THESIS ABSTRACT

Master of Public Health

Adventist University of Africa

School of Postgraduate Studies

Title: FACTORS ASSOCIATED WITH UTILIZATION OF CERVICAL CANCER SCREENING SERVICES AMONG SEXUALLY ACTIVE WOMEN IN GUTU DISTRICT, ZIMBABWE

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Date Completed: October 2022

Cervical cancer is a prevalent type of cancer that ranks fourth among women and eighth overall. It disproportionately affects individuals residing in developing countries, where inadequate screening programs and poor uptake of traditional diagnostic methods such as pap smears or pelvic examinations are common. Early detection and timely treatment significantly improve the chances of a complete cure. In Zimbabwe, despite the availability of free cervical cancer screening services to all eligible women, rural women from the Gutu district exhibit low utilization rates. This research aims to investigate the underlying factors contributing to the inadequate uptake of cervical cancer screening services by rural women in the Gutu District.

A cross-sectional study design with an exploratory approach was employed to investigate the subject matter at hand. Quantitative data was collected in May 2021 through a self-administered questionnaire. The sample size of 450 participants was acquired using a multistage stratified random sampling method. Findings from this investigation have revealed that rural women residing in the Gutu district lack fundamental knowledge regarding cervical cancer, where only half of the participants demonstrated awareness of its signs and symptoms. Furthermore, risk perception among the study's respondents remained limited, with only 36.7% acknowledging high susceptibility to developing cervical cancer.

The outcomes of this research also indicate that multiple factors, including age, outreach availability, proximity to the VIAC centre, perceived severity of cervical cancer, and spousal support, independently influence the uptake of cervical cancer screening among rural women in the Gutu district. The study concludes that accessibility to cervical cancer screening services remains inadequate within the area of interest. To address this issue, measures such as enhancing risk communication, expanding screening sites, and increasing outreach activities are necessary to bring the service closer to individuals who require it. Additionally, there should be a concerted effort to prioritize rural women in cervical cancer screening programs, dispel any myths or misconceptions, and eliminate gender and cultural barriers.

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# FACTORS INFLUENCING LOW UTILISATION OF CERVICAL CANCER SCREENING SERVICES IN THE GUTU DISTRICT, ZIMBABWE

A thesis

presented in partial fulfillment

of the requirements for the degree

Master of Public Health

by

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Date: April 2023

Dedicated to my family for their support

throughout my studies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

## ABBREVIATIONS

| | |
|---|---|
| DHE | District Health Executive |
| VIAC | Visual Inspection with Acetic acid and Cervicography |
| MOHCC | Ministry of health and Child Care |
| CCS | Cervical Cancer Screening |
| WHO | World Health Organization |
| HPV | Human Papilloma Virus |
| NIC | National Cancer Institute |

ACKNOWLEDGEMENTS

Firstly, I would like to give gratitude to the Almighty God for giving me life, strength, good health, and wisdom. It was not easy during the Covid era, but God the Almighty helped me to pass through the phase. I am thankful to my family especially my husband, Tavonga Moyo. He has been my pillar of strength throughout my studies. Thirdly, to my primary advisor Fletcher Njororai, PhD, MCHES for her patience, coaching throughout the writing; and my secondary advisor- Daniel Ganu DrPH, for his insightful suggestions and guidance and my program coordinator Dr Janet Odhiambo who has been there to assist always.

I would like also to thank my statistician Tafadzwa Chivasa Msc Biostatistics who has been with me through to the end of my thesis assisting. Not forgetting my lecturers and the AUA who made it possible for me. Many thanks to the participants who accepted to participate in my research, and all those who participated directly or indirectly.

GOD BLESS YOU ALL

# CHAPTER 1

# INTRODUCTION

## Background of the Study

Bray et al. (2018) reported that cervical cancer is the eighth most common cancer worldwide and the fourth most common cancer in women, according to GLOBOCAN data. As per the World Health Organization's report in 2018, approximately 570,000 fresh cases of cervical cancer and 311,000 fatalities due to the disease were recorded worldwide. The standard incidence of cervical cancer worldwide was projected to be 13.1 cases per 100,000 females, with the incidence rate varying significantly between countries, ranging from less than 2 to 75 cases per 100,000 women.

According to the World Health Organization (WHO) report of 2018, an estimated 267.9 million females aged 15 and above in Africa are at risk of developing cervical cancer, with yearly incidences of approximately 80,000 cases and 60,000 deaths attributed to the ailment. The East African region reports the highest age-standardized incidence rate of 42.7 cases per 100,000 and mortality rate of 27.6 per 100,000 deaths associated with cervical cancer, as stated by Ferlay et al. (2015). The WHO (2014) also reported that low-income countries have high rates of cervical cancer due to inadequate screening programs and low utilization of screening tests.

In developed countries, mortality rates for cervical cancer are high, with over 250,000 cases and 450,000 occurrences reported by Ferlay et al. (2015). Developing countries are predicted to account for 98% of cervical cancer deaths by 2030, mainly

due to low utilization of screening tests (Ferlay et al., 2015). Breast cancer remains the second most common cancer among women aged 15-69 in Kenya (Mwangi, 2017).

Zimbabwe has one of the highest incidence rates of cervical cancer among Southern African countries, with 35 cases per 100,000 women (Bruni et al., 2021). Despite the introduction of free cervical cancer screening services in rural communities, most cases are diagnosed too late, leading to high mortality rates (A Legislative Study, 2019).

Gynecologic cancer is the easiest cancer to prevent with frequent screening and follow-up, and cervical cancer is one of the leading causes of mortality in underdeveloped nations (Matthies, 2019; WHO, 2018). The Human Papilloma Virus (HPV) is the main cause of cervical cancer, with more than 80% of malignancies discovered in advanced stages in sub-Saharan Africa (Herdman, 2000; WHO, 2019). Screening and treatment are crucial in reducing the prevalence of cervical cancer.

However, rural communities have low rates of detection and treatment, with only about 12% of eligible women using cervical cancer screening programs in the Gutu area of Zimbabwe (Ministry of Health and Child Care, 2018; Ncube et al., 2015). Strategies to combat cervical cancer must address social determinants of health in the environments where women live and work (Mupepi et al., 2011). The Visual Inspection Acetic Acid (VIA) program was established in Zimbabwe as a screening technique, but due to financial limitations and staff shortages, the initiative could not continue (Ministry of Health and Child Care, 2018). Medicine sans Frontier (MSF) and the Ministry of Health and Child Care created six screening facilities for women over 15 in the Gutu district, but utilization of the screening programs remains low despite being provided free of charge (Ministry of Health and Child Care, 2018).

The study conducted by the Ministry of Health and Child Care (2018) on low uptake raises serious concerns for rural populations that struggle to pay the high costs of advanced cancer conditions. Rural areas like Gutu district already have a high prevalence of infectious diseases like TB, HIV/AIDS, and malaria. It is essential to carry out research that yields recommendations for how to lessen the burden of cervical cancer in the rural population of Gutu. This study will also be useful in encouraging research in other remote areas where public health planners lack easy access to information about the factors that influence the use of cervical cancer screening programs.

Understanding the socioeconomic determinants of health that influence the poor uptake of screening activities is necessary for more informed health promotion actions. As per the Zimbabwe National Statistical Agency (2012), Gutu District is the third largest among the seven districts in Masvingo province, located in the southern region of Zimbabwe. The district has a populace of 203,533 individuals, resulting in a population density of approximately 22.08/km2. There are 62,444 women over the age of 15 who are estimated to be in the population, and 8,755 of them are HIV positive (Ministry of Health and Child Care, 2018).

## Statement of the Problem

Presently, Zimbabwe does not possess a national policy for cervical cancer screening. In the absence of such guidelines, women may undergo screening upon request or as recommended by other medical institutions. The Gutu district has access to and offers cervical cancer screening services, however only 12% of women in that district use them, according to a study conducted by Médecins Sans Frontières (MSF) in 2021. The World Health Organization (WHO) recommends that 70% of women undergo annual screenings for cervical cancer (WHO, 2021). It is evident from a

comparison of the WHO target and the reported uptake in Gutu area that the uptake there is incredibly low. Although there has been a recent extension of cervical cancer screening programs in Zimbabwe by both governmental and private organizations, an extensive review indicates that there is a paucity of research examining the utilization of these services among rural populations. Most studies have not adequately taken into consideration the factors that influence how often women in Gutu district and throughout Zimbabwe use the cervical cancer screening services that are offered. By concentrating more on rural women in the Gutu district who typically have limited access to health care, therefore, the objective of this project is to help in facilitating the delivery of top-notch cervical cancer screening services.

## Research Questions

The purpose of this study was to investigate the factors that contribute to rural women's low use of cervical cancer screening services in Zimbabwe's Gutu district.

The following research questions guided the study:

1. What is the uptake of cervical cancer screening services in Gutu district?
2. Do rural women know about cervical cancer screening services?
3. What are the attitudes and beliefs held by rural women in the Gutu district regarding cervical cancer screening?
4. Does a statistically significant correlation exist between the chosen socio-demographic variables and the utilization of cervical cancer screening services among rural women in the Gutu district, Zimbabwe?
5. Which factors Influence the uptake of Cervical Cancer Screening Services Among Rural Women in the Gutu district?

## Null Hypotheses

The following null hypotheses were developed and put to the test considering the research questions listed:

The following factors do not have a statistically significant association with the uptake of cervical cancer screening:

1. Age
2. Parity
3. Marital Status
4. Religion
5. Distance
6. Occupation
7. Health seeking practices
8. Attitudes
9. Beliefs about illness
10. Level of Education

## Conceptual Framework

The conceptual underpinnings of the study are shown in Figure 1 below. It will be used to examine the variables influencing the use of services for cervical cancer screening. As independent variables, knowledge and perceptions make up part of the conceptual framework. The use of screening services may be positively or negatively influenced by perceptions and information about them.

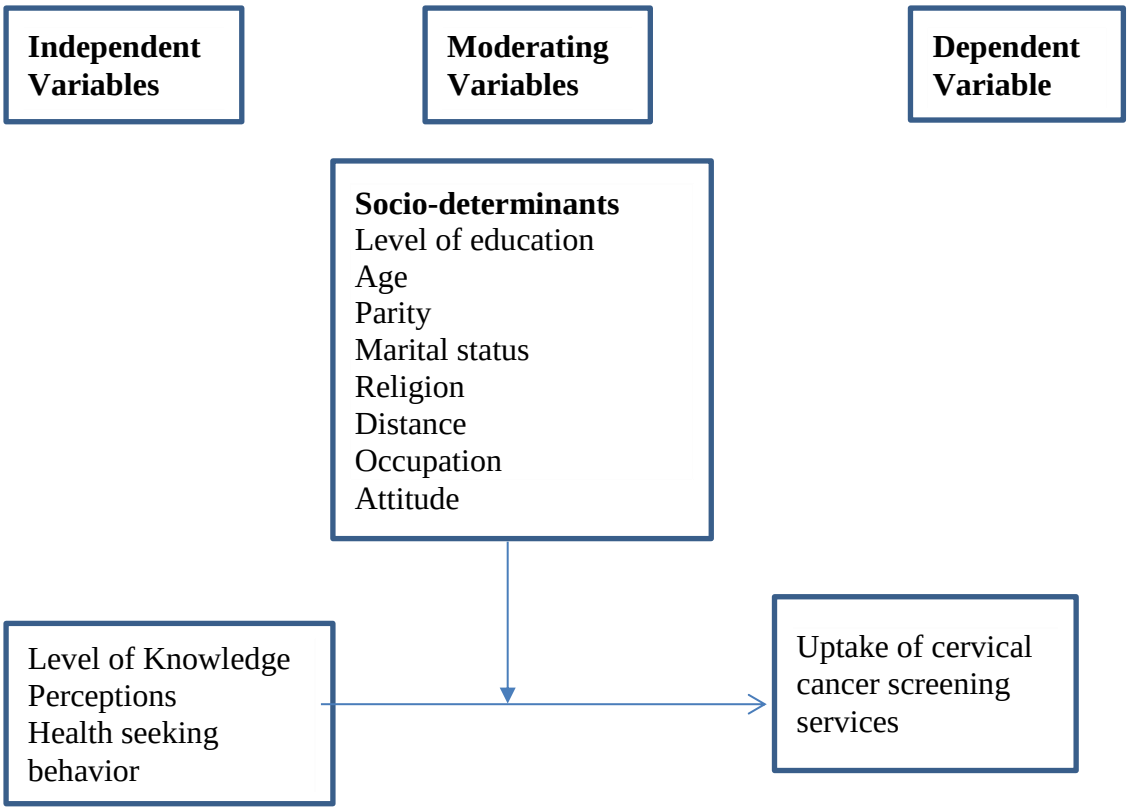


*Figure 1*. Conceptual Framework

More specifically, moderating socio-demographic characteristics such as religion, level of education, occupation, marital status, and age influence screening decisions; they also influence perceptions of cervical screening advantages, obstacles, susceptibility, and severity.

## Significance of the Study

The information would be helpful in enhancing the delivery of services for cervical cancer screening in Zimbabwe's Gutu district. The findings of this study will contribute to early detection, prompt treatment, and improved health in rural populations. Good cervical cancer screening programs can reduce morbidity and mortality, and to do this, it is essential to adequately document the variables that

affect how many people use these services. Information on current cervical cancer screening programs in the Gutu district is difficult for planners to get.

According to observations from the communities that directly benefit from the initiative, little documentation has been done on the performance of the project that MSF is now implementing. Planners, partners, and stakeholders in public health who want to increase the existing acceptance of cervical cancer screening programs will gain from this study. If health promotion planning is to achieve its goals, it must be supported by evidence. As a result, it is crucial that essential elements related to the present observed uptake be identified and used as planning input. The study adds to the body of knowledge on this subject and in the field of public health.

## Scope of the Study

The goal of the study was to pinpoint and comprehend the reasons behind the low screening uptake for cervical cancer. The research was conducted in Gutu district, Zimbabwe, targeting catchment areas of institutions which were benefiting from free cervical cancer screening services. Although the study was only conducted in the catchment area of six health institutions in the Gutu district, the study's findings accurately reflected the level of cervical cancer screening uptake at the time.

## Operational Definition of Terms

1. Catchment area- a region that is encompassed by a healthcare facility's services or adjacent areas where many patients who receive treatment from the healthcare facility reside.
2. Cervical cancer awareness- is a state of awareness and concern about cervical cancer that results in knowledge of the disease's signs, symptoms, risk factors, prevention, and treatment.

3. Cervical Cancer- is a form of malignancy that develops in the cells of the cervix, which serves as the lower segment of the uterus and connects to the vaginal canal.
4. Cervical cancer screening- refers to a medical examination conducted to detect any irregularities or anomalies in the cervix. In the event of identifying abnormal tissues, prompt intervention is initiated to remove them before they develop into cervical cancer.
5. Level of knowledge – refers to the degree of knowledge about cervical cancer screening that has been acquired through experience or association.
6. Perceptions – refers to the way in which the participants regard cervical cancer and is measured based on responses by the participant.
7. Social determinants – refer to the circumstances under which individuals are born, develop, work, reside, and age in, which subsequently impact their overall well-being.
8. Uptake of cervical cancer screening services – process of consenting and engaging in cervical cancer screening by a suitable candidate.

## Limitations of the Study

The study's shortcomings were as follows:

1. Because cervical cancer screening status was self-reported, social desirability may have had an impact. But prejudice was reduced by going deeper and requesting the dates that the screening was conducted.
2. Several the apostolic sect's female members declined to take part. The sample size calculation for the study took this scenario into account and was slightly increased to account for no response.

# CHAPTER 2

# LITERATURE REVIEW

This chapter presents an exhaustive analysis of the pertinent literature related to the extent of utilization of cervical cancer screening services in Zimbabwe, with specific emphasis on the Gutu District and emerging countries such as Zimbabwe. The theory, methods, and useful outcomes of the research project are informed and guided by this review. The chapter commences with a theoretical discussion of other researchers' thoughts and theories on the usage of cervical cancer screening facilities, which is followed by a survey of relevant literature guided by the conceptual framework developed in the prior chapter.

The empirical literature underwent a thorough review of linked studies on the main factors that influence poor use of cervical cancer screening facilities. The methods used by earlier researchers were thoroughly examined. To find credible scientific studies, search terms such as "cervical cancer screening" were used to access Google Scholar, Science Direct, BMC Health Services Research, SAGE Journals, and the Health Open Public Journal.

The lower portion of the uterus that attaches to the vagina, or the cervix, is where the cells of the cervical cancer develop. Most cervical cancers are brought on by different strains of the sexually transmitted disease known as the human papillomavirus (HPV). When the body is exposed to HPV, the immune system usually stops the virus from doing any damage. But, in a small number of people, the virus endures for years and aids in the process by which some cervical cells develop

into cancer cells. By getting screened for cervical cancer and receiving an HPV vaccine, women can lower their risk of developing the disease (Butler, 2019).

Studies show that, there is a growing prevalence of cancer worldwide, with developing nations experiencing an alarming surge in cases. To tackle this issue by utilizing the limited resources available, policies and programs must incorporate screening, diagnosis, and palliative care measures (Makhafola T. J &, McGaw L. J, 2017). Cervical cancer is one such malignant condition that can be prevented through effective interventions. Cervical cancer is one of the most preventable diseases, according to (Hicks et al. 2006), if the virus that causes it is well understood, linked to observable ubiquitous antecedents, and has a slow rate of advancement.

## Cervical Cancer Screening

Cervical cancer is a major global public health concern, with an estimated 604,000 new cases and 342,000 deaths worldwide in 2020 (Ferlay et al., 2021). Most cervical cancer cases occur in low- and middle-income countries, where access to screening and treatment services is often limited (Bruni et al., 2019). Cervical cancer screening is an important tool for the early detection and prevention of cervical cancer and can help identify precancerous changes in the cervix that can be treated before they develop into cancer (Saslow et al. 2012).

There are two main types of tests used for cervical cancer screening: the Pap test and the HPV test (Saslow et al., 2012). The Pap test involves collecting cells from the cervix and examining them under a microscope for abnormalities, while the HPV test looks for the presence of the human papillomavirus (HPV), which is the most common cause of cervical cancer (Saslow et al., 2012). Both tests are effective in detecting cervical cancer and precancerous changes and can help identify women who may benefit from further testing or treatment.

The cause of cervical pre-cancer and cancer is prolonged infection with one or more of the highly oncogenic types of human papillomavirus (HPV). HPV causes cancer by interfering with the normal functioning of cervix cells which then leads to distinct changes in the epithelial cells of transformation zone of the cervix (Bruni L, 2019). Despite the effectiveness of cervical cancer screening, screening rates vary widely by country and region (Bruni et al., 2019). In many low- and middle-income countries, cervical cancer screening rates are low due to a lack of resources, limited access to healthcare, and limited awareness and knowledge of cervical cancer and its screening services (Bruni et al., 2019). In Zimbabwe, for example, cervical cancer is the most common cancer among women, with an estimated incidence rate of 35.9 per 100,000 women (Ferlay et al., 2021). However, cervical cancer screening rates in Zimbabwe remain low, with only 17% of women aged 25-49 years having ever been screened for cervical cancer (Ministry of Health and Child Care, 2018).

Studies have revealed that cervical cancer is one of the very few types of cancers where a pre-cancer stage lasts several years before becoming invasive cancer that provide ample opportunity for detection and treatment (Gaffney & Werner, 2018). Cervical cancer is a malignancy for which screening is available (Bruni, 2019). The screening is done to identify pre-cancerous changes on the cells of the cervix which may become cervical cancer if they are not timeously treated.

In developed nations, cervical cancer screening and prevention has been given considerable priority which has helped reduce morbidity and mortality from the disease (Bray, 2018). The impact of screening program on cervical cancer related deaths has been given a considerable attention in developed countries with much minimal effort in most low- and middle-income nations (Gaffney & Werner, 2018). Cervical cancer screening coverage is very limited in low- and middle-income

countries, as shown by a study which reported coverage of cervical cancer screening in developing countries on average to be 19% compared to 63% in developed countries (Anaman-Torgbor & Angmorterh, 2020).

Data from the World Health Survey conducted in 2017 indicated that the coverage of cervical cancer screening was 10% in Sub-Saharan Africa (Organization, 2022). This coverage is very worrying considering the effort being put by various stakeholders to increase screening and reduce preventable deaths from cervical cancer.

In conclusion, cervical cancer screening is an important tool for the early detection and prevention of cervical cancer, but screening rates remain low in many low- and middle-income countries, including Zimbabwe. Addressing factors such as education, access to healthcare, and knowledge and awareness of cervical cancer and its screening services can help improve screening uptake and reduce the burden of cervical cancer in these populations.

## General Uptake of Cervical Cancer Screening Services

General uptake of cervical cancer screening services is a critical component of efforts to reduce the burden of cervical cancer in low- and middle-income countries (LMICs). Despite the availability of screening services, uptake remains low in many settings, particularly among underserved and rural populations (Ndejjo et al., 2016).

A study conducted in Ethiopia found that only 14.3% of women had ever been screened for cervical cancer, with the majority citing lack of awareness and access to screening services as the primary reasons for not being screened (Teshome et al., 2018). Similarly, a study in Ghana found that only 10.6% of women had ever been

screened for cervical cancer, with lack of awareness and fear of the screening process cited as the main barriers to uptake (Asare et al., 2020).

In Zimbabwe, cervical cancer is the leading cause of cancer-related deaths among women, with an estimated 2,270 new cases and 1,451 deaths each year (Ferlay et al., 2018). Despite the availability of cervical cancer screening services in the country, uptake remains low, particularly among rural and underserved populations (Mashamba et al., 2020). A study conducted in Zimbabwe found that only 28.6% of women had ever been screened for cervical cancer, with lack of awareness and fear of the screening process cited as the primary reasons for not being screened (Mashamba et al., 2020).

In contrast, a study in Rwanda found that cervical cancer screening uptake was high, with 80.7% of women having ever been screened for cervical cancer (Umubyeyi et al., 2018). The authors attributed the high uptake to the availability of free screening services, community mobilization efforts, and the use of mobile screening clinics to reach underserved populations (Umubyeyi et al., 2018).

Cancers are becoming more prevalent globally, particularly in emerging nations. To manage this surge with limited resources, policies and programs should incorporate measures such as screening, diagnosis, and palliative care (Makhafola & Mcgaw, 2017). One type of cancer that can be prevented is cervical cancer. Hicks et al. (2006) suggest that identifying the viral causes, recognizing the antecedents, and understanding that the disease develops slowly can make cervical cancer one of the most preventable cancers.

Farzaneh et al. (2017) found that self-efficacy, beliefs, and obstacles were the primary predictors of cancer screening behavior among females in Iran when they studied a large sample size in cross-sectional research. Another cross-sectional study

conducted by Ncube et al. (2015) examined the factors influencing the uptake of cervical cancer screening in Portland, Jamaica. Their study discovered that Jamaican women had insufficient screening for cervical cancer and recommended a multimodal approach to overcome screening challenges.

Research conducted in Tanzania on the usage of cancer screening services among female primary school teachers revealed that cervical cancer screening services are not commonly utilized by this group. Kileo et al. (2015) identified parity and marital status as factors that influenced the adoption of cervical cancer screening services among the research participants. According to their findings, Kileo et al. (2015) discovered that parity and marital status were characteristics that impacted the research population's use of cervical cancer screening services.

Several studies have pinpointed causes of the unacceptably high incidence and mortality rates of cervical cancer, particularly in developing nations. Women are not adequately informed about cervical cancer, and the delivery of programs for cervical cancer screening is not well-organized, claim Wright et al. (2010). In terms of the distinctive barriers that prompt rural women to seek out free cervical cancer screening programs, this research provides only a small amount of information that is focused exclusively on them.

A few studies have also been done in Zimbabwe to determine the causes of the low adoption of services for cervical cancer screening, especially after the program was introduced over the entire nation. Mupepi et al. (2011) looked at the demographic, knowledge, and attitude factors that affect the cervical screening practices of Zimbabwean women. The study recommended implementing well-thought-out screening programs and involving community leadership to improve accessibility to screening services. According to Mupepi et al. (2011), earlier studies

have recommended expanding health education programs for teenagers and incorporating the HPV vaccine into teenage immunization programs.

According to Sievers and White (2016), there has not been a comprehensive review conducted in developing nations to date to boost women's use of screening programs, and no explanation has been identified that either discourages or motivates them to do so. Other outcomes vary by nation, and some studies show comparable characteristics that influence women's preferences in and access to screening services and treatment.

According to the study by Mukama et al. (2017), despite having a favorable attitude toward screening, patients who refuse treatment may exhibit poor health-seeking behavior and poor cancer screening uptake. According to the Zimbabwe National Statistical Agency (2016), only 24% of women in Harare have undergone cervical cancer screening. Various researchers have noted that cervical cancer screening has low uptake, and that further research is necessary to identify other factors linked to poor uptake. Finding effective solutions to increase uptake among women is vital.

Various factors, including older age (Leyva et al., 2006), higher income (Winkler et al., 2008), higher education (Busingye et al., 2012), and greater parity, have been linked to the uptake of screening in some studies. Ncube et al. (2015) discovered that the uptake of cervical cancer screening services is influenced by marital status, having insurance, and having received other services. According to a study by Nwabichie, Manaf, and Ismail (2018), African women were highly underrepresented in the uptake of cervical cancer screening.

Several studies have identified various characteristics associated with the uptake of cancer screening, including older age (Leyva et al., 2006), higher income

levels (Winkler et al., 2008), higher education levels (Winkler et al., 2008), and greater parity. Ncube et al. (2015) found that marital status, insurance coverage, and previous receipt of other healthcare services were linked to an individual's utilization of cervical cancer screening. In a study conducted by Nwabichie et al. (2018), researchers discovered that African women in their study had low rates of cervical cancer screening uptake.

According to the Mantula and Mwisongo (2018) study conducted in Zimbabw e, there is a need to adopt active outreach techniques to the community's women as w ell as those who visit medical facilities in order to increase adoption of cervical cancer screening services.

Cervical cancer screening uptake among Jordanian women was found to be no ticeably low in a study done by AlAmro et al. (2020); determining factors that may inf luence a person's decision to undergo screening include encouragement from healthca re providers, the length of marriage, and use of the private healthcare sector. A structured screening program should be developed and implemented in cooperation with national partners and institutions to reduce the incidence of cervical cancer in Jordan, according to one of the recommendations made by the researcher to increase adoption.

One-third of women between the ages of 30 and 49 have never had a cervical cancer screening. In low- and middle-income nations, where illness burden is greatest, screening is not widely implemented. While expanding the efforts of monitoring systems in both coverage and quality control are important difficulties to meeting the WHO elimination target, increasing screening coverage and treating lesions that are discovered should be the top priorities of the WHO elimination campaign.

In conclusion, the uptake of cervical cancer screening services remains low in many LMICs, particularly among underserved and rural populations. Lack of awareness, fear of the screening process, and limited access to screening services are key barriers to uptake. Community mobilization efforts, the use of mobile screening clinics, and the provision of free screening services may help improve uptake and reduce the burden of cervical cancer in these populations.

The number of women who use cancer screening services may be impacted by a variety of factors. Much research has been carried out to identify the variables that could be contributing to low uptake. Even if there are factors that have been identified through research, they may not accurately reflect the situation in Gutu district.

## Related Studies

In a large sample size cross-sectional study, (Farzaneh et al. 2017) revealed that among the females they studied in Iran, self-efficacy, beliefs, and barriers were significant predictive factors of cancer screening behavior. Ncube et al. (2015) examined variables that affect the uptake of cervical cancer screening in Portland, Jamaica in another cross-sectional study. The study revealed subpar screening rates for cervical cancer among Jamaican women and recommended multifaceted strategies to overcome screening-related obstacles.

The study by (Mutyaba et al. 2007) aimed to identify factors affecting the uptake of reproductive health services, including cervical cancer screening, in the Nsangi community of Uganda. The authors found that limited knowledge about cervical cancer and its risk factors, cultural beliefs, and accessibility issues are key barriers to screening. Cervical cancer is the most common female cancer in Uganda, with most women diagnosed having advanced disease, highlighting the need for effective screening programs. The study recommends developing culturally sensitive

health education programs to improve knowledge and awareness of cervical cancer and increasing the accessibility and availability of screening services.

Mwaka et al. (2019) conducted a qualitative study in Uganda to identify barriers to effective uptake and provision of prevention of cervical cancer. The study found that a lack of awareness about cervical cancer and screening services, misconceptions about the causes of cervical cancer, fear and anxiety related to the screening process, and the high cost of screening were the major barriers to cervical cancer screening uptake. The study also identified inadequate screening facilities, lack of trained personnel, and inadequate funding for cervical cancer screening programs as barriers to the provision of effective screening services.

Ramogola-Masire & de Klerk (2014) conducted a study in rural southwestern Botswana to investigate the knowledge, attitudes, and practices of women regarding cervical cancer and screening. The study found that most women had heard of cervical cancer and believed it was a serious disease. However, only a small proportion of women had ever been screened for cervical cancer. The study also found that the main barriers to screening were a lack of knowledge about screening, fear of pain or discomfort during the screening process, and the belief that screening was not necessary if there were no symptoms. The study concluded that efforts to increase cervical cancer screening rates should focus on improving knowledge and awareness about cervical cancer and screening, addressing misconceptions and fears, and making screening services more accessible and affordable.

Abreha et al. (2020) discussed several studies conducted to evaluate the knowledge, attitude, and practice (KAP) towards cervical cancer screening among women in Ethiopia. The community-based cross-sectional study conducted in Adigrat Town, Northern Ethiopia, in 2019 revealed that although the participants had

moderate knowledge (46.4%) about cervical cancer, the positive attitude (53.3%) towards screening was higher than the actual cervical cancer screening rate (38.1%). Moreover, women who had obtained a diploma or above showed better knowledge of cervical cancer screening utilization. The study suggests that effective information, education, and communication strategies are required to improve the level of awareness of women on cervical cancer screening.

Cervical cancer screening programs are not used to their full potential among female primary school teachers in Tanzania, according to a study that investigated the topic. Parity and married status were found to be variables that influenced how frequently the research population used cervical cancer screening services, according to Kileo et al. (2015).

Several research have been able to pinpoint causes of the disease's excessively high prevalence and mortality, particularly in poor countries. Lack of knowledge about cervical cancer among women, as well as a paucity of organizations offering services for cervical cancer screening, according to Wright, Kuyinu, and Faduyile (2010). The difficulties that rural women confront on an individual basis, which lead them to seek out free cervical cancer screening services, are not well covered by this research.

Cervical cancer is a leading cancer among women in India, but most Indian women remain unscreened for the disease due to lack of awareness and organized screening facilities. Ghosh et al. (2020) conducted a study among tribal women in coastal Karnataka, southern India to assess their knowledge, attitude, and practices towards cervical cancer screening. The results showed that while most participants had heard of cervical cancer, their knowledge about prevention and early detection was poor. However, the majority had a favourable attitude towards screening. The

study highlights the need for sustained health education and screening programs to improve awareness and uptake of cervical cancer screening among these women.

Several studies have been conducted in Zimbabwe to identify factors that contribute to the low utilization of cervical cancer screening services, especially after the program had been introduced nationwide. Mupepi et al. (2011) were able to investigate the impact of knowledge, attitudes, and demographic characteristics on Zimbabwean women's use of cervical cancer screening.

The study recommended involving community leaders and implementing well-thought-out screening programs to increase the accessibility of screening services. According to Mupepi et al. (2011), other research has recommended increasing the frequency of health education sessions and include the HPV vaccine in teen vaccination programs. Descriptive cross-sectional studies were the most widely used study type in investigations of risk factors for cervical cancer and assessment of uptake (Hicks et al., 2006). The sampling methods used to determine study participants ranged from random sampling to selective sampling (Mupepi et al., 2011).

**Predictors of Cervical Cancer Screening Uptake**

Cervical cancer screening uptake is hampered by competing incentives among groups with similar interests in the service, poor working conditions, and a lack of governmental backing for cervical cancer prevention in low-income countries, according to studies conducted there (Ayenew et al, 2020). Clinical studies that looked at cervical cancer screening uptake predictors found that inviting women who needed to be screened—through appointments, letters, phone calls, verbal recommendations, prompts, and follow-up letters—increased screening uptake (Abiodun et al, 2014).

Telephone reminders or messages increased the uptake of Pap tests, according to a systematic evaluation in Low and Middle-Income Countries (LMIC) (Businge, 2012). According to studies, it may be crucial to enhance the uptake of cervical cancer screening programs by scaling up screening to all primary and secondary health institutions and employing skilled health professionals (Ayenew et al, 2020). The reported decreased use of screening facilities in underdeveloped countries may also act as a wake-up call for political leadership to boost their involvement in cervical cancer prevention efforts.

According to a study by (Kadian et al. 2020), low cervical cancer screening uptake was linked to both a lack of formal education and a lack of knowledge about the gravity of the disease. The results of this study are in line with a study conducted in Ghana, which found that women with higher risk perceptions were more likely to have cervical cancer screening. Women who perceive their risk as higher and are more aware of how deadly cervical cancer is are more inclined to seek treatment early (Businge, 2012).

If the acceptance of cervical cancer screening services is to be improved in rural communities, community mobilization, including the deployment of village health workers, may be crucial. In the past several years, the number of people who have been diagnosed with cancer has increased dramatically (Kadian et al, 2020). According to the most recent literature analysis, older women were more likely to get their cervical cancer checked out (Ayenew et al, 2020). This might be because older women are more likely to seek medical attention for aging- or hormone-related issues.

Several studies have shown that women are more likely to undergo a cervical cancer screening when the clinician is a woman (Domnic, 2019). Like this, a Canadian study found a link between culturally competent medical services and

cervical cancer screening (Aisha et al, 2017). Together, these results can point to the requirement for outreach programs and care for cervical cancer that is culturally appropriate. Also, the current analysis revealed that women frequently underuse the screening service because of a concern of receiving negative findings (Bennet .2018). Data from the literature indicates that screening may have negative effects, such as anxiety caused by positive results (Busingye, 2012).

Positive attitude, perceived susceptibility, and perceived obstacles were successfully identified by the current literature analysis as the main obstacles to screening adoption (Abudukadeer et al., 2015: Bennett 2018). It is vital to remember that women's views may contribute to a decreased adoption of screening services to ensure that programs target attitudes and beliefs around cervical cancer.

According to a study by Abudukadeer et al. (2015), women who are aware of cervical cancer are more likely to use screening for the disease than women who are not. This result demonstrates the need of educating eligible women about cervical cancer. Cervical cancer screening education is the top requirement in nations with low resources, according to studies (Bennet, 2018). Also, the current conclusion is consistent with research from LMICs and studies from Malaysia (WHO, 2022). Women's attitudes toward using screening programs may change if they are aware of them. It was important to stress the importance of community health professionals in educating and creating awareness in the community (WHO, 2021).

### Knowledge of Rural Women on Cervical Cancer and Its Screening Services

In most of the examined studies, one of the important outcome metrics was knowledge and/or awareness of cervical cancer screening. The aim of the cervical cancer screening campaign was mostly on providing broad knowledge about the

disease and asking women if they were aware of it (Tapera et al, 2019). Among eligible women, knowledge of cervical cancer screening centered on evaluation of specific information about its advantages.

Understanding the significance and advantages of cervical cancer screening was a key component of screening knowledge. Overall, there was high awareness and knowledge of CCS use across all studies (Jisa, 2021). Some studies evaluated different aspects of screening knowledge in addition to the use screening knowledge. Investigation focused on understanding of screening interval, target population, screening findings, and screening procedures (Kadian, 2020). Pap smears were the most used screening method, according to studies that evaluated awareness of screening techniques (Busingye, 2012).

In the research that was conducted, 81.9% of women were found to have little understanding of cervical cancer and its screening (85.5%), according to Kumar and Tanya (2014). An investigation of women who visited the hospital revealed that 84% had inadequate understanding of cervical cancer and associated screening. Kadian et al. (2020) investigated the knowledge and awareness of cervical cancer and discovered that almost 75% of women lacked basic understanding about the disease and its screening.

According to Kuguyo et al. (2017), there must be more education and awareness campaigns focused on high-risk populations because throughout the study, knowledge, and comprehension of cervical cancer in Zimbabwe were low. According to a study by Tapera et al. (2019), frequent radio listeners were aware of cervical cancer. This relates to the problem of the low level of knowledge among women; those who cannot afford radios are unable to get information on cancer screening and associated services.

If detected in its early stages, cervical cancer is both preventive and, in most circumstances, treatable. Early diagnosis and therapy depend on having knowledge of early symptoms and indicators. Despite being preventable and treatable, most women in impoverished nations, like Ethiopia, come at an advanced stage that necessitates intensive treatment modalities including surgery, radiation, and chemotherapy and has a significantly decreased probability of success (Roy et al., 2011).

The Okunowo et al. (2018) study found that two factors contributed to people not participating in the screening intervention: a lack of knowledge and a lack of recommendations from medical professionals. Knowledge and uptake of the pap smear test rose because of prior counseling by health professionals and knowledge of someone who had cervical cancer. The degree of education did, however, have an impact on knowledge about cervical cancer but not on the use of pap smears.

Okunowo et al. (2018) claim that women were not using screening services because of a lack of awareness and a lack of motivation from health professionals. To boost knowledge and acceptance of screening services, health professionals are intended to educate and empower women. Okunowo and colleagues (2018) found that one's level of education may impact their understanding of cervical cancer, but it does not seem to influence whether they undergo screening for the disease.

According to certain research investigations, imparting knowledge about health issues and reducing the risk of cervical cancer can be accomplished through various educational techniques. The educational initiatives can also be employed as productive approaches to improve cervical cancer awareness and perceived vulnerability, as well as cancer preventative practices. Abudukadeer and the Federal Democratic Republic of Ethiopia (2015) suggest that women can increase their knowledge about cervical cancer, such as recognizing its early warning signs and the

availability of appropriate treatments, by obtaining education. To encourage the use of the available cervical cancer screening, disease sensitization is essential.

A study by (Eze et al. 2012) found that having knowledge of the condition or awareness of it is essential for gaining successful access to and use of cervical cancer screening facilities. Without a doubt, women's attitudes regarding screening are influenced by their awareness of cervical cancer. According to the study, it has a significant role in both the disease's prevention and therapy. Respondents from Southeast Nigeria were less than 40 percent of women that were aware of cervical cancer. Out of this, 30% were aware that the disease might be prevented, while 25% of the same group were aware that cervical cancer could be screened for.

The study concluded that one important factor influencing the availability and use of cervical cancer screening services was the lack of knowledge about cervical cancer and its screening. In a related study, (Ichaminya, 2015) found that many Japanese women were unaware about Pap smears and other early screening procedures for cervical cancer. Ladies were not aware that getting tested early could save their lives. Japanese University students were the subjects of a focus group discussion led by (Oshima & Maezawa, 2013) to better understand their perspectives toward cervical cancer screening. Four themes emerged from all recorded and transcripted discussions. Firstly, respondents' perceptions of the reality of cervical cancer were incredibly dim. Also, the respondents lacked knowledge of services like pap smears. Thirdly, the respondents did not feel inspired to use screening services. Nonetheless, respondents who stated that they had used screening services stated that they had learned about the services from friends, family, and the media.

Even though the focus group garnered insights from the participants, it was unable to demonstrate a connection between knowledge and screening services. In a

recent study by Siddiqui et al. (2016), 12 respondents, including men and women, were asked structured questions on six randomly chosen towns. The findings from multivariate logistic regression showed that knowledge and awareness indicators have strong relationship with the level of accessibility and access to household practices among people living in Karachi, Pakistan.

In the Kenyan setting, the issue of awareness plays a crucial role in terms of the availability and utilization of services for cervical cancer screening. According to (Kibicho 2014), Kenya has had poor awareness and use of screening services over the years. This has caused the screening services that are offered to be underutilized.

Research showed that information given to women regarding cervical cancer and screening is insufficient. Although the women would be curious to learn more about this health condition, the medical professionals are not utilizing this chance to give the ladies the necessary information regarding cervical cancer. Murugi (2014) agrees with his study's findings that women's understanding of Pap tests and cervical cancer affects their use of cancer screening programs. While most Kenyan women are aware of cancer, only about half were aware of cervical cancer, and only about a quarter had heard of Pap smear tests, which prevented them from taking advantage of them to protect their health.

The rate at which women have accessed and used the available services has been severely impacted by the lack of awareness initiatives about cervical cancer and the services provided for cervical cancer screening. According to Mupepi et al. (2011), there are insufficient awareness-raising and prevention campaigns aimed at boosting the uptake of screening services. Due to the paucity of these surveillance initiatives, it has become harder to tell the precise incidence of cervical cancer in

Kenya. This makes it considerably more challenging to estimate the disease's prevalence.

Historically, a larger incidence of cervical cancer in Kenya has been attributed to the lack of the national screening guidelines and enough funding for the awareness and prevention initiatives for cervical cancer.

Rasul et al. (2015) note that inaccurate knowledge of Kurdish women was characterized by the women's disinformation coming from unreliable sources such their friends, families, or other women. For instance, rural women whose husbands had passed away from cancer thought they had caught cervical cancer from their departed husband because that is what their family and other women had led them to believe. Several women were unaware of what a Pap smear test comprised, when it was necessary, why it should be obtained, and how frequently it needed to be performed.

In conclusion, the data indicate that different strategies were utilized to examine whether knowledge and awareness influence how women access screening services. Studies have specifically used focused group conversations to elicit respondents' opinions. They did not, however, adequately capture the many scales needed to comprehend and relate to screening services. The quantitative aspect of the acceptance of cervical cancer screening services was the main goal of this study.

**Perceptions and Attitudes on Cervical Cancer**

Mabotja et al. (2021) conducted a study on beliefs and perceptions regarding cervical cancer and screening associated with Pap smear uptake in Johannesburg. The study aimed to determine the associations between women's beliefs about cervical cancer and screening and the uptake of Pap smears in Johannesburg, where cervical screening uptake is low. The study surveyed 280 women aged 30 and above attending

primary health care facilities using a validated measurement scale based on the Health Belief Model (HBM). Results showed that women who take up screening are older, more knowledgeable regarding cervical cancer and screening, less likely to perceive screening barriers, and more likely to perceive cervical cancer as a severe disease. The study highlights the need for tailored behaviour change communication strategies that address women's beliefs regarding screening barriers and emphasize the severity of cervical cancer to increase screening uptake.

Nyambe et al. (2021) examines the relationship between knowledge, attitudes, behavior, and social support towards cervical cancer screening and vaccination in Zambia. Results show that only a minority of respondents had heard of cervical cancer, attended screening, or vaccinated their daughters. However, awareness of cervical cancer strongly correlated with practicing screening and vaccination, and social interactions were found to greatly influence prevention behaviors. The study suggests a need to increase knowledge and awareness among both women and men and highlights the importance of interpersonal interactions for promoting prevention behaviors.

According to Patel et al. (2021), cervical cancer and human papillomavirus (HPV) are major public health concerns in India, where 132,000 new cases of cervical cancer and 74,000 deaths occur annually. Patel et al. (2021) assessed the knowledge and attitudes of medical and paramedical female students aged 18-25 years about cervical cancer and HPV vaccination through a cross-sectional survey using a validated questionnaire. The results show that most participants belonged to upper middle and upper socioeconomic classes, were pursuing MBBS, resided in villages, had educated parents, and had good healthcare-seeking behavior. However, school education, television, and printed advertisements were underutilized as sources of

information on HPV. Only 8% of the participants had received the HPV vaccine, while knowledge scores were low, with the mean score being 5.19 out of 17. Place of residence was the only factor found to affect knowledge scores. The study highlights the need for increased awareness and education on HPV among students to promote prevention behaviors. Participants showed interest in seeking knowledge and in getting vaccinated if they were provided with sufficient information.

Nattembo (2018) investigated the awareness, attitudes, and behavior of female university students towards cervical cancer messages. The research was conducted due to the rise in cervical cancer prevalence caused by limited effective communication. The study objectives were to investigate the communication behavior of young adults towards cervical cancer, understand female student's recognition of cervical cancer as a problem, and identify the gain and loss frames related to cervical cancer, cervical cancer communication behavior, and factors influencing behavioral intentions towards cervical cancer services. The findings indicated that the participants preferred to receive cervical cancer information from doctors. However, they mainly received information through radio. The study also identified constraints respondents face when responding to cervical cancer call-to-action campaigns. These constraints included stigma, lack of knowledge and access to services, and lack of recommendation from doctors.

According to Tapera et al. (2017), female students at the University of Botswana had a low uptake of Pap smear screenings. The likelihood of students engaging in preventative practices was lower because they did not believe they were at risk for cancer, which is the most likely explanation for this. This study emphasizes the importance of promoting university-based cancer education campaigns to increase participation in cervical cancer screening programs. It is recommended that these

campaigns be integrated into the current medical services offered by universities, to encourage more individuals to take advantage of these benefits.

According to Tapera and colleagues' (2017) research, the women who participated in the study had positive views about cervical cancer, screening, and treatment. Most participants believed that early detection was important for timely treatment. However, a small number of women expressed the belief that treatment for cervical cancer was only available to wealthy individuals and that it involved procedures that were embarrassing or shameful.

It is important to increase awareness about the importance of undergoing cervical cancer screening, as negative attitudes towards it can have a significant impact on an individual's decision to seek medical care. According to Mukama et al. (2017), even though people generally have positive views about screening, low participation rates and inadequate health-seeking behaviors may be due to unfavorable opinions about treatment. Tapera et al. (2017) also found that negative attitudes hinder both preventive and therapeutic measures for cervical cancer, according to their qualitative research.

The desire to test, perception of screening importance, and intention to recommend/routine recommendation of cervical cancer screening are all core information elicited by research exploring women's attitudes regarding cervical cancer screening (Abiodun et al, 2014). Generally, the bulk of the studies revealed good attitude towards cervical cancer screening among female school instructors (Marwa and Tarek 2017). Most of the research found that female school instructors were very willing to undergo a cervical cancer screening test.

## Significance of Cervical Cancer Screening

The National Cancer Institute (2015) states that despite its slow progression and high level of preventability, cervical cancer remains a leading cause of illness and death among women globally. In the tissue layers of the cervix, aberrant cell changes lead to the development of cervical cancer. Pre-cancerous lesions are modifications that take place in cervix cells prior to cancer development. Pre-cancerous lesions can be quickly identified with cervical cancer screening and are completely treatable (Balasubramaniam et al 2019). The International Agency for Research on Cancer conducted a comprehensive analysis of data in 2022 and concluded that countries can lower the occurrence and death rates of cervical cancer through effective early screening programs.

The high morbidity and mortality rates associated with cervical cancer have been connected to women's non-participation in screening programs and low screening uptake among women in developing nations. Also, because the screening program is not accessible to persons in developing nations, they may not get screened or get screened insufficiently (Anaman-Torgbor, 2020).

According to (Gaffney et al. 2018), there are approximately 270 000 fatalities of women worldwide per year, or one every two minutes. The young are impacted globally by these. Gaffney et al (2018) suggest that addressing critical issues related to screening and prevention could enhance survival rates. Meanwhile, Rendle et al (2022) found that a significant number of newly diagnosed cancer patients in Botswana did not undergo cervical cancer screening before their diagnosis. Delay in screening has a negative impact on early diagnosis, which has a negative impact on the overall burden of cervical cancer. So, if cervical cancer incidence, mortality, and morbidity are to be reduced, routine cervical cancer screening is essential.

Several regions of the world have identified local characteristics that are relevant to employ in cervical cancer screening programs. In the US, not getting a cervical cancer screening has been associated with race and ethnicity, having less money, having less education, and not having health insurance (Pratte et al, 2018).

According to (Salem et al 2017), the low adoption of cervical cancer screening services in Saudi Arabia can be attributed to various factors such as a lack of knowledge about the disease and screening, fear of pain and embarrassment, and perceived low risk of getting sick. Jisa (2021) also suggests that developing countries have low utilization rates of cervical cancer screening programs due to factors such as limited awareness, lack of family support, stigma surrounding the illness, and low perceived risk. The upcoming section will describe and analyze the study's independent variables.

## Review of the Independent Variables

The independent variables from the conceptual model described in the preceding chapter are thoroughly reviewed in this section.

### Women's Level of Knowledge/Awareness and Cervical Cancer Screening

The United Nations (2000) has recognized the right of women to make informed decisions about their reproductive health as part of its Millennium Development Goal to promote gender equality. For individuals to make informed decisions about seeking preventive services, they must be aware of basic information about the disease and the available preventive measures, which is referred to as their "perceived risk," according to Shaikh & Hatcher (2005).

Research conducted in Uganda and Mexico indicated that both the public and healthcare providers who aimed to educate their communities about cervical cancer

and screening programs lacked adequate information. A population-based study in Mexico revealed that women who were aware of the purpose of cervical cancer screening programs were three times more likely to utilize them compared to those who were unaware (Lazcano-Ponce et al., 1999).

Research carried out among healthcare personnel at Mulago Hospital found that only 29% had a proper understanding of the risk factors associated with cervical cancer, and very few recognized what made someone eligible for screening (Mutyaba et al., 2007). Meanwhile, a qualitative study conducted in Malawi revealed that women had limited knowledge about cervical cancer and only perceived it as a deadly disease (Fort et al., 2011).

Kumar & Tanya (2014) found that in their study, 81.9% of women had limited knowledge about cervical cancer and screening (85.5%). Similarly, a study conducted on women who visited the hospital showed that 84% of them were unaware of cervical cancer and its screening. Kadian et al (2021) research on cervical cancer awareness indicated that more than 55% of women had insufficient knowledge about cervical cancer and its screening, and almost 75% lacked any knowledge about it.

Okunowo et al (2018) found that individuals may not participate in screening intervention programs due to a lack of information or because healthcare providers did not recommend it. Prior counseling from healthcare professionals or knowing someone who has had cervical cancer could increase understanding and utilization of the Pap smear test. Moreover, having an education degree affected comprehension of cervical cancer but not participation in Pap smear testing. Rendle et al (2022) noted that among 42 women enrolled in their study in Botswana, those with limited knowledge about HPV experienced delays in receiving earlier screening for cervical cancer prevention.

**Women's Perception and Cervical Cancer Screening**

Studies conducted in Ghana revealed that while some women are knowledgeable about cervical cancer screening programs and their benefits, they still do not make use of them. Although most women understand that cervical cancer screening detects precancerous cells at an early stage, 61.3% of them do not believe that they are at risk since they perceive cervical cancer as a condition affecting older individuals, usually those over the age of 50 (Opoku et al., 2016).

Research conducted in Thailand indicated that women aged 35 and above are more likely to view themselves as being at greater risk of cervical cancer compared to younger women (Islam & Tahir, 2002). Women's decision to utilize cervical cancer screening programs is influenced by their perception of risk. Similarly, in India, older women perceived themselves to be at high risk but did not seek cervical cancer screening services since detecting and treating precancerous cells had little impact on them.

Cervical cancer screening is designed to identify abnormal cells on the cervix before they develop into cancer. Studies conducted in Latin America, Malaysia, Trinidad, Jamaica, and Malawi found that people believe cervical cancer screening tests are used for diagnosis rather than prevention, and women fear being screened due to the possibility of being diagnosed with this deadly disease (Fort et al., 2011). Additionally, in Malawi, women believed that cervical cancer screening could only detect a fatal illness (cancer) and that there was no cure, which would hasten their death rather than provide any benefit (Fort et al., 2011).

Tapera et al (2017) found that female students at the University of Botswana had low rates of Pap smear screening. The primary reason for this was their belief that they were not at risk of getting cancer, leading to a lack of interest in taking

preventive measures. This study emphasizes the importance of university-based cancer education campaigns to promote the benefits of cervical cancer screening and integrate them into existing university medical services to encourage more individuals to participate in these screening programs.

## Review of Moderating Variables

The moderating variables from the conceptual model described in the preceding section are thoroughly reviewed in this section.

### Women's Education Level and Cervical Cancer Screening

The aim of this study was to investigate the barriers and knowledge level associated with cervical cancer screening among female university students and suggest intervention strategies. The study used a mixed-methods design, involving an online survey followed by focus group interviews with 26 female university students aged between 20-29 years who were divided into three groups based on their sexual experience and cervical cancer screening history. Results showed that participants had low to moderate levels of knowledge regarding cervical cancer and screening. Four main barriers to cervical cancer screening emerged, including socio-cultural barrier, knowledge barrier, psychological barrier, and practical barrier. Three themes for intervention strategies were identified: socio-cultural intervention, educational intervention, and alternative screening intervention. The study concluded that while university students' sexual experience has increased, socio-cultural perceptions of sexual health remained restrictive, and knowledge about cervical cancer screening is inadequate. Thus, there is a need for implementing various strategies that are sensitive to female university students' culture, increasing knowledge levels, and changing

socio-cultural perceptions towards unmarried young women's sexual health. (Kim et al 2021).

Flores et al. (2019) examined the health literacy of older Mexican American women in South Texas regarding cervical cancer from the perspective of Zarcadoolas, Pleaseant, and Greer's health literacy model. The study used both focus groups and individual interviews to explore the issue, identifying several themes related to health literacy including fundamental literacy (language), science literacy (cancer prevention), cultural literacy (cultural differences), civic literacy (availability of advice), and media literacy (learning from soap operas). The study found that Mexican American women's cultural values and language use can have both positive and negative effects on cervical cancer screening rates. Health care providers can use this information to improve cervical cancer screening practices among Mexican American women by providing education and communication strategies that are congruent with their culture, language, and code switching. The study suggests that understanding culture and language can help health care providers develop individualized patient care and education strategies for populations they serve.

Murfin et al. (2020) investigates how education, income, and occupation influence the uptake of cervical screening and HPV vaccination among eligible women in developed countries, including the United Kingdom, United States, Spain, Germany, and Norway. The study identified that obtaining high school or college education is associated with the uptake of both cervical screening and HPV vaccination. However, total household income and income in respect of the countries' poverty line were measured less frequently than education, but also associated with screening and vaccination in some studies. Occupation was infrequently measured in comparison to education and income, and therefore, no conclusive evidence could be

drawn regarding its association with uptake. The study suggests that interventions to promote cervical cancer prevention strategies should be targeted towards women and girls with lower education levels and lower income. Nurses play a significant role in promoting cervical cancer prevention programs, and the review findings offer new insight that can inform future policy and nursing practice on targeting interventions to promote uptake among women who are underusing cervical cancer prevention programs. Since the relationship between individual socioeconomic factors and uptake of preventative strategies varies between countries and populations, these factors should be considered separately.

Wuerthner et al. (2016) wrote a review of cervical cancer screening, treatment recommendations, and prevention. The study notes that Pap testing has made cervical cancer a treatable disease but highlights that 50% of women diagnosed with cervical cancer have never had screening done, and 10% had not been screened within the last five years. The article emphasizes the importance of nurse practitioners (NPs) having a strong understanding of cytohistologic abnormalities, the role of human papillomavirus (HPV) in the development of cervical dysplasia and cancer, and the current guidelines for cervical cancer screening and prevention. Providing NPs with this knowledge can help improve cervical cancer screening rates and ultimately reduce cervical cancer incidence and mortality.

The United Nations (1995) stated that education is an important factor in human health, with higher-educated families generally having better health. In underdeveloped countries, women are frequently undereducated, which has negative effects on their general quality of life, including their ability to access healthcare and their propensity to seek it. A study conducted in Jamaica discovered that 64% of women who had undergone a pap smear had completed secondary school, while only

41.5% of those who had not undergone the test had a similar educational background (Shaikh & Hatcher, 2005). Similar research conducted in the United States, Mexico, and Jamaica has revealed a correlation between a higher level of education and increased attendance at cervical cancer screening programs (Bingham & Mannila, 2001).

Okunowo et al (2018) discovered that women did not utilize screening services for various reasons, such as insufficient information and encouragement from healthcare providers. The objective of healthcare professionals is to educate and motivate women to learn more about screening programs and take advantage of them. Moreover, education level has been shown to affect knowledge of cervical cancer, but it does not necessarily influence whether individuals utilize screening services, according to Okunowo et al (2018).

According to research, health education using different teaching methods is a useful strategy for sharing information and decreasing the occurrence of cervical cancer. Education programs can also be used to increase knowledge about cervical cancer, encourage cancer-prevention behaviors, and enhance awareness of susceptibility. Women can feel empowered by learning about cervical cancer, its warning signs, and the availability of effective treatment (Abudukadeer et al., 2015; Federal Democratic Republic of Ethiopia, 2015).

**Distance and Cervical Cancer Screening**

The proximity of the nearest healthcare facility to patients and clients has been identified as a critical factor affecting women's participation in preventive health services, such as cervical cancer screening. Studies conducted in Chegutu, Zimbabwe, have shown that longer distances between women and healthcare facilities are linked to a decreased likelihood of utilizing cervical cancer screening programs. The cost of

the service is influenced by the accessibility of transportation, the facility's location, and the travel time needed to get there (Nyamambi et al, 2020).

Malambo, N. (2020) examines how travel and distance can make cervical cancer screening safer for women in Eswatini. The study was based on original ethnographic research conducted in a semi-urban town in Eswatini from September to December 2014, involving daily participant observation and interviews with 20 women and 7 health workers. Study results reveal that woman seeking cervical cancer screening face negative judgment and gossip from healthcare providers, creating fear, and making the clinical encounter difficult and laborious. To mitigate this fear, women seek screening in distant hospitals and with nurses who are not from their home area, providing anonymity and minimizing pathways of gossip. The social rationale behind this behavior highlights the importance of considering local medical migration and cultural factors when designing cancer screening programs in Eswatini. The study challenges cultural assumptions about women's avoidance of cervical screening and suggests an approach that is sensitive to clinical and social realities to improve screening programs in Eswatini.

Sedani et al. (2019) examine the effects of rural screening on the referral and management of cervical cancer in Tanzania. The researchers analyzed medical records of 108 cervical cancer patients from rural communities who visited Ocean Road Cancer Institute (ORCI) between 2005 and 2014. They collected demographic, clinical, and lifestyle data and linked it to databases of patients who visited screening clinics in Bagamoyo and Chalinze. The results showed that after the initiation of rural screening clinics, there was an increase in the duration from diagnosis to prescribed treatment and from referral to treatment. The proportion of patients who received combination chemoradiotherapy increased, but completion of treatment decreased.

Patients who visited Muhimbili National Hospital had shorter periods between referral and prescribed treatment than those who did not. Patients treated at ORCI had shorter periods between diagnosis and referral to treatment. The study suggests that future research should focus on investigating barriers to seeking cancer care, benefits of chemoradiotherapy, and time until diagnosis and treatment. The prescription of complex treatments that require more visits to treatment centers may also contribute to a decline in treatment completion.

Srinath et al. (2022) discussed the increasing incidence of breast and cervical cancer in low- and middle-income countries due to late presentations, which leads to lower cure rates. The screening programs in these countries are not comprehensive enough, and the study systematically analysed the barriers to screening using an accessibility framework. The study used the 5A framework (approachability, acceptability, availability, affordability, and appropriateness) to classify the screening barriers and added two more aspects (awareness and angst). The review revealed that lack of awareness, cost of screening service, and distance to screening centres were major impediments to screening. Embarrassment, fear of screening, and cultural factors such as lack of spousal or family support could also be obstacles to screening. The authors concluded that policymakers and governments should improve the confidence of people in the health systems and increase awareness about cancer causes and risk factors through evidence-based strategies to promote adherence to screening. This paper provides valuable insight into the challenges faced by low- and middle-income countries in implementing effective screening programs for breast and cervical cancer.

Cervical cancer screening can prevent the disease, but rates of screening are low in developing countries (Tawiah et al. 2022). This study aimed to assess the

proportion of women screened, types of screening used, and factors influencing uptake among Ghanaian women who had access to free screening services. The researchers collected data from 710 women aged 25-65 in Asokore-Mampong, Ghana using a structured questionnaire that covered socio-demographic characteristics, risk factors, knowledge of cervical cancer, and utilization of screening services. The results showed that only 24.6% of participants had been screened for cervical cancer, with visual inspection with acetic acid being the most common method used (97.1%). For those who had not been screened, common reasons included believing they were healthy, fearing pain, lack of awareness, and being too busy. Participants who were aged 35-44, married, formally employed, and had higher knowledge of cervical cancer were more likely to have been screened. Despite the availability of free screening services, screening uptake among Ghanaian women remains low.

In a 2012 study by Ndikom and Ofi in Nigeria, it was discovered that transportation costs and distance were two of the main reasons why cancer screening services were underutilized. The authors suggested that the distance to the closest healthcare facility could pose a significant obstacle for some women, as they may have to walk several kilometers to reach it. The accessibility of cervical cancer screenings was reportedly impacted by the distance to the closest medical facility, according to Chifamba (2019). According to the results, 38% of participants reported that they did not take the test due to the distance of the health facility. They would need to travel by bus or other means to reach it, which may not be convenient for them.

**Women's Attitude and Cervical Cancer Screening**

In a 2012 study by Ndikom and Ofi in Nigeria, it was discovered that transportation costs and distance were two of the main reasons why cancer screening services were underutilized. The authors indicated that distance to the nearest health facility may be a major challenge to some women having to walk several km to the nearest health facility. The accessibility of cervical cancer screenings was reportedly impacted by the distance to the closest medical facility, according to Chifamba (2019). In the findings, 38% of the respondents indicated had not taken the test because the health facility is far away and those who need the test will have to travel by bus.

According to a study by (Wardle et al. 2015), some women believe they are healthy, while others find it embarrassing to have their bodies evaluated by men in the medical field. As a result, they believe getting screened is unnecessary. Respondents to the study described some of the unpleasant instances of bleeding and pain that other participants, such as friends, had mentioned. Some respondents develop a negative attitude toward screening because of this.

Women visit healthcare institutions to get screened for cervical cancer, however access to and use of the services are influenced by financial considerations. David K (2018) points out that while cervical cancer screening programs may be offered at all levels of healthcare institutions, the cost may prevent many eligible women from accessing them. It is crucial to make sure that the poor can afford the services, especially in rural areas where people must travel great distances to receive healthcare.

In most poor countries, community members have generally negative opinions toward medical staff, especially in public healthcare institutions (Bennet, 2018).

Given that many residents in rural areas have access to healthcare through public facilities and only use it when they are ill and have no other options, this can be a deterrent (Mantula & Mwisongo, 2018).

As a result, it is difficult for qualified women to use these healthcare facilities for screening tests even when they are not ill. According to Costance (2016), women who may desire to get examined for cervical cancer but cannot afford it in other private settings may encounter obstacles due to the unfavourable attitude that certain healthcare professionals exhibit toward patients in public healthcare facilities.

Other health facility-related factors, such as infrastructure availability in terms of the equipment required to conduct the screening and the competences of the healthcare staff, may have an impact on the acceptance of cervical cancer screening programs (Bennet, 2018). According to a study by (Kibicho 2014), women's access to cervical cancer screening services is significantly hampered by the paucity of female screeners in healthcare institutions. When a male healthcare professional does the exam, it includes opening the cervix, a procedure that many women find insulting (Anaman-Torgbor & Angmorterh, 2020).

**The Socio-demographic Factors**

Socio-demographic characteristics include age, income, education, gender, marriage status, religious affiliation, ethnicity, migration history, employment, and household, according to a sizable and expanding body of research (Hoffmeyer-zlotnik, 2016). According to Hoffmeyer-explanation Zlotnik's of a standardization study in individual variables, demographic standards consider factors that affect how a person behaves. People's access to and use of screening services has been proven to be significantly influenced by the extension of such behaviours. Most of the research

have been focused on urban-dwelling women, leaving out those who reside in rural areas, according to a review of the literature (Okunowo, 2018).

To investigate the relationships between a few key demographic factors, including age, insurance status, interview language, income, educational attainment, and cancer screening habits among African immigrants in the United States, Adeyemi (2016) adopted a quantitative approach on cross-sectional data. The study discovered that there are some definite differences in the cases of cervical cancer screening between women who are foreign-born, and immigrants as opposed to women who were born in the United States. Demographic factors such colour, ethnicity, insurance status, place of birth, and access to medical care were found to be the main contributors to this gap. Studying the use of cervical cancer screening programs will therefore need to take these factors into account.

Women were asked to rate how frequently they were able to engage in health-related behaviours like physical activity, doctor visits, and cervical cancer screening as part of a cross-sectional quantitative study to examine factors that affect access to and utilization of cervical cancer screening services among women living in the Kumasi metropolitan area (Kokuro, 2017). According to the study's findings, elder respondents tended to take more logical behaviours. According to the results of the same study, respondents who were older also demonstrated better odds, in comparison to respondents who were younger, to embrace the use of suggested techniques in the prevention of morbidities caused by diseases.

Nonetheless, the same study discovered that younger participants were more likely than older participants to identify illness signs and symptoms more promptly. Also, data analysis showed that demographic variables like age and gender were

substantially associated with the majority of the analysed health behaviours, including going to a doctor to have a cervical cancer screening.

In the survey, it was asked of every responder how frequently they engaged in screening procedures, medical examinations, dietary routines, and physical activity. A study by Kagika et al. (2017) used a different methodology to investigate how preventive health interventions are accepted, according to the study. In the Kiru ward of Mathioya Sub-County in Muranga County, the study looked at the variables affecting women's ages 18 to 49's access to and utilization of cervical cancer screening services. In terms of frequency, older people, gender, and educational attainment were the best predictors of the use of screening services.

Studies that concentrated on urban areas and those that concentrated on women who remained in rural communities revealed disparities, though. One example of this kind of research is that done in Blantire, Malawi (Ndejjo et al,2016). Following the collection of an adult and adolescent sample, the researchers contrasted a casual model. Education, age, and gender were the primary exogenous variables that were incorporated into the model. Social support and self-esteem were two endogenous factors that were incorporated into the model. The results of the investigation demonstrated that the model was unable to equally match all the data. The findings also showed that gender had a negligible impact on participants' individual behaviour. There is few research that have concentrated on rural populations, and inconsistent findings have been found about the influence of participants' marital status and educational attainment on their behaviour (Ndejjo et al, 2016).

Isabrye et al (2022)'s study looks into both personal and social factors that influence cervical cancer screening among Zimbabwean women of reproductive age. Only 13.5% of the participants in this study reported having previously had cervical

cancer screening, according to the study's findings. There were also subgroup variations in screening rates. According to the data, a person's higher educational degree did not significantly affect whether they used cervical cancer screening services. In this instance, education did not predict favourable attitudes about cervical cancer screening across the board for all age groups. In contrast to the findings above, a study by Damiani et al. (2015) found that there are disparities in cervical cancer screening adherence with respect to participants' educational levels.

After doing a meta-analysis, the researchers concluded that women with the greatest levels of education were more likely to undergo a cervical cancer screening (Damiani, et al., 2015). In Ethiopia, women of reproductive age were evaluated for their use of cervical cancer screening services and related factors as part of a cross-sectional study by Dirirsa et al. in 2022. The study also reported that education level is a factor that is independently related to the use of cervical cancer screening services (Dirirsa, Asefa, & Salo, 2022).

In conclusion, a study of the literature reveals that the bulk of studies have mostly focused on women who live in metropolitan settings, with only a small number of studies focusing on women in rural regions. Furthermore, most of the research have employed cross-sectional quantitative data which did not capture the perspectives of participants in detail. The findings from the examined literature have also revealed conflicting results for women from rural and urban areas. Studies carried out in rural areas have likewise shown contradictory results. The goal of this study was to advance our understanding of how certain socio-demographic factors affect rural women's use of cervical cancer screening services.

Williams-Brennan et al. (2012) presents the findings of a scoping literature review that aimed to identify the social determinants of health (SDH) associated with

cervical cancer screening for women living in middle and low-income countries. The study found that several factors influence access to cervical cancer screening, including structural (cultural and societal values, socioeconomic position, ethnicity), intermediary (geographic location, health-seeking behaviors, psychosocial factors, nature of the health system), and cross-cutting (social cohesion) SDH. The study concludes that an intersectionality approach may provide a richer understanding of the complexities that influence women's pathways to cervical cancer screening and assist the design of international programs and policies from a social justice perspective. Most researchers studying cervical cancer screening focused on exploring single socio-demographic variables, which is typical of positivist, biomedical, and epidemiological research.

Thulaseedharan et al. (2012) conducted a study to determine the risk factors for cervical cancer in a rural setting, India. The study used data from 30,958 women who constituted the unscreened control group in a randomized screening trial. Sociodemographic and reproductive potential risk factors were studied using the Cox proportional hazard regression model. Results showed that women of increasing age, having many pregnancies, and no education were at significantly increased risk of cervical cancer. The study concludes that education is the fundamental factor among sociodemographic and reproductive determinants of cervical cancer in low-resource settings. It suggests that public awareness through education and improvements in living standards can play an important role in reducing the high incidence of cervical cancer in India. It also emphasizes the importance of formulating public health policies aimed at increasing awareness and implementation of cervical cancer screening programs.

**Social-Cultural Factors**

Even though they may be aware that cervical cancer screening is available and may even be provided free in local health institutions, most women do not bother to have a medical test if they are healthy and have no apparent medical issues. This is primarily attributable to society's poor perception of illness and the sick, which deters women from using screening programs (Adeyami, 2016). Adeyemi (2016) found that some people view a cancer diagnosis as a death sentence, which deters them from getting screened in the first place. This is made worse by the high cost of treating the condition.

The belief system of women in a society is a significant determinant of whether they will accept cervical cancer screening services that are offered. According to research by Bennet (2018), Muslim women's decisions to undergo cervical cancer screenings were significantly influenced by their religious beliefs. The study determined that these ideas can be roughly characterized as views about cervical cancer screening and beliefs about health.

On the one hand, there were both false and true ideas about the Pap smear test in the beliefs about cervical cancer screening. Women who held the false assumption that people with gynecological issues are more likely to develop cancer. Some people in this group also had the opinion that only older women should get a Pap screening test, or that their faith in God would protect them from developing cervical cancer. For this group of women, getting screened for cervical cancer was not necessary. The right belief is that women who think all women are at high risk of acquiring cervical cancer will get a Pap smear test to find out how they are doing. To ensure that an imminent case of cervical cancer will not put their health at risk, they thus undergo these tests on a regular or periodic basis.

On the other hand, the health-related belief originated as a preventive behavior in the sense that women who value their own reproductive health are more likely to turn to screening as one of the ways to be proactive about potential illnesses in the future (Domnic, 2019).

In relation to the religion of women in their separate countries, there is another perspective on belief systems. Aisha et al. (2017) found that Muslim women living in Canada were significantly more likely to accept having their cervical cancer screened when they practiced their faith. Particularly, religious habits like trusting in Allah, praying, and having a sense of destiny influenced the women's decisions on whether to administer the screening tests. There are women who feel that the Almighty would protect them from developing cervical cancer and do not see the need to undergo screening since doing so would somehow undermine their faith in the Almighty.

Studies involving Christians revealed that non-Christians hold the view that if they were to develop the disease and it were to be discovered much later, when it could not be treated, that would be their fate, predetermined by God, and that there would have been nothing they could have done to prevent such an eventuality (Ndikom & Ofi 2012). In this instance, their religious beliefs posed a significant barrier to their acceptance of and use of the cervical cancer screening services that were offered.

Globalization has recently led to a massive increase in the diffusion of information, especially in poorer countries. The media has been acknowledged to play a significant impact in these countries in influencing decisions about the use of cervical cancer screening and treatment facilities as well as affecting women's ideas and attitudes (Judith & Seth, 2020). Rasul et al (2015) saw that the media has a big impact on how people think and feel about health.

The broadness of its scope in terms of the channel and audiences that it may reach make the media one of the most potent tool that can be utilized to battle the occurrence of cervical cancer. Nevertheless, the media has not made it a priority to spread knowledge about cervical cancer, its symptoms, and available treatments. Although though practically all television and radio stations, as well as print media like newspapers, reach women in Kurdistan, they are not informed about the incidence of cervical cancer among women and as a result, most of them are unaware of it.

Significantly, most of the information that the public receives in today's world comes from the media; as a result, if the media does not give such health information priority, women are invariably kept in the dark about health problems that could already be risking their lives. Another element that either supports or inhibits the usage of the available cervical cancer screening services is the domestic gender power relation.

According to research by (Mupepi et al. 2011), there are some situations in which married women fail to obtain their husbands' permission to administer the test. This is attributed to a variety of factors, including a lack of funding for the test, particularly in households where the male is the primary source of income. When men administer the test, it is connected to the entire process of testing in general. Even when younger female medical professionals do the procedure, older women may find it distasteful.

According to (Atuhaire 2013), among the Xhosa in South Africa, gender norms prevented the women who had had treatment for the precancerous lesion from negotiating the advised four-week period of abstinence from sex after the treatment.

Even though they are aware of the benefits to their health, this has led to women choosing not to participate in cervical cancer screening activities.

Women are less likely to get screened for cervical cancer because of the rising use of alternative reproductive health resources. Murugi (2014) points out that these services discourage women from giving birth and seeking out traditional medical care. So, they do not perceive the necessity of putting themselves through screening processes. Most of these women who practice alternative reproductive health practices reside in rural areas, where childbirth is handled by community midwives who employ traditional delivery techniques. This renders the medical screening procedure impossible for these ladies.

The fact that the screening method entails gazing inside the cervix is a turnoff for many women. This is particularly valid when a male is the medical practitioner performing the procedure. Kibicho (2014) demonstrated how these societal barriers prevented women from using cervical screening programs. These situations could be very embarrassing for the ladies who are seeking the test, and they would much prefer to avoid them than risk disclosing their nudity to people of the opposite sex. When the woman in question is married, this becomes even more challenging.

## Women's Marital Status, Parity, and Uptake of Cervical Cancer Screening Services

According to a study by (Gizaw et al. 2022), married women were 10.74 times more likely than5 single women to use the cervical cancer screening service. For the past three years, it has been discovered that marital status has a beneficial impact on the uptake of cervical cancer screening (Nwabichie et al, 2018). Ncube et al. (2015) found that married women had higher uptake than single women. Due to varying cultural contexts and geographic situations, the results of these studies conflict with

other findings. Married women are less likely to use cervical cancer services, according to (Aynalem et al. 2020).

Women who had children were 8.92 times more likely than women without children to use the cervical cancer screening services in 2022, according to Gizaw et al. The question of whether marriage and motherhood have an impact on cervical cancer screening among young adult women in Korea was investigated in a study done by Shin et al. in 2022. During two years of being eligible, 39.1% of the 3,925 women between the ages of 20 and 39 underwent screening for cervical cancer. When comparing married and single people, married people adhered to the services more closely. 57.7% of married women and 26.6% of single women in this study had already been screened before to the survey.

Also, the number of women using screening services increases when they have more children. This study demonstrated the beneficial effects of marriage and having children on cervical cancer screening compliance. Young adult women who marry an d have children may be exposed to and more likely to use a cervical cancer screening (Kaso et al, 2019).

## Religion and the Uptake of Cervical Cancer Screening Services

Religion, particularly the worship of a personal God or gods, is the belief in and adoration of an overpowering dominating force. African traditional religion, Christianity, and Islam are only a few of the religious groupings listed in the Oxford Dictionary. Participants in Chilenje and Kanyama, two townships in Lusaka, were the subject of a cross-sectional study. Participants' understanding of cervical cancer was questioned. Although it is generally believed that religious convictions have a

negative impact on the uptake of cervical cancer screening, a study by (Nyambe et al. 2019) found that religion encouraged people to get screened.

According to a study by (Modibbo et al. 2016), the type of religion influences the obstacles that are typically present in religions. Some religions embrace health initiatives, while others reject them. The women who took part in the study had varying levels of knowledge about cervical cancer. Other than the Muslim women, the Christian women knew more. The Muslim women stated that they believed that if the medical professionals discriminated against them, they might forego the screening procedures.

Dareng et al. (2015) conducted a study that aimed to evaluate the influence of spirituality and modesty on the acceptance of self-sampling for cervical cancer screening in Nigeria. The study enrolled 600 participants between August and October 2014 and collected information on spirituality and modesty using two scales. Most (69%) were married, 50% were Christian, and 44% were from southwestern Nigeria. Results showed that overall, 19% of women preferred self-sampling to being sampled by a healthcare provider. Adjusting for age and socioeconomic status, spirituality, religious affiliation, and geographic location were significantly associated with preference for self-sampling, while modesty was not significantly associated.

The study concludes that cultural and religious beliefs must be taken into consideration when planning health interventions like cervical cancer screening. Public health interventions and education should be related to the target population and their preferences to succeed.

Salman (2012) asserts that Islamic heritage and lifestyles influence women's behavior, activities, beliefs, roles as women, and self-care practices. Considering this, these procedures may determine whether a woman is screened or not. Moreover,

cancer is seen as a spiritual illness (Clegg-Lamptey, 2018). Also, some people think that men who are dissatisfied with their female companions are to blame for cervical cancer, which is thought to be the result of witchcraft (Modibbo et al, 2016)

Padela et al., (2010) conducted a study that aimed to assess rates of Papanicolaou (Pap) testing and associations between religion-related factors and these rates among a racially and ethnically diverse sample of American Muslim women. The study used a community-based participatory research design to recruit Muslim women attending mosque and community events in partnership with the Council of Islamic Organizations of Greater Chicago. Participants self-administered surveys incorporating measures of fatalism, religiosity, perceived discrimination, Islamic modesty, and a marker of Pap test use. Results showed that 84% of respondents had obtained a Pap test in their lifetime, and negative religious coping, such as viewing health problems as a punishment from God, was associated with a lower odd of obtaining a Pap test after controlling for sociodemographic factors (odds ratio [OR]=0.87, 95% CI=0.77-1.0). Living in the United States for more than 20 years (OR=4.7, 95% CI=1.4-16) and having a primary care physician (OR=7.7, 95% CI=2.5-23.4) were positive predictors of having had a Pap test, while ethnicity, fatalistic beliefs, perceived discrimination, and modesty levels were not significantly associated with Pap testing rates. The study highlights the need for further investigation of the relationship between religious coping and cancer screening behaviors to address religious values through cancer screening programs appropriately (Padela et al., 2010).

## Health Seeking Behavior and Uptake of Cervical Cancer Screening Services

Sociology literature suggests that health-seeking behavior is usually influenced by various factors such as sociodemographic characteristics, perception of illness, knowledge, and the accessibility and availability of healthcare (Chadza et al., 2012). Despite examining health-seeking behavior and other factors for cervical cancer prevention and control at the lower level, as recommended in the strategic plan in Ethiopia, the FMOH (2016; FMOH) found insufficient evidence to draw conclusions.

Nine out of ten people (85.8%) in a study by Habtu, Yohannes, and Laelago (2018) have not yet planned to get checked for various reasons. The reason given by 35.8% of individuals who did not engage in health-seeking activity was that they had never heard of the ailment, which was followed by (19%) never having experienced it personally. Lack of information and poor knowledge can have beneficial or negative effects on how women seek out health care. Health-seeking activity was not very common. Different socio-cultural circumstances and health education provided by medical facilities may be some of the causes of low health seeking behavior.

In a different study by (Hasahya et al. 2016), most participants underlined that poor health seeking behavior was caused in part by a lack of understanding regarding cervical cancer. Also, women's health seeking behavior was significantly impacted by their beliefs since they thought screening might detect both HIV and cervical cancer. The study also made note of how husbands might react to the results, particularly if they were HIV positive.

The study by (Natae et al. 2021) is in line with the study of Hasahya, which also identified women with poor health seeking behavior, though for different reasons. According to the study, just 3.8% of women were aware of the value of

getting screened, and while they were aware of cervical cancer and its screening services, there are not many centers offering them. Reluctance to seek medical attention could be brought on by ignorance about the value of screening.

# CHAPTER 3

# RESEARCH METHODOLOGY

The main aim of this study was to investigate how certain factors affect the utilization of cervical cancer screening services among rural women in the Gutu district. This chapter provides a thorough explanation of the research methods used to address the study's research questions. The methodology covers the research design, procedure for sampling the population, instruments for data collection, process for collecting data, techniques for analyzing data, and ethical considerations that were considered during the study.

## Research Design

This study was exploratory cross-sectional research. Both the exposure and outcome variables were analyzed simultaneously. This research design is less costly than other descriptive and causal research approaches, but it still provides valuable information on the utilization of cervical cancer screening services in the Gutu district.

## Population and Sampling Procedure

The Gutu district has a population of 226,693 individuals, and most of the rural population relies on farming for their livelihoods (Zimbabwe National Statistics Agency, 2012). There are six health facilities strategically located throughout the district that offer cervical cancer screening services. The target population for this study was women over 10 years old, as they are considered sexually active. The total

number of women in this group is 67,071 (Zimbabwe National Statistics Agency, 2012). Despite the age of sexual consent in Zimbabwe being 16 years according to section 81(1) of the constitution of Zimbabwe.

Cervical cancer screening services in Gutu district are offered even to people below 25 who are sexually active and are considered at risk of developing Cervical Cancer. Moyo et al (2012) suggested that the mean age of sex in Zimbabwe is generally estimated to be 14 and 15 years for boys and girls, respectively. This shows that children are having sexual debut at an early age which expose them to diseases including cervical cancer. Therefore, this study included participants from as low as 10 years of age who have had sexual debut.

**Sample Size Determination**

The formula below was used by Lemeshow et al, (1990) to calculate adequate sample size in a one-sample cross-sectional study.

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

To calculate the required sample size n, z represents the level of confidence at 95% (which is 1.96), while p denotes the prevalence of cervical cancer in Zimbabwe (which is 19%, according to Chokunonga, Borok, and Chirenje, 2014). The value of d specifies the precision of the estimate. According to Daniel & Cross (2013), the maximum allowable limit for the proportion of p that can be taken as d is 20%. In this instance, a relative precision of (20% of 19%) = 0.038 was utilized.

$$n = \frac{(1.96)^2 X 0.19(1-0.19)}{(0.038)^2}$$

Based on the calculation, N= 409, plus 10% for non-response, the total number of participants was 450.

## Sampling Technique

The researchers utilized a multi-stage stratified random sampling technique for this study. Each catchment area, which refers to the region officially served by a health facility providing cervical cancer screening services, was treated as a stratum. Simple random sampling was employed to select villages within each catchment area. To identify three villages from each stratum, all the villages in each catchment area were numbered, and a random number generator was used. Systematic sampling was then carried out using household registers provided by the village head that listed the names of households in each village.

To obtain the sample size required for this study, a systematic sampling method was utilized. The initial step involved selecting the first household randomly. The subsequent households were then selected by choosing every 42nd household from the first. This process was repeated until a total of 450 households had been chosen for the study. All sexually active females over the age of 10 were considered in each household, and one woman was chosen for interviewing using simple random sampling. When there were no sexually active females over the age of 10, the next household with an eligible participant was chosen for data collection.

According to the Zimbabwe National Statistics Agency (2012), the total population of women aged 10 years and above who are of childbearing age in the six catchment areas is 19,046. To determine the contribution of each catchment area to the total required sample size, the percentage contribution of each area was calculated.

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*Table 1.* Distribution by Catchment Area

| Catchment area | Total women above 10 years | No. of participants selected |
|---|---|---|
| Catchment A | 2306 | 54 |
| Catchment B | 3767 | 89 |
| Catchment C | 4002 | 95 |
| Catchment D | 3732 | 88 |
| Catchment E | 2588 | 61 |
| Catchment F | 2651 | 63 |
| Total | 19046 | 450 |

## Data Collection Instruments

A self-administered questionnaire was used to collect data for three months. The questionnaire asked for demographic information as well as variables related to the study's objectives. The cervical cancer screening status was the dependent variable under investigation. The factors that provided an explanation for the study were age, gender, marital status, distance to the health facility, occupation, parity status, level of education, religion, sources of information, attitudes, perceptions, income, and level of knowledge.

## Inclusion and Exclusion Criteria

The study included women who were sexually active and were of the age group ranging from 10 years and above. Cervical cancer screening programs in Gutu district allow screening to be done in all sexually active women who are exposed to the risk of cervical cancer. The study also considered only women who are permanent residence of Gutu rural areas. Women who were visitors to the area were not considered to be participants in the study. Women who were suffering from cervical cancer, and those who could not consent to be part of the study were excluded from participating.

## Validity and Reliability of the Study

The questionnaire was pretested in 10% of the total sample size of 450 households. The Gutu rural hospital catchment area was used to pilot the questionnaire before it was adopted for data collection. The 45 participants for testing were viewed as a cost, energy, and time efficient number of people who could aid in the validation of the questionnaire. One eligible participant was chosen from each household to complete the questionnaire.

Prior to data collection, a process of pretesting was conducted to detect errors in the questionnaire and other tool-related problems that needed to be rectified. The pretesting was carried out on a rural community with comparable characteristics to the targeted population; however, this group was not included in the actual data collection. The researchers were also able to access the Gutu rural hospital catchment area at a lower cost because it was done in a resource-constrained environment.

Principal Component Analysis was used to identify the underlying components (PCA). The results of the pre-testing indicated that the questionnaire was satisfactory for collecting all necessary data. The pretest Cronbach Alpha coefficient equaled (=0.82), which suggests that the questionnaire has high internal consistency overall.

Before collecting data, environmental health technicians who were involved in the process received training on how to administer the questionnaire during their meetings with health worker staff. Role-playing exercises were conducted to ensure that they were fully prepared and confident in their ability to collect accurate data. Although the questionnaire was solely available in English, the researchers provided explanations of the questions in the local language to accommodate participants who were illiterate.

## Data Collection Procedures

Six Environmental health Practitioners, who primarily work with communities, were selected to gather data from the chosen households. These data collectors were able to conduct their routine tasks while simultaneously collecting data. Since the community members knew and trusted these health workers more, there were fewer refusals, and the response rate increased. The entire data collection process lasted for three months, but due to Covid-19 restrictions that intermittently interfered with the process, it became protracted. Afterwards, the data underwent cleaning and analysis, which took approximately one and a half months.

## Data Processing and Analysis

The gathered data was entered into a password-protected computer and stored in an Excel spreadsheet to ensure its security. Microsoft Excel was used for data cleaning, while the Stata version-13 statistical package was utilized for statistical computations. To analyze socio-demographic variables, a descriptive analysis was conducted, and findings were presented using graphs, pie charts, and tables. To identify the factors linked with cervical cancer screening uptake status, a multivariate analysis was performed.

To determine the significant factors related to cervical cancer screening uptake, binary logistic regression was employed as the dependent variable (cervical cancer screening uptake) was categorical with only two categories. The cervical cancer uptake status was a binary categorical variable that served as the dependent variable. To ascertain the importance of explanatory variables, a significance level of 0.05 was utilized.

## Ethical Considerations

To conduct the research, approval was obtained from the District Medical Officer for the Gutu district and the Provincial Medical Director for Masvingo province. Participants were informed of the research and provided their consent to participate voluntarily. Those who declined to take part were not forced to participate. Consent form was explained to the participants, and they were asked to sign as confirmation of agreement to participate. For participants under the age of 18, informed consent was obtained from their parents or guardians. During the interview study period, the participants had the liberty to withdraw at any moment. To guarantee confidentiality, the research will not contain any identifying information or names of respondents.

# CHAPTER 4

# RESULTS AND DISCUSSION

This chapter presents the research's results using tables, pie charts, and graphs. The findings of data collected from participants are also discussed in this chapter. The descriptive outcomes include various sections like socio-demographic details, knowledge, access to cervical cancer screening services, socio-cultural factors, and perceptions. The study also includes bivariate analyses to determine if any variables were noticeably associated with cervical cancer screening uptake status. Lastly, the chapter concludes with a discussion of a multivariate analysis to establish which factors independently and significantly remained linked to cervical cancer screening uptake status.

## Socio-Demographic Variables

The table presented displays the frequency of socio-demographic factors used as predictor variables in this study. The response rate was 98% which was enough for data to be analysed and come up with reliable findings. The variables considered were age, marital status, religion, parity, highest level of education, and occupation. Most participants (30.2%) belonged to the age group of 30-39 years. Although there were some study participants aged between 10 to 19 years (7.9%), they were the least represented. Majority of the participants (66.4%) were married, and 55.9% had a certificate for their highest educational qualification.

*Table 2.* Socio-Demographic Variables

| Variable | Category | Frequency | Percent |
|---|---|---|---|
| Age | 10 – 19 | 35 | 7.9 |
| | 20 – 29 | 111 | 25.0 |
| | 30 – 39 | 134 | 30.2 |
| | 40 – 49 | 113 | 25.5 |
| | 50+ | 51 | 11.5 |
| Marital Status | Divorced | 14 | 3.2 |
| | Married | 295 | 66.4 |
| | Separated | 25 | 5.6 |
| | Single | 56 | 12.6 |
| | Widowed | 54 | 12.2 |
| Highest level of education | Certificate | 248 | 55.9 |
| | Diploma | 42 | 9.5 |
| | None | 4 | 0.9 |
| | Primary | 84 | 18.9 |
| | Secondary | 47 | 10.6 |
| | University | 19 | 4.3 |
| Occupation | Civil servant | 54 | 12.2 |
| | Housewife | 243 | 54.7 |
| | Professional | 11 | 2.5 |
| | Self-employed | 90 | 20.3 |
| | Student | 24 | 5.4 |
| | Trading | 22 | 5.0 |
| Religion | Christian | 429 | 96.6 |
| | Muslim | 15 | 3.4 |
| Parity | 0 – 2 | 160 | 36.0 |
| | 3 – 5 | 228 | 51.4 |
| | 6 – 8 | 50 | 11.3 |
| | 9+ | 5 | 1.1 |

Most participants were married (66.4%) and Christian (96.6%). Less than 1% of the participants in this study had no formal education, and 54% were housewives.

## Cervical Cancer Screening Uptake Status

Participants were asked if they had ever been screened for cervical cancer. The results of the question about cervical cancer screening uptake among participants are shown in Figure 2.

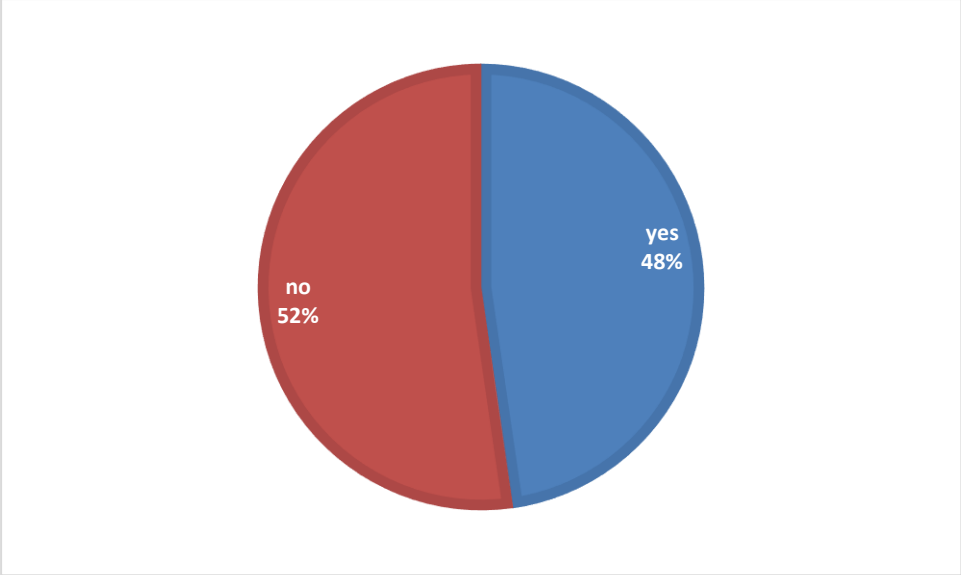


*Figure 2.* Cervical Cancer Screening Uptake Status

The findings revealed that a slightly higher proportion of people were not screened for cervical cancer than those who were. The findings differ from published statistics, indicating an improvement in cervical cancer screening in the district. However, considering that the service is provided for free, a 48% uptake of screening services among the eligible population is still too low.

According to Nwabichio et al (2018), the uptake of Cervical Cancer screening services in African women is very low. The main concern was among rural women who had limited access to health care. However, the current study supports the same concern, even though the findings of the targeted area are slightly higher than in other urban settings. According to the Zimbabwe National Statistics Agency (2016), only 24% of women in Harare had been screened for cervical cancer. Although Harare has a large urban population, uptake is much lower than in the current study's rural setting.

Mantula and Mwisongo (2018) proposed aggressive strategies for women in the community and those who visit the Health Facility to improve service uptake. The

target area is where services are offered by the Ministry of Health and Childcare in collaboration with partners, which explains the 48% uptake in this study. It is still a major concern, however, because the services are provided to the communities for free, and one would expect a much higher uptake.

## Socio-Cultural Factors

The data was subjected to a descriptive analysis of socio-cultural factors. Spouse support and religious support were among the socio-cultural factors. The majority of those polled (63.5%) were aware of the causes of cervical cancer. Only 11% of participants believed that cigarette smoking, and alcohol consumption increased the risk of developing cervical cancer.

*Table 3.* Socio-Cultural Factors

| Variable | Category | Frequency | Percent |
|---|---|---|---|
| Awareness of causes | Yes | 282 | 63.5 |
| | No | 162 | 36.5 |
| Do cultural beliefs hinder access | Yes | 423 | 95.3 |
| | No | 21 | 4.7 |
| Do cigarette smoke and alcohol intake increase the risk | Yes | 49 | 11.1 |
| | No | 152 | 34.2 |
| | Do not know | 243 | 54.7 |
| Household awareness of service availability | Yes | 276 | 62.1 |
| | No | 116 | 26.1 |
| | Do not know | 52 | 11.8 |
| Does spouse support | Yes | 273 | 61.5 |
| | No | 42 | 9.5 |
| | n/a | 129 | 29.0 |
| Does religion encourage | Yes | 218 | 49.1 |
| | No | 226 | 51.9 |

Around half of the participants reported that their religion motivated them to undergo cervical cancer screening. This outcome may be since most respondents were Christians, with fewer representatives from other religions. Nevertheless, some studies have indicated that religion could act as an obstacle in accessing cervical cancer screening services (Lofters et al., 2017).

The primary type of encouragement received by participants was health education given during church gatherings with assistance from healthcare workers. Additionally, the results showed that cultural convictions hindered about 95% of the respondents from receiving cervical cancer screening services.

Cervical cancer was mentioned as the result of witchcraft, demons, and the need for spiritual healing. Major et al. (2018) discovered that cultural beliefs influence women's attendance at cervical cancer screenings in Botswana. Approximately 61.5% of respondents stated that their spouses encouraged them to seek cervical cancer screening services.

In rural African society, men still have the dominant role in making family decisions, which includes determining whether a family member should seek healthcare services or not (Adegboyega, Aleshire, Dignan, and Hatcher, 2019). Men who participate in cervical cancer screening programs will be more equipped to make informed decisions about their partner's screening. Research conducted in rural Tanzania by Lyimo et al (2012) discovered that husbands' agreement for cervical cancer screening is a crucial factor in rural women's uptake of the service.

## Access to VIAC Services

One of the most important variables in the provision of cervical cancer screening is access to VIAC services. Figure 2 shows how descriptive analysis was used on the data to gain insight into the accessibility of cervical cancer screening services in the Gutu district.

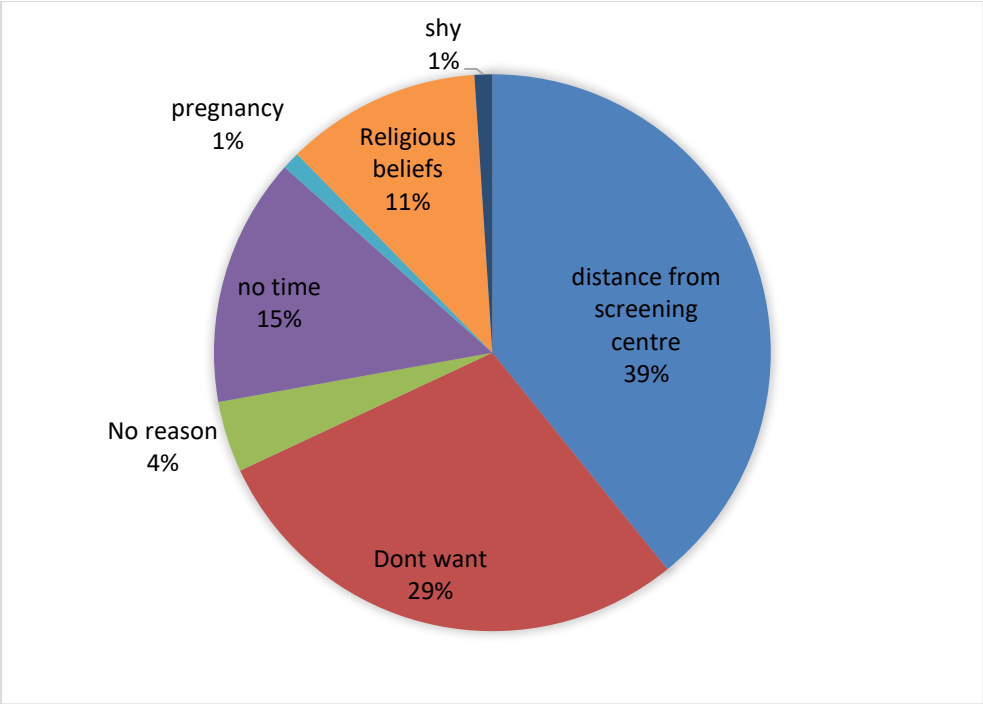


*Figure 3: Reasons for Not Being Screened for Cervical Cancer*

Figure 3 illustrates the most prevalent reasons for not undergoing cervical cancer screening, which were participants' distance from the screening center (39%) and unwillingness (29%). The impact of distance as a hindrance to accessing cervical cancer screening services is consistent with other research carried out in rural regions (Belay et al, 2020). Bringing cervical cancer screening facilities closer to people is essential to reduce access costs. Other reasons cited included religious beliefs (11%) and insufficient time (15%). Shyness (1%), resulting from stigmatization, and pregnancy (1%) were the least mentioned causes. In contrast to the current study's findings, a study conducted by Dsousa et al, 2021 identified shyness as a barrier to cervical cancer screening uptake.

Participants' primary source of cervical cancer screening information was health care facilities. Friends, church, school, and community leadership were also sources of information on cervical cancer screening services.

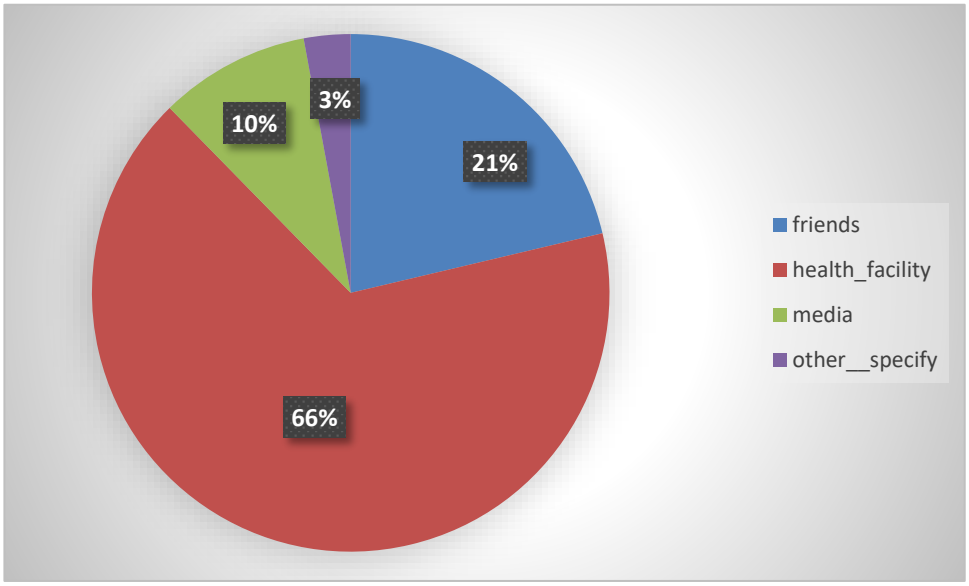


*Figure 4.* Source of Information on Cervical Cancer Screening

Only 10% of participants cited the media as a source of information. The study recognized other sources of information, such as schoolteachers, community leaders,

nongovernmental organizations, and politicians. It is crucial to involve all identified key stakeholders in promoting cervical cancer screening services. Almost 37% of participants traveled over 10 kilometers to obtain VIAC services from their nearest center. On the other hand, only about 5% of respondents reported traveling less than 1km to access VIAC services, as demonstrated in Figure 5.

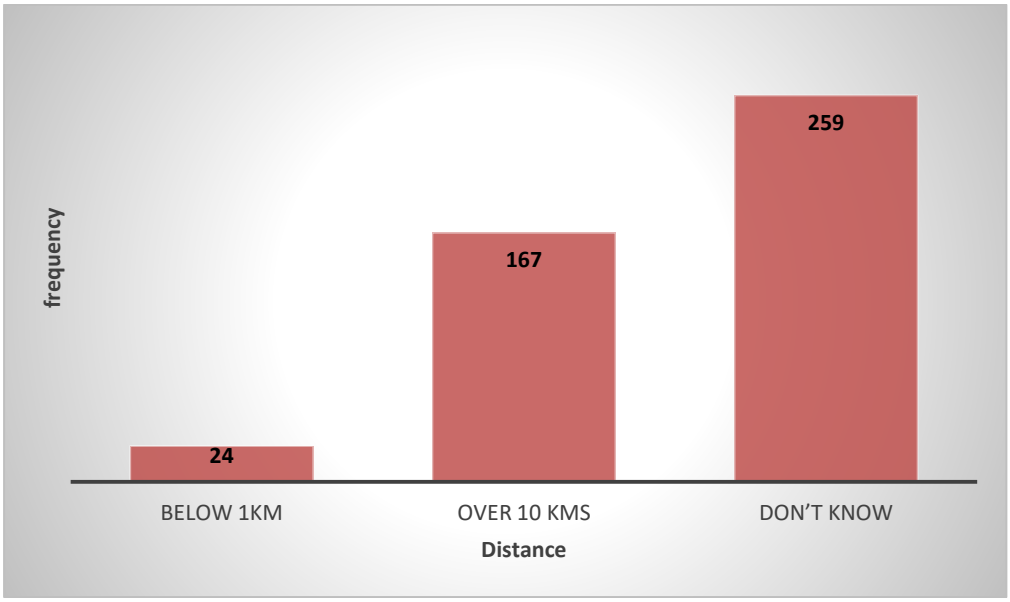


*Figure 5.* Distance to VIAC Center

Most respondents (57%) were unable to estimate the distance to their nearest VIAC center. They did not provide the information due to a lack of knowledge of the VIAC centers' existence, and in some instances, they were unable to estimate even if they knew where the VIAC center was located. One of the significant obstacles to adopting screening services is having to travel long distances (Bennet et al., 2018). The district has only six cervical cancer screening sites out of 30 locations, which is a limited number.

Figure 6 displays that most participants paid between 100RTGS (1 USD) and 500RTGS (5 USD) for traveling to their nearest VIAC center. Only 27% of participants stated that they did not have to pay for bus fare to reach their nearest VIAC center.

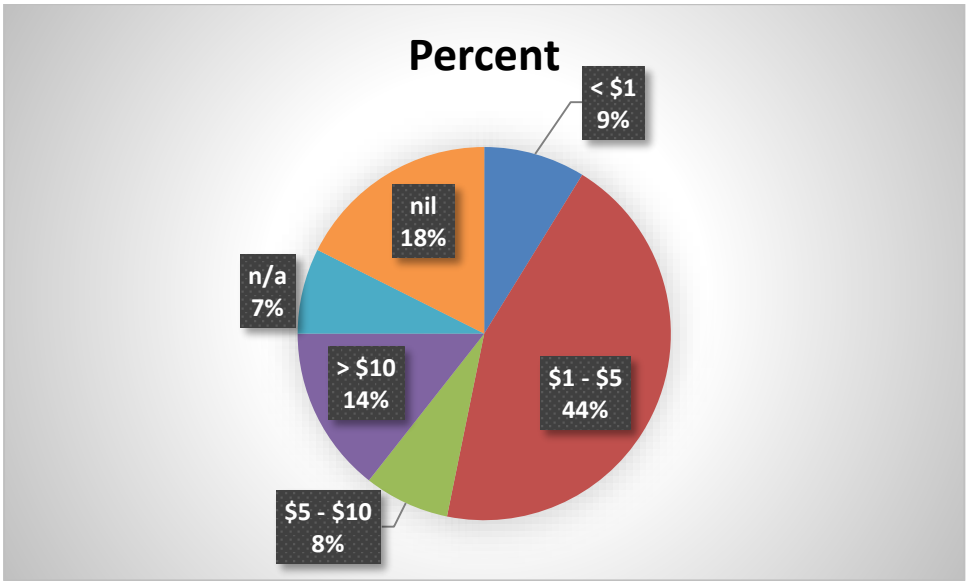


*Figure 6.* Transport Cost to VIAC Center

According to the study findings (Figure 6), less than half of the participants (44%) mentioned that VIAC outreach services were available in their community. Other participants (15%) did not know whether VIAC outreach services were available in their community, according to the study.

These findings concur with a study conducted by Padingani et al, (2018), which identified high costs of accessing health facilities as a barrier to the utilization of cervical cancer screening services. According to this study, women in rural areas have other commitments with their finances, which makes it difficult for them to prioritise paying transport fare to access cervical cancer screening. The situation is made worse by the fact that, most screened people will not be having any signs and

symptoms of the disease, which makes it difficult to prioritise seeking a cervical cancer screening service.

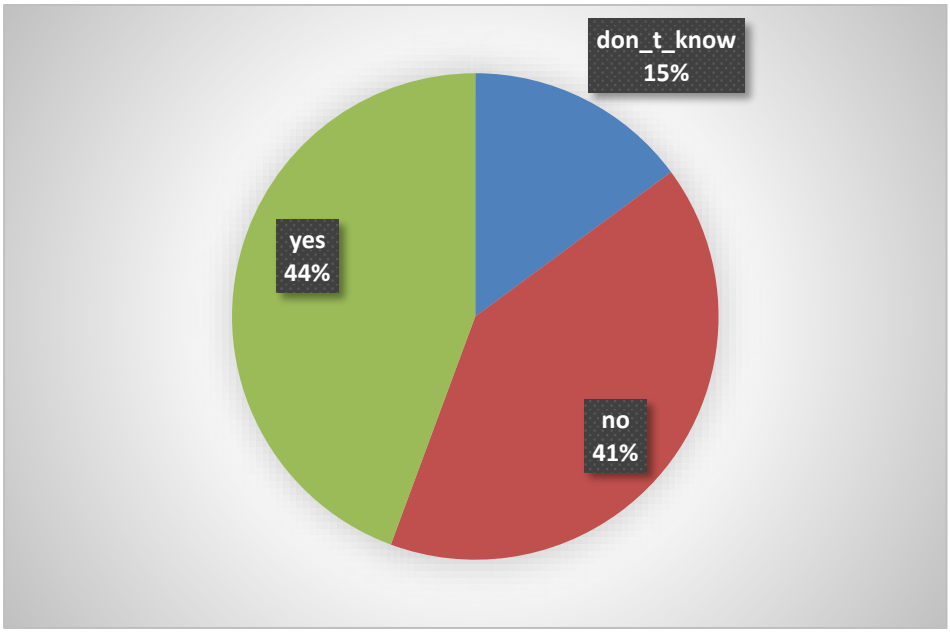


*Figure 7.* VIAC Outreach Services

Of the participants who shared that VIAC outreach services were available in their community, the majority (58%) stated that these activities were rarely conducted. Conversely, only 24% reported frequent to very frequent outreach activities.

Lack of knowledge on where to access the services is a clear indication that the cervical cancer screening message has not adequately reached the rural communities in Gutu district. It is very worrying to note that only 44% of the participants, confirmed the existence of VIAC outreach services. This finding calls for more robust approaches provide health education on cervical cancer screening.

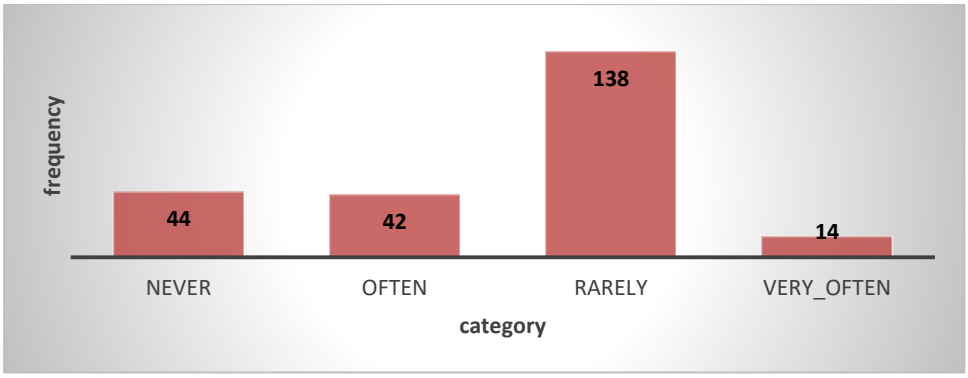

*Figure 8.* VIAC Outreach Frequency

Almost half of the participants (47%) could not tell how often outreach activities were carried out. Outreach programs help to close the gap in accessing services in remote communities. Considering the low uptake of cervical cancer screening services in the region, the limited outreach activities in the Gutu district are a significant cause for concern.

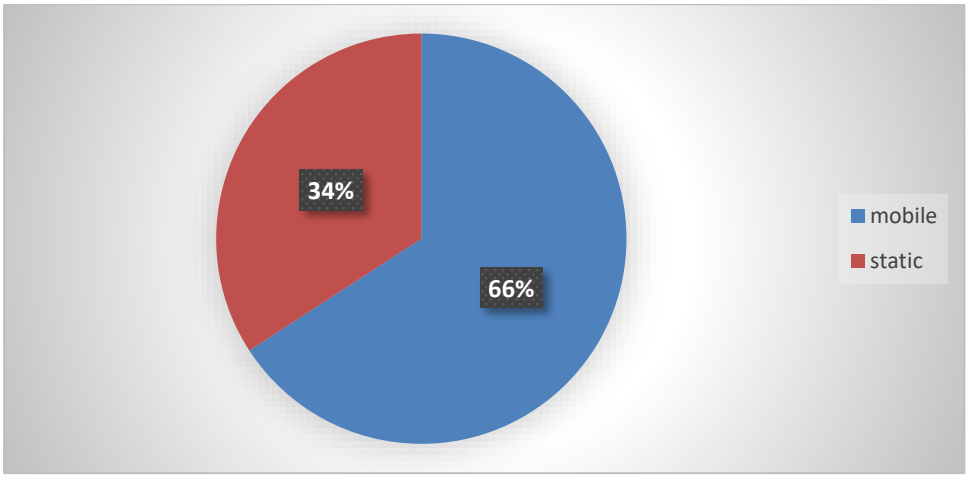

*Figure 9.* Cervical Cancer Screening Service Type Preference

In comparison with stationary screening sites, almost two-thirds of the participants favored mobile cervical cancer screening services. This outcome suggests that individuals prefer the service to be more accessible due to the need to reduce the cost of accessing screening services.

## Research Question Two

Knowledge of Cervical Cancer Screening in Rural Women. The study participants' knowledge and perceptions of health care workers' knowledge were evaluated. Participants were asked a series of questions to assess their knowledge of cervical cancer and screening services.

*Table 4.* Knowledge of Cervical Cancer Screening Services

| Variable | Category | Frequency | Percent |
|---|---|---|---|
| Knowledge of signs and symptoms | Yes | 220 | 49.5 |
| | No | 224 | 50.5 |
| Reasons for Cervical cancer screening | To check for cancer or early changes of cancer in the cervix | 281 | 63.3 |
| | To check for infections passed through sex | 71 | 16 |
| | Do not know | 91 | 20.5 |
| Risk groups | Do not know | 152 | 34.2 |
| | High risk | 163 | 36.7 |
| | Low risk | 129 | 29.1 |
| The seriousness of Cervical cancer | Do not know | 71 | 16 |
| | Less severe | 30 | 6.8 |
| | More severe | 265 | 59.7 |
| | Like others | 78 | 17.6 |
| Age recommended for cervical cancer screening | Do not know | 41 | 9.2 |
| | From 15 years if sexually active | 268 | 60.4 |
| | From 20 years and above | 98 | 22.1 |
| | From 25 years and above | 37 | 8.3 |
| Screening frequency | At least every 2 years for HIV-negative women | 64 | 14.4 |
| | At least every 3 years | 64 | 14.4 |
| | Once every 3 years | 1 | 0.2 |
| | At least every 5 years | 18 | 4.1 |
| | Do not know | 62 | 14 |
| | Once every year for HIV-positive women | 224 | 50.5 |
| | Other | 11 | 2.5 |

More than 70% of participants were confident that health care workers could answer their inquiries about cervical cancer screening at any time. This is a positive outcome as communities usually trust information obtained from their healthcare providers (Biddle et al., 2021). Only half of the study's participants correctly recognized the indications and symptoms of cervical cancer. Despite being one of the most prevalent cancers among women, rural women in the Gutu district have inadequate knowledge of the illness, according to the research (Lofters et al., 2017).

Most studies also assessed knowledge of Cervical Cancer Screening among eligible women by focusing on specific information about its benefits (Tapera et al, 2019). According to some studies, there is a high level of awareness and knowledge about cervical cancer screening (Jisa, 2021; Busingye, 2012; Kardian et al, 2020). This contradicts the study's findings, which indicate a knowledge gap among eligible women.

The results align with Wright et al.'s (2010) study that found a low adoption rate of cervical cancer screening services was because women had insufficient knowledge about cervical cancer and inadequate organization in providing these services.

Risk perception was very low among study participants, with only 36.7% indicating that they were at high risk of developing cervical cancer and 34.2% expressing no opinion. Other research has found that low perceived risk limits the use of screening services (Thomas et al, 2005). According to Opoku et al. (2016), 61.3% of women in Ghana do not believe they are at risk of cervical cancer. Participants in their study believed that Cervical Cancer was a disease of the elderly, which meant that young people would be at a lower risk.

The reasons for cervical cancer screening can influence program participation. According to the study, approximately 63% of participants were aware of the reasons for cervical cancer screening. Communities are unlikely to accept an intervention whose benefits are unclear. As a result, it is critical to educate communities about the benefits of getting screened for cervical cancer.

The research also found that while two-thirds of the participants regarded cervical cancer as a severe illness, almost 7% of the participants viewed it as a less serious one. When people do not consider a disease to be significant, they are less inclined to follow recommended preventative steps, such as getting screened.

The study also detected a lack of awareness regarding the recommended frequency of cervical cancer screening. Only 14% of participants accurately identified how often HIV-negative women should get screened for cervical cancer. The recommended screening frequency for HIV-positive women was correctly mentioned by half of the study participants. The disparity in knowledge based on HIV status may be since many organizations in the Gutu district provide HIV care services.

Integrating HIV treatment and care services with cervical cancer screening has raised awareness of the illness in the community. However, the results of this research do not concur with other Zimbabwean studies. For instance, Kuguyo et al. (2017) conducted a study in Zimbabwe that found that knowledge and understanding of cervical cancer were inadequate among all women, regardless of their HIV status.

### Research Question Three

Relationship between Selected Social Determinants and the Uptake of Cervical Cancer Screening Services in Gutu District.

Table 5 below displays the outcomes of evaluating the association between cervical cancer screening uptake and socio-demographic factors such as age, marital status, occupation, religion, and the highest level of education.

*Table 5.* Chi-Square Test Results for Association between Cervical Cancer Screening Uptake and Socio-Demographic Variables

| Variable | CCS uptake | | Chi-square value | p-value |
|---|---|---|---|---|
| | Yes | No | | |
| Age (years) | | | 36.6 | 0.000 |
| 10-20 | 9 | 27 | | |
| 20-30 | 41 | 69 | | |
| 30-40 | 67 | 68 | | |
| 40-50 | 73 | 39 | | |
| 50+ | 37 | 14 | | |
| Marital status | | | | |
| Single | 15 | 42 | 18.7 | 0.001 |
| Married | 157 | 138 | | |
| Separated | 13 | 12 | | |
| Widowed | 32 | 21 | | |
| Divorced | 10 | 4 | | |
| Highest level of education | | | 15.7 | 0.006 |
| Certificate | 131 | 117 | | |
| Diploma | 30 | 12 | | |
| Degree | 11 | 8 | | |
| Secondary | 17 | 30 | | |
| Primary | 35 | 49 | | |
| None | 3 | 1 | | |
| Occupation | | | 9.05 | 0.107 |
| Student | 10 | 14 | | |
| Civil servant | 36 | 18 | | |
| Housewife | 119 | 124 | | |
| Professional | 8 | 3 | | |
| Trading | 10 | 12 | | |
| Self employed | 44 | 46 | | |
| Religion | | | 3.97 | 0.057 |
| Christian | 225 | 209 | | |
| Moslem | 2 | 8 | | |
| Other | 0 | 0 | | |

At the 0.05 significance level, age (0.000), marital status (0.001), and highest level of education (0.006) had a significant correlation with cervical cancer screening status. However, occupation (0.107) and religion (0.057) had no significant link with

cervical cancer screening status. A study conducted by Behbakht, Lynch, Teal, Degeest, and Massad (2004) found that age, marital status, and education were related to the utilization of cervical cancer screening services.

### Association between Cervical Cancer Screening Status and Selected Variables (Access, Risk Perception and Socio-Cultural)

Table 6 displays the outcomes of assessing the relationship between cervical cancer screening uptake and several access variables, perceived risk, spousal support, and the perceived severity of cervical cancer.

*Table 6.* Association of Cervical Cancer and Independent Variables

| Variable | Category | CCS Status | | | p-value |
|---|---|---|---|---|---|
| | | Yes | No | Total | |
| Distance to VIAC center | <1km | 12 | 12 | 24 | 0.000 |
| | 1-5km | 60 | 37 | 97 | |
| | 5-10km | 59 | 63 | 122 | |
| | Over 10km | 92 | 75 | 167 | |
| | Do not know | 4 | 30 | 34 | |
| Cost to reach VIAC center | Nil | 40 | 38 | 78 | 0.002 |
| | <$1USD | 26 | 13 | 39 | |
| | $1USD-$5USD | 92 | 105 | 197 | |
| | $5USD-$10USD | 17 | 16 | 33 | |
| | >$10USD | 43 | 21 | 64 | |
| | N/a | 9 | 24 | 33 | |
| Existence of VIAC outreach | Yes | 140 | 57 | 197 | 0.000 |
| | No | 73 | 108 | 181 | |
| | Do not know | 14 | 52 | 66 | |
| Risk judgment | Do not know | 48 | 104 | 152 | 0.000 |
| | High risk | 138 | 87 | 225 | |
| | Low risk | 41 | 26 | 67 | |
| The seriousness of Cervical Cancer | Do not know | 18 | 53 | 71 | 0.000 |
| | Like others | 29 | 49 | 78 | |
| | More severe | 168 | 97 | 265 | |
| | Less severe | 12 | 18 | 30 | |
| Spouse support | Yes | 161 | 116 | 277 | 0.000 |
| | No | 8 | 31 | 39 | |
| | N/a | 58 | 80 | 128 | |

The outcomes demonstrated a significant correlation between cervical cancer screening status and all selected variables, including spousal support (0.000), risk assessment (0.000), and perception of the severity of cervical cancer (0.000). The research also discovered that cervical cancer screening status was linked to access variables such as the distance to VIAC center (0.000), cost to VIAC center (0.002), and existence of VIAC outreach (0.000). Our results agree with Burns et al.'s (2011) findings that spousal support and considering cervical cancer a severe illness relates to an increase in utilizing cervical cancer screening services.

According to Nyamambi et al., 2020, the transportation, distance, and time required to reach service providers of Cervical Cancer screening adds an additional cost to the clients. This additional cost makes it inaccessible to low-income communities, which explains the significant association between distance and Cervical Cancer screening uptake status.

### Research Question Four

Factors Influencing Cervical Cancer Screening Services Among Rural Women in the Gutu district.

The research utilized logistic regression analysis to examine how factors such as age, marital status, education, occupation, religion, parity, distance, cost, outreach existence, and risk perception influenced the probability of participants getting screened for cervical cancer.

*Table 7.* Association Between Cervical Cancer Screening Uptake and Selected Access Variables, Risk Perception, Spouse Support and Perception on Seriousness of Cervical Cancer Diseases

| Variable | Constant | P value | AOR | 95.0% CI | |
|---|---|---|---|---|---|
| | | | | Lower | Upper |
| Age (50+) | - | 0.000 | - | - | - |
| 10-20 years | 2.876 | 0.000 | 17.738 | 3.924 | 80.174 |
| 20 -30 years | 2.425 | 0.000 | 11.304 | 3.773 | 33.87 |
| 30-40 years | 1.652 | 0.001 | 5.219 | 1.975 | 13.789 |
| 40-50 years | 0.732 | 0.129 | 2.08 | 0.808 | 5.356 |
| marital status (Divorced) | - | 0.363 | - | - | - |
| Single | 1.797 | 0.072 | 6.032 | 0.852 | 42.713 |
| Married | 0.925 | 0.372 | 2.522 | 0.331 | 19.212 |
| Separated | 1.219 | 0.235 | 3.385 | 0.453 | 25.319 |
| Widowed | 1.297 | 0.189 | 3.658 | 0.528 | 25.336 |
| Education (None) | - | 0.588 | - | - | - |
| Certificate | -0.434 | 0.441 | 0.648 | 0.215 | 1.955 |
| Diploma | -0.144 | 0.866 | 0.866 | 0.163 | 4.592 |
| Degree | 0.273 | 0.574 | 1.314 | 0.507 | 3.408 |
| Secondary | 0.574 | 0.114 | 1.775 | 0.871 | 3.618 |
| Primary | -1.03 | 0.55 | 0.357 | 0.012 | 10.423 |
| Occupation (Self-employed) | - | 0.473 | - | - | - |
| Student | -0.904 | 0.24 | 0.405 | 0.09 | 1.831 |
| Civil servant | 0.099 | 0.875 | 1.104 | 0.324 | 3.757 |
| Housewife | 0.282 | 0.502 | 1.326 | 0.581 | 3.027 |
| Professional | -0.481 | 0.602 | 0.618 | 0.101 | 3.768 |
| Trading | 0.862 | 0.184 | 2.368 | 0.664 | 8.447 |
| Muslim | -0.506 | 0.622 | 0.603 | 0.081 | 4.515 |
| Parity | -0.069 | 0.452 | 0.933 | 0.779 | 1.118 |
| Distance (<1km) | - | 0.026 | - | - | - |
| Do not know | -1.334 | 0.121 | 0.263 | 0.049 | 1.421 |
| 1-5km | -1.927 | 0.009 | 0.146 | 0.034 | 0.622 |
| 5-10km | -1.591 | 0.029 | 0.204 | 0.049 | 0.853 |
| >10km | -1.381 | 0.053 | 0.251 | 0.062 | 1.019 |
| Cost (N/a) | - | 0.339 | - | - | - |
| $Nil | -0.507 | 0.465 | 0.602 | 0.154 | 2.347 |
| <$1 | -1.227 | 0.105 | 0.293 | 0.066 | 1.295 |
| $1-$5 | -0.169 | 0.795 | 0.845 | 0.236 | 3.028 |
| $5-$10 | -0.115 | 0.883 | 0.891 | 0.192 | 4.144 |
| >$10 | -0.6 | 0.427 | 0.549 | 0.125 | 2.416 |
| Outreach existence (do not know) | - | 0.000 | - | - | - |
| Yes | -2.027 | 0.000 | 0.132 | 0.058 | 0.301 |
| No | -0.625 | 0.151 | 0.535 | 0.228 | 1.256 |
| Risk judgment (Low risk) | - | 0.171 | - | - | - |
| Do not know | 0.605 | 0.143 | 1.831 | 0.816 | 4.109 |

*Table continues*

*Table 7 (continued).* Association Between Cervical Cancer Screening Uptake and Selected Access Variables, Risk Perception, Spouse Support and Perception on Seriousness of Cervical Cancer Diseases

| Variable | Constant | P value | AOR | 95.0% CI | |
|---|---|---|---|---|---|
| | | | | Lower | Upper |
| High risk | 0.068 | 0.867 | 1.071 | 0.481 | 2.385 |
| seriousness perception (Less severe) | - | 0.01 | - | - | - |
| Do not know | 0.22 | 0.728 | 1.246 | 0.36 | 4.304 |
| Like others | -0.347 | 0.554 | 0.707 | 0.224 | 2.23 |
| More severe | -1.012 | 0.054 | 0.363 | 0.13 | 1.019 |
| Spouse support (N/a) | - | 0.012 | - | - | - |
| Yes | -0.216 | 0.686 | 0.806 | 0.283 | 2.292 |
| No | 1.479 | 0.036 | 4.39 | 1.099 | 17.527 |

Based on the results, age (0.000), outreach existence (0.000), distance to VIAC center (0.026), perception of cervical cancer's severity (0.010), and spousal support (0.012) significantly influenced the model. However, marital status (0.363), education (0.588), occupation (0.473), religion (0.622), parity (0.462), cost (0.339), and risk assessment (0.171) did not have a significant impact.

The results also revealed that participants who traveled less than 1km to the nearest cervical cancer screening center were six times more likely to undergo cervical cancer screening than those who traveled between 1 and 5 kilometers. These outcomes are comparable to a study conducted on rural women in India, which discovered that distance, age, and perceived risk predicted the utilization of cervical cancer screening services (Jisa, 2021). To ensure accessibility, cervical cancer screening services should be located within a reasonable distance, so individuals do not have to travel far to obtain them (Thomas et al., 2005).

Kokuro et al, 2017 agree with the finding that age is significantly associated with the use of Cervical Cancer Screening services. Gender was also associated with most health practices in their study, including cervical cancer screening, which was not the case with our findings.

**Research Question Five:**

Perceptions of Rural Women on Cervical Cancer Screening in the Gutu district.

The study used descriptive analysis to assess participants' perceptions of cervical cancer screening.

*Table 8.* Cervical Cancer Screening Perceptions

| Perception | Strongly disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly agree (%) |
|---|---|---|---|---|---|
| Cervical cancer screening gives you a sense of control | 13(2.9) | 27(6.1) | 67(15.1) | 224(50.5) | 113(25.2) |
| It is worth doing cervical cancer screening | 12(4.5) | 22(5.0) | 38(8.6) | 211(47.5) | 161(36.3) |
| Cervical cancer screening detects pre-cancerous cells before symptoms | 8(3.6) | 23(5.2) | 100(22.5) | 212(47.7) | 101(22.7) |
| Cervical cancer screening is very painful | 83(18.7) | 152(34.2) | 119(26.8) | 73(16.4) | 17(3.8) |
| It is embarrassing to have cervical screening<br>The screening is not necessary if there are no signs and symptoms | 106(23.9) | 216(48.8) | 53(11.9) | 58(13.1) | 11(2.5) |
| I am afraid to take the cancer screening test | 110(24.8) | 224(50.5) | 18(4.1) | 72(16.2) | 20(4.5) |
| I am not free to talk about cervical cancer | 118(26.6) | 225(50.7) | 26(5.9) | 59(13.3) | 16(3.6) |
| I will be worried if I have early signs and symptoms of cervical cancer. | 47(10.6) | 108(24.3) | 76(17.1) | 170(38.3) | 43(9.7) |
| It is difficult to go to a cervical cancer clinic | 52(11.7) | 156(35.1) | 49(11.0) | 159(35.8) | 28(6.3) |
| Cervical cancer is a curse from God | 189(42.6) | 168(37.8) | 61(13.7) | 14(3.2) | 12(2.7) |
| If a young woman goes for VIAC everyone will think she is having sex | 75(16.9) | 140(31.5) | 34(7.7) | 140(31.5) | 55(12.4) |

About three-quarters of the participants (75.7%) agreed that undergoing cervical cancer screening gives them a sense of control, and around half (47.5%) believed that it is worth getting screened for cervical cancer. However, almost half of the participants (48.4%) thought that if a young woman went for VIAC, everyone would assume she was sexually active. Lofters et al.'s (2017) research found that individuals who view cervical cancer as a severe illness are more likely to utilize cervical cancer screening services.

Half of the participants, in this study, were afraid of getting screened for cervical cancer, and 20.4% thought it was very painful. It is critical to eliminate myths and misunderstandings about cervical cancer screening among rural women. The majority (70.4%) believed that cervical cancer screening could identify pre-cancerous cells before any symptoms occur. More than half of the participants (52.9%) did not believe that cervical cancer screening is overwhelmingly painful.

About three quarters of the participants disagreed with the statement that screening for cervical cancer is not required if there are no symptoms. Cervical cancer is diagnosed early when cases are found before symptoms manifest. Increasing community awareness of the advantages of early detection should be a top priority in health education. Less than 20% of the participants in the study were not allowed to discuss cervical cancer screening, according to the study's other findings. The most remote communities still find it difficult to discuss concerns related to sexual and reproductive health. Participants noted that the sexual character of the condition makes it difficult for people to freely discuss about it.

About half of the participants concurred that they would be concerned if they experienced cervical cancer's early signs and symptoms. This was typical of those who perceived cervical cancer as a highly serious illness. Participants expressed

concern that if their early cervical cancer symptoms and signs were discovered, they would pass away or face stigma.

Some participants (5%) claimed that cervical cancer is a divine punishment. This misconception causes stigma and prevents some religious groups from accepting the cervical cancer screening program. It is challenging for the cervical cancer screening program to reach all the targeted areas because to the link of cervical cancer with adultery and immorality. Also, 46.8% of the participants said it was challenging to visit the clinic for a cervical cancer screening.

Several participants held the opinion that it was preferable to be ignorant of the disease's presence because doing so would make them feel more stressed. All the studies emphasize how crucial it is to design cervical cancer screening programs in a way that meets community concerns to maximize program adoption

# CHAPTER 5

# SUMMARY, CONCLUSION, AND RECOMMENDATIONS

## Summary

This study investigated the causes of rural women in the Gutu district's low use of cervical cancer screening programs. The results of this study show that spousal support, age, the existence of outreach programs, travel time to the VIAC center, perception of the seriousness of cervical cancer, and distance all had a significant impact on cervical cancer screening. Distance from the VIAC facility and reluctance to be screened were the two biggest barriers to cervical cancer screening. Access to cervical cancer screening programs was hindered, among other things, by religious convictions and a lack of time.

According to the current study, there was little coverage of outreach initiatives aimed at rural women in the Gutu district. This statistic explains why women must travel great distances to get services for cervical cancer screening. Travel expenses become a barrier that must be removed to enhance the uptake of cervical cancer screening services in rural Zimbabwe, where most women have poor incomes. This study's analysis further revealed the importance of male engagement in the movement for cervical cancer screening by demonstrating that women who had support from their spouses were more inclined to undergo the procedure.

The main information source for cervical cancer screening services was health facilities. To enhance the avenues via which messages about cervical cancer screening can reach communities, community-based healthcare personnel must be equipped

with knowledge about the procedure. Intensifying risk communication will contribute to improving rural women's perceptions of risk, which will boost their use of screening programs.

## Conclusion

According to the study's findings, the Gutu district does not have a lot of access to cervical cancer screening programs. The target audience for the service must be made more accessible. The study also found that rural women had a lack of awareness about cervical cancer, which contributed to their low-risk perception, fear of the unknown, and resistance to getting screened. There is a need to design programs that address the cultural obstacles as cultural beliefs were another barrier to the acceptance of cervical cancer screening services in the Gutu district. To boost screening uptake, risk communication needs to be strengthened to eliminate myths and misconceptions about cervical cancer screening.

## Recommendations

The following recommendations are made for the attention of responsible authorities

### Ministry of Health and Childcare

1. Establish more cervical cancer screening centers and outreach sites in rural areas to facilitate easy access to the service for women.
2. Strengthen risk communication campaigns to raise awareness among women about the advantages of undergoing cervical cancer screening tests.
3. Develop health programs that focus on cervical cancer screening for rural women, which should address and eliminate any false beliefs or misunderstandings surrounding the screening process.

## Opportunities for Further Research

Further national-level research is necessary to gather more information about the adoption of cervical cancer screening programs. These studies should also explore why women may be reluctant to undergo cervical cancer screenin.

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# APPENDICIES

APPENDIX A

INFORMED CONSENT

**Student researcher**: Moyo Theresa
**Title of project**: Factors influencing low utilization of cervical cancer screening services in the Gutu district (Zimbabwe**)**
I am taking this study as a requirement of the Master in Public Health degree program that I am undertaking at the Adventist University of Africa. I am asking for your voluntary participation in my research work. Please read the following information about the research and if you would like to participate, please sign in the appropriate box below.
**Purpose of the research project**: To identify reasons for the low uptake of cervical cancer screening services and come up with recommendations that may help in improving the service.
**Time required for participation**: You will need roughly 20 to 30 minutes to answer the questionnaire
**Risks**: This research has no conspicuous risks, yet you may encounter some discomfort from the personal questions being inquired
**Benefits**: Will be of getting more information about screening services offered in the Gutu district and knowledge
**How confidentiality will be maintained**: Any information that is given by you will be viewed as private, and it will be accessible just to the researcher. Information you give will not be discharged without your consent. After the study, it will be destroyed. For anonymity purposes, data forms and items will be assigned numbers instead of identifying information. Data storage will be stored where there will be passwords to ensure the security of information for only authorized persons.
If you have any questions about this study, feel free to contact me at (Phone +263773003856). Email moyot@aua.ac.ke
**Voluntary participation**: Participation in this study is completely voluntary. If you decide not to participate there will not be any negative consequences. Please be aware that if you decide to participate, you may stop participating at any time and you may decide not to answer any specific question.
By signing this form, I am attesting that I have read and understand the information above, and I freely give my consent/assent to participate or permission for my child to participate.
**Adult informed consent:**
Date reviewed _____
Signed: _____
**Printed Name (Optional): _____**

APPENDIX B

QUESTIONNAIRE

**SECTION A: PERSONAL INFORMATION**

**i. Age** (Tick as appropriate)

Between 10 – 20yrs [], 20 – 30yrs [], 30 – 40yrs [], 40 – 50yrs [] Above 50yrs []

**ii. Marital status**

Single [] Married [] Separated [] Widowed [] Divorced []

**iii. Highest level of education**

Certificate [] Diploma [] University [] Masters [] Other (specify)…….

**iv. Occupation**

Student [] Civil servant [] Housewife [] Professional []

Trading [] Self-employed []

**v. What is your religion?**

Christian [] Muslim [] Hindu [] Others (specify) …….

**vi. Number of children you have given birth to**? …….

**SECTION B: ACCESS TO VIAC CENTER**

**I. Have you received cervical cancer screening** yes [] no []?

**II.** If no,

why……

……

…….

**III. Where did you get information on cervical cancer screening?**

Health facility [] media [] friends [] other [], specify

…….

**IV. How far is the nearest VIAC center from your home/ residence? (Tick as appropriate) Below 1**

km [] 1 – 5 km [] 5 – 10 km [] Over 10 km [] Do not know []

**V. How much does it cost you to reach the nearest VIAC center?**

Nil [] <$1 [] $1 – $5 [] $5- $10 above $10 [] N/A []

**VI. Do health facilities carry out outreach programs on cervical cancer screening**?

Yes [] No []

**VII. If yes, how often?**

Very often [] Often [] Rarely [] Never []

**VIII. Does distance affect your access to cervical cancer screening services?**

Yes [] No []

**IX. Would you prefer mobile cervical cancer screening services or static facilities?**

Mobile [] Static []

**SECTION C: KNOWLEDGE**

**I. Are health workers able to answer all your questions regarding cervical cancer screening anytime (as and when you need clarification)?**

Yes [] No []

**II. What are the signs/ symptoms of cervical cancer?**

……

……

……

……

…….

**III. Why is cervical cancer screening done on women?**

Check for cancer or early changes of cancer in the cervix []

Check for infections passed on through sex []

Don ‘t knows []

**IV. How would you judge your risk of developing cervical cancer?**

High risk of developing cancer [] Low risk of developing cancer [] Don ‘t knows []

**V. How serious is cervical cancer compared to other forms of cancer?**

More severe [] Similar to others [] Less severe [] Don ‘t knows []

**VI. At what age are women recommended to come for cervical cancer screening?**

From 15 years if sexually active []

From 20 years and above []

From 25 and above []

**VII. How often are women recommended to come for cervical cancer screening tests?**

Once every year for HIV-positive women []

At least every 2 years for HIV-negative women []

At least every 3 years []

At least every 5 years []

Other…….

Specify…….

**VIII. Are the health workers able to perform cervical cancer screening?**

Yes [] No [] Don ‘t knows []

**SECTION D: SOCIO-CULTURAL FACTORS**

**I. Do you know the causes of cervical cancer?**

Yes [] No []

**II. If yes, what are some of the causes?**

……

……

……....

**III. Do cultural beliefs hinder you from going for cervical cancer screening?**

Yes [] No []

**IV. If yes, what are some of the beliefs?**

……

**V. Does cigarette smoking and alcohol intake increase the risk of developing cervical cancer?**

Yes [] No [] don ‘t knows []

**VI. If yes, please explain how?**

……

**VII. Is your household aware of cervical cancer screening?**

Yes [] No [] don ‘t knows []

**VIII. Does your spouse support you in accessing health services?**

Yes [] No [] Not applicable []

**IX. Does the religious affiliation you belong to encourage women to go for cancer screening?**

Yes [] No []

**X. If yes, how do they encourage it?**

……

**SECTION E: PERCEPTIONS**

To what extent do you agree with the following statements?

Use a scale of 1-5 were.

1- Strongly Disagree, 2 - Disagree, 3 - Neutral, 4. Agree, 5- Strongly Agree.

| **Perception** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Cervical cancer screening gives you a sense of control | | | | | |
| It is worth doing cervical cancer screening | | | | | |
| Cervical cancer screening detects pre-cancerous cells before symptoms | | | | | |
| Cervical cancer screening is very painful | | | | | |
| It is embarrassing to have cervical screening<br>The screening is not necessary if there are no signs and symptoms | | | | | |
| I am afraid to take the cancer screening test | | | | | |
| I am not free to talk about cervical cancer | | | | | |
| I will be worried if I have early signs and symptoms of cervical cancer. | | | | | |
| It is difficult to go to a cervical cancer clinic | | | | | |
| Cervical cancer is a curse from God | | | | | |
| If a young woman goes for VIAC everyone will think she is having sex | | | | | |