smell					
Asymptomatic					

14. Do you know anyone who has had cancer of the cervix?

    a. Yes

    b. No

15. If yes what happened to them?

    ……

    ……
    ……

    …….

16. Have you ever heard of a person who has died of cancer of the cervix?

    a. Yes

    b. No

Part C: Awareness of Cervical Pre-Cancer Screening

17. Have you heard about cervical pre-cancer screening?

    a. Yes

    b. No

18. If yes, in above (17) where did you first hear or learn about cervical pre-cancer screening?

……

……

……

19. Have you ever been screened for cervical cancer before?

    a. Yes

    b. No

20. If yes in above, how many years ago

    a. 1 year

    b. 2 years

    c. 3 years
    d. 4 years

    e. 5 years or more

21. Is there a hospital charge for getting screened for cancer of the cervix?

    a. Yes

    b. No

22. If yes, how much is the cost? ……

23. How often should one do screening?

    a. After 1 year

    b. After 2 years

    c. After 3 years

    d. After 4 years

    e. 5 years

24. How is cervical cancer screening done? ----------

---

25. Select all various cervical pre-cancer screening tests that you know

    a. VIA

    b. VIA/VILLI

    c. Pap Smear

    d. HPV DNA testing

26. Are you interested in taking a cervical screening test?

    a. Yes
    b. No,

27. If no, in 26. Specify why you are not interested in taking the cervical screening test.

    ……

    ……

    ……

    ……..

28. Respond to the following statement about cervical pre-cancer screening on how much you agree with them.

Statement	S.D.	D	N	A	S. A

Cervical Cancer is curable if detected early.					
I am at risk of getting cervical cancer.					
Women have up to 80% lifetime risk of getting cervical cancer.					
You can be vaccinated against getting cancer of the cervix.					
Cancer of the cervix is a life-threatening disease.					
One can collect her cervical sample on her own for cervical screening tests.					

Part D: Sociocultural factors that determine Cervical Pre-Cancer Screening

29. Do you have a health insurance policy (NHIF)?

    a. Yes

    b. No

30. Have you heard any of your friends and relatives talk to you about cancer of the cervix?

    a. Yes

    b. No

31. Has any of your friends or relatives been screened for cancer of the cervix?

    c. Yes

    d. No

32. Respond to the following statements:

Statement	S.D.	D	N	A	S. A

I am confident about talking to friends or relatives about Cervical cancer screening.					
Pelvic examination is a taboo.					
Seeking healthcare services is a family collaborative decision.					
My spouse is very supportive of cervical cancer screening.					
I feel sometimes limited in seeking healthcare services as a woman.					

Part E: Psychological Factors that Determine Cervical Pre-Cancer Screening.

33. Respond to these statements

Statement	S.D.	D	N	A	S. A
Cervical pre-cancer screening is a very uncomfortable procedure.					
I fear being diagnosed with cervical cancer.					
Cervical cancer patients are stigmatized.					
I consider early detection of cervical cancer through screening very seriously.					
I believe that getting a cervical cancer screening is a personal responsibility.					

34. Have you ever heard of a person who died of cancer of the cervix?

    a. Yes

    b. No

35. Cervical screening services are readily available in my nearby health facility.

    a. Yes

    b. No

36. I am confident I can follow my screening schedule appointments.

    a. Very confident

    b. Somehow confident

    c. Not confident at all

37. I am confident to talk to my healthcare provider about any concerns or questions regarding cervical cancer screening or treatment.

    a. Very confident

    b. Somehow confident

    c. Not confident at all

38. I am confident that maintaining healthy lifestyle behaviours can reduce the risk of developing cervical cancer.

    a. Very confident

    b. Somehow confident

    c. Not confident at all

Part F: Cues to Action

39. Are there any messages reminding women about getting screened against cancer of the cervix at this hospital?

    a. Yes

b. No

40. Has any healthcare provider from this hospital talked to you about cervical cancer screening?

    a. Yes

    b. No

41. Do we have any reminder mechanisms for reminding women to come for cervical precancer screening at this hospital?

    a. Yes

    b. No

42. Have you come across messages through any media including social media encouraging cervical cancer screening in Kenya?

    a. Yes

    b. No.

43. Can you recall any specific cues or triggers that have motivated you to take action regarding cervical cancer screening? If yes, please describe them.

    ……

    ……

    ……

    ……

    ……

44. Are you aware of any existing programs or initiatives related to cervical pre-cancer screening, prevention or education in the community? If yes, please provide details.

    ……

    ……

……

Part G: Recommendations

45. Based on your knowledge about cervical cancer, what recommendations would you give to promote awareness and prevention of the disease?

……

……

……

……

46. In your own opinion, what steps can healthcare providers take to improve cervical cancer screening and high detection rates?

……

……

……

……..

47. In your own opinion, what would be the most effective cervical cancer screening programming strategies to improve the uptake of these services in Kenya?

……

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……..

48. In your own opinion, what types of cues to action are very effective in encouraging individuals to prioritize cervical cancer screening?

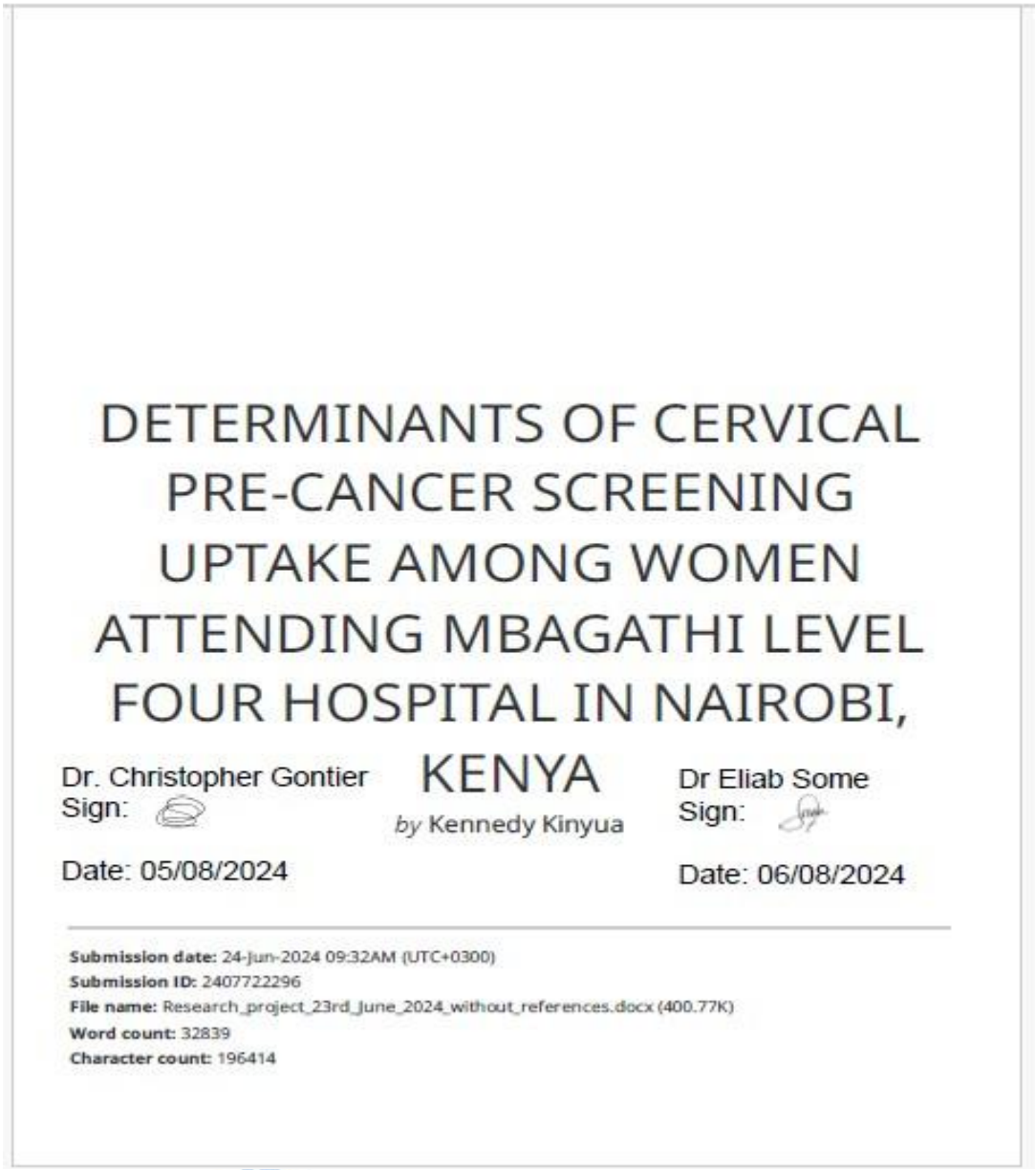
……

……

……

……

Appendix III: Similarity Index



DETERMINANTS OF CERVICAL PRE-CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING MBAGATHI LEVEL FOUR HOSPITAL IN NAIROBI, KENYA

by Kennedy Kinyua

Dr. Christopher Gontier
Sign:

Date: 05/08/2024

Dr Eliab Some
Sign:

Date: 06/08/2024

Submission date: 24-Jun-2024 09:32AM (UTC+0300)
Submission ID: 2407722296
File name: Research_project_23rd_June_2024_without_references.docx (400.77K)
Word count: 32839
Character count: 196414

DETERMINANTS OF CERVICAL PRE-CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING MBAGATHI LEVEL FOUR HOSPITAL IN NAIROBI, KENYA

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Appendix IV: MKU Ethical Approval

Mount Kenya University

REF: **MKU/ISERC/3464**
TO: **KENNEDY KINYUA**

Date: 15 February 2024

REG: **MCM/2020/69049**

Dear Sir/Madam,

RE: DETERMINANTS OF CERVICAL PRE-CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING MBAGATHI LEVEL FOUR HOSPITAL IN NAIROBI, KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2508.** The approval period is **15/02/2024 - 14/02/2025.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box [illegible] - 0100, Thika

Yours sincerely,

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

Appendix V: Introduction Letter

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MCM/2020/69049

16th February, 2024

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki, Upper Kabete
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: KENNEDY KINYUA– REGISTRATION NO. MCM/2020/69049

The purpose of this letter is to introduce the above named student who is pursuing **Master in Clinical Medicine** in the department of **Clinical Sciences** in the school of **Clinical Medicine.**

The title of the research is **"Determinants of Cervical Pre-Cancer Screening Uptake Among Women Attending Mbagathi Level Four Hospital in Nairobi, Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **February, 2024 and April, 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P. O. Box 342 - 01000, THIKA
Office of the Director
Graduate Studies

Dr. Samuel M. Kariuki, Ph.D
Director, Graduate Studies
Enc.

Appendix VI: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 114924

Date of Issue: 26/February/2024

RESEARCH LICENSE

This is to Certify that Mr.. Kennedy kinyua njeru of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Determinants of cervical pre-cancer screening uptake among women attending Mbagathi Level Four Hospital in Nairobi, Kenya for the period ending : 26/February/2025.

License No: NACOSTI/P/24/33461

114924

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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See overleaf for conditions

Appendix VII: Mbagathi Level Four Hospital Permit

S

NAIROBI CITY COUNTY

Tel: 2724712, 2725791, 0721 311 808
Email: mbagathihosp@gmail.com

Mbagathi Hospital
P.O. Box 20725- 00202
Nairobi

HEALTH, WELLNESS AND NUTRITION SERVICES

REF: MDH/RS/VOL.3/03/290

22nd March, 2024

Dr. Kennedy Kinyanjui Njeru
NAIROBI

Dear, Dr. Njeru,

RE: RESEARCH AUTHORIZATION.

This is in reference to your application for authority to carry out research, on ***'Determinants of cervical pre-cancer undertake screening uptake among women attending Mbagathi Level 5 Hospital.'*** I am pleased to inform you that your request to undertake research in the hospital has been granted.

On completion of the research, you are expected to submit one hard copy and one soft copy of the research report/ thesis to this office.

MBAGATHI HOSPITAL NAIROBI CITY 07 APR 2024 TEL:0721 311 808 Box 20725 - 00202, NAIROBI

Dr. Alexander Irungu, PhD
Chief Executive Officer
Mbagathi County Hospital

Appendix VII: Map of Mbagathi Level Four Hospital