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BARRIERS AND FACILITATORS OF CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN AGED 18 TO 49 YEARS AT VICTORIA CHITEPO PROVINCIAL HOSPITAL, MUTARE, ZIMBABWE, 2025

BY

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Abstract

Cervical cancer is the fourth most common cancer in women worldwide and overall, cervical cancer ranks as the second most common cancer in Africa and is responsible for over one-fifth of all female cancers in the continent according to Global Cancer Observatory (GLOBOCAN) estimates for 2018. Cervical cancer is the most frequently occurring cancer in women of all races and ages in Zimbabwe, with a burden of 19%. This study sought to establish the facilitators and barriers affecting uptake of cervical cancer screening among women aged between 19 and 49 seeking services at Victoria Chitepo Provincial Hospital (VCPH) in Mutare in February 2025. Data from VCPH showed that cervical cancer screening of all eligible women aged 18 to 49 years was at 34% for the period January to June 2024, which is low against a WHO target of 70%. A mixed methods cross-sectional study was conducted at VCPH, a provincial referral hospital that offers cervical cancer screening services in Mutare urban. The source population of this study was female patients aged 18 to 49 years accessing services at VCPH. A total sample size of 158 participants was used for this study. Convenience sampling of the participants was done at VCPH. 16 consenting purposively sampled staff members were interviewed as key informants to gain in-depth insights on the facilitators and barriers to cervical cancer screening. Data was collected using an interviewer administered structured questionnaire and a key informant interview guide was used to conduct key informant interviews. Data was analysed using SPSS version 28. About 90.1 % of participants had heard of cervical cancer. 60.1% of participants had ever been screened for cervical cancer. The highest predictor of cervical cancer screening was having heard about VIAC or other methods of cervical cancer screening, with an odds ratio of 4.2 (95% CI [1.9, 8.9] p<0.001), and place of residence (OR= 1.9, CI [1.2,3.0] p=0.005). High perceived benefit of cervical cancer screening (OR=0.4, CI [0.2,0.7] p<0.001), and perceived susceptibility to cervical cancer, (OR= 0.5 CI [0.3,0.8] p<0.001) were significant behavioral factors affecting cervical cancer screening uptake. The sociodemographic predictors of cervical cancer screening were employment status (OR= 0.4, CI [0.3, 0.8] p = 0.005), and level of income (OR=0.6, CI [0.4,1.0] p=0.055). Key barriers to cervical cancer screening included lack of knowledge, the belief that cervical cancer screening is painful (OR=0.3, CI [0.1; 0.9] p<0.001), and the notion the cervical cancer screening is expensive (OR=0.1 CI [0.1; 0.2] p<0.001). Perceived benefit of cervical cancer screening, and knowledge of cervical cancer screening methods were significant facilitators of cervical cancer screening, therefore there is need to develop educational programs teaching women on the importance of cervical cancer screening and addressing myths and misconceptions to significantly improve cervical cancer screening uptake in Mutare.

Key words: Cervical cancer; Cervical cancer screening; Uptake; Knowledge; Victoria Chitepo Provincial Hospital, Mutare

Declaration page

I declare that this research is my original work except where sources have been cited and acknowledged. The work has never been submitted, nor will it ever be submitted to another university for the award of a degree.

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Dedication

I dedicate this study to my parents. I thank you for your unwavering support.

List of acronyms and abbreviations

AIDS   Acquired Immune Deficiency Syndrome

AGYW   Adolescent Girls and Young Women

ART   Anti-Retroviral Therapy

CDC   Center for Disease Control

DNA   De-Oxyribo Nucleic Acid

FCH   Family Child Health Department.

FGD   Focus Group Discussion.

HBM   Health Belief Model

HIV   Human Immune Deficiency Syndrome

HPV   Human Papilloma Virus

IEC   Information, Education and Communication.

LBC   Liquid Based Cytology

NGO   Non-Governmental Organisation.

NSC   New Start Center

SIC   Sister in Charge

SSA   Sub Saharan Africa

STI   Sexually transmitted Infection

UNAIDS   The Joint United Nations Programme on HIV/AIDS

W.H.O   World health Organisation

WLHIV   Women Living with HIV

VCPH   Victoria Chitepo Provincial Hospital

VIAC   Visual Inspection with Acetic acid and Cervicography

ZDHS   Zimbabwe Demographic and Health Survey (ZDHS)

Definition of key terms

The cervix	is the lower part of the uterus that connects to the vagina.
Cervical cancer	is a growth of malignant cells that starts in the cervix.
Cervical cancer screening	refers to various procedures and tests done to find precancerous cervical cell changes, when treatment can prevent cervical cancer from developing.
HIV	**Human immunodeficiency virus** is a virus that attacks cells that help the body fight infection, making a person more vulnerable to other infections and diseases.
HDI	The **Human Development Index (HDI)** is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living.

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CHAPTER 1 INTRODUCTION

1.1 Introduction

Cervical cancer is the fourth most common cancer in women worldwide and overall, cervical cancer ranks as the second most common cancer in Africa and is responsible for over one-fifth of all female cancers in the continent according to Global Cancer Observatory (GLOBOCAN) estimates for 2018 (Arbyn et al., 2020). Globally in 2020, there were an estimated 604 127 cervical cancer cases and 341 831 deaths (Bruni et al., 2022). Cervical cancer is a significant cause of cancer-related mortality for women living in Sub-Saharan Africa (SSA) and in 2013, 39 out of 48 countries, classified as part of SSA region, identified cervical cancer as the most common cause of cancer-related death for women, followed by breast cancer (Fitzmaurice et al., 2015).

Cervical cancer is the most frequently occurring cancer in women of all races and ages in Zimbabwe, with a burden of 19% (Chokunonga et al., 2014). The Zimbabwe national Cancer Registry shows that cervical cancer is the most frequently occurring cancer among Zimbabweans of all races in 2016 (18%). It is estimated that 2270 women are diagnosed with cervical cancer in Zimbabwe annually and a mortality rate of 64% has been recorded (Kuguyo et al., 2017). Among countries in Southern Africa, Zimbabwe carries the highest burden, with an age-standardized incidence rate of 62 per 100,000 women (Isabirye et al., 2022). This is further exacerbated by the fact that Zimbabwe has a high prevalence of HIV of 10.5% as of 2023 (UNAIDS 2023 HIV Estimates). HIV increase the risk of cervical cancer, with a study by Stelzle et al. (2022), showing that the pooled risk of cervical cancer was increased in women living with HIV. Globally, 5·8% of new cervical cancer cases in 2018 were diagnosed in women living with HIV and 4·9% were attributable to HIV infection. Southern Africa

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and eastern Africa were the most affected regions, with 63·8% of women with cervical cancer living with HIV in Southern Africa (Stelzle et al., 2022). The HIV prevalence in women aged 15 to 49 in Zimbabwe is higher than that of the general population and is estimated at 13% (UNAIDS 2023). This puts women of childbearing age at a high risk of morbidity and mortality as a result of cervical cancer. However, cervical cancer is preventable and can be detected at early stages through timely screening.

According to World Health Organisation (WHO), there are four basic components of cervical cancer control, which encompass: primary prevention, early detection through increased awareness and organised cervical cancer screening programme, diagnosis and treatment and palliative care for advanced disease. Cervical cancer can be significantly reduced through the implementation of effective screening programmes. The main methods used for cervical cancer screening in Zimbabwe are Visual Inspection with Acetic acid and Cervicography (VIAC), Pap smear cytology, Human Papilloma Virus (HPV) DNA screening and Liquid Based Cytology (LBC). In Zimbabwe, VIAC is the most commonly used screening method for cervical cancer, and it is accessible starting at the primary healthcare level. Cervical cancer screening services have also been integrated with HIV/AIDS services in health facilities across the country as HIV positive women are at a high risk of getting cervical cancer (Kuguyo et al., 2017). Cervical cancer screening is an effective prevention mechanism, with one study demonstrating that in settings that can support 5-yearly HPV screening and achieve coverage rates of 70% for ages 30–50 years would experience a 50% or greater reduction in cervical cancer incidence and a 60% or greater reduction in cervical cancer mortality (Simms et al., 2023).Despite the improved accessibility of cervical cancer screening services, uptake of cervical cancer remains very low among women in Zimbabwe. According to a 2019 study conducted in Harare by Tapera

(2019), only 29% of women interviewed reported ever having been screened for cervical cancer. Another study done in rural Chegutu shows even lower rates of cervical cancer screening, with about 5.8% of women who had undergone screening (Nyamambi et al., 2020).

1.2 Background to the Study

Cervical cancer screening rates among women in Zimbabwe are generally low, though they are notably much lower in rural areas as compared to urban areas. Tapera (2019), found cervical cancer screening rate of 29% among women in an urban setting, while a study in a rural setting by Fitzpatrick et al. (2019) showed that most women (95.1%) had never been screened for cervical cancer. The Zimbabwe Cervical Cancer Prevention and Control strategy (2016- 2020) has set a cervical cancer screening target of 50% by 2020, and the nation is significantly lagging behind this target. The WHO Global Strategy towards elimination of cervical cancer seeks to ensure that 90% of girls are vaccinated against the HPV infection by age 15 by 2030. It also seeks to ensure that 70% of women are screened with a high-performance test by 35 years of age and again by 45 years of age while 90% of women identified with cervical disease receive treatment.

1.2.1 Statement of the Problem

Zimbabwe is faced with a high morbidity and mortality due to cervical cancer. There is need to intensify prevention efforts against cervical cancer, and this includes strengthening cervical cancer screening services. In Zimbabwe, cervical cancer screening is offered routinely at out-patient, ART, and maternal and child health departments and is free of charge. Despite the accessibility of cervical cancer screening services, there is poor uptake of cervical cancer screening among women in

Zimbabwe (Nyamambi et al., 2020; Tapera, 2019). Cervical cancer screening is even lower in Manicaland (6%) as compared to the rest of the country (ZDHS, 2015).

This study sought to establish the facilitators and barriers affecting uptake of cervical cancer screening among women aged between 19 and 49 seeking services at Victoria Chitepo Provincial Hospital (VCPH) in Mutare.

Data from VCPH shows that cervical cancer screening of all eligible women aged 18 to 49 years was low for the period January to June 2024. A cervical cancer screening coverage of 34% was found at VCPH for the age group under consideration. The cervical cancer screening coverage of 34% is much lower than the recommended 70%, which leads to concerns about raised morbidity and mortality due to cervical cancer.

It is on this background that I conducted a study looking into the barriers and facilitators to cervical cancer screening for women accessing services at VCPH, Mutare. The evidence that was generated from this study will help to contribute to formulation of strategies to improve cervical cancer screening coverage in both HIV positive and HIV negative women.

Table 1:VCPH Cervical cancer screening statistics

Facility	VCPH
Total women accessing services.	5643
Total women eligible for cervical cancer screening.	2822
Total women screened for cervical cancer.	961
Percentage screening coverage.	34%

1.3 Research Objectives

1.3.1 Broad Objective

The broad research objective of the study was to identify the barriers and facilitators of cervical cancer screening among women aged between 18 and 49 seeking services at VCPH, Mutare from January to February 2025.

1.3.2 Specific Objectives

1. To determine the socio-demographic characteristics related to uptake of cervical cancer screening services by women seeking services at VCPH, Mutare from January to February 2025.

2. To estimate the proportion of women aged between 18 and 49 seeking services at VCPH, Mutare from January to February 2025.

3. To determine behavioural factors related to cervical cancer screening uptake at VCPH, Mutare from January to February 2025.

4. To identify the health service factors associated with cervical cancer screening uptake at VCPH from January to February 2025.

1.4 Research Questions

1) What are the socio-demographic factors associated with cervical cancer screening uptake among women aged between 18 and 49 seeking services at VCPH Mutare.

2) What is the proportion of women aged between 18 and 49 seeking services at VCPH, Mutare who have ever been screened for cervical cancer?

3) What are the behavioural factors that are associated with cervical cancer screening uptake among women seeking services at VCPH, Mutare?

4) What are the health service factors associated with cervical cancer screening uptake among women seeking services at VCPH Mutare?

1.4.1 Hypotheses

Women in Mutare aged between 18 and 49 know about cervical cancer and cervical cancer screening.

1.5 Significance of the Study

Cervical cancer is a significant health problem in Zimbabwe, and prevention avenues need to be fully utilised. The findings from this study will help to identify the factors driving poor uptake of cervical cancer screening and how these factors can be mitigated. The study findings will also help policymakers and non-governmental organizations (NGOs) working on cervical cancer to design evidence-based cervical cancer control and prevention programs among women and provide appropriate programmatic approaches to address factors affecting cervical cancer screening practice.

The burden of cervical cancer in Zimbabwe is high, and timely screening has been shown to be effective at preventing morbidity and mortality related to cervical cancer. The Zimbabwe National cervical cancer prevention strategy seeks to ensure that 50% of all women eligible for screening have a valid cervical cancer screening result. The findings from this study will give insights to the behavioural, sociodemographic and health service factors affecting cervical cancer screening uptake in Mutare. A study like this has not yet been done nor published in Mutare, and this makes this study a necessary addition to inform evidence-based approaches to promote cervical cancer screening among women. The results of the study will be useful in effective targeting

and development of focused social behaviour change packages to promote uptake of cervical cancer screening.

Cervical cancer is a public health concern globally. Low to middle income countries like Zimbabwe have borne the brunt of this disease. However, cervical cancer is preventable if screening is done regularly, coupled with treatment of precancerous lesions. This study will help to increase the body of knowledge pertaining to the determinants of cervical cancer screening uptake.

1.6 Delimitations of the Study

The study was done at one health facility VCPH, in Mutare only, and therefore findings may not be generalizable to the whole population. In addition, the study focused on women in the 19 to 49 years age group as they are the age group generally targeted by locally available cervical cancer screening methods.

1.7 Limitation of the study

The study sample size may be too limited to generalise results for the rest of the population.

CHAPTER 2: REVIEW OF RELATED LITERATURE

2.1 Introduction

The purpose of this chapter is to review scholarly articles, surveys, books and any other sources relevant to the area of research. It therefore provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated. The information in this chapter was obtained from journals and scholarly articles from sites such as Pubmed and Google scholar. Grey literature was also utilised such as unpublished research articles, abstracts and results from Google searches.

2.2 Conceptual Framework and Variables

2.2.1 The Health Belief Model

This study seeks to identify factors associated with cervical cancer screening service utilization among eligible women (18–49 years) using the Health Belief Model (HBM). The HBM has been used as a conceptual framework in many studies looking at the factors affecting screening behaviours for conditions like cancer (Ampofo et al., 2020; Gemeda et al., 2020). The HBM suggests that people are likely to take action to prevent, screen for, or to control conditions of ill health if they regard themselves as susceptible to the condition, if they believe it could have potentially serious consequences, if they believe that a course of action available to them would be beneficial in reducing either their susceptibility to or the severity of the condition, and if they believe that the anticipated barriers to taking the action are outweighed by its benefits (Nigussie et al., 2019). Figure 1 below is an illustration of the Health belief model pertaining to cervical cancer screening.

Modifying factors **Individual factors** **OUTCOME**

| Income level |
| Number of children |
| Marital status |
| Age |
| Knowledge of cervical cancer risk |
| Level of education |
| Religious and |

| Perceived susceptibility to cervical cancer |
| Perceived severity of cervical cancer. |
| Perceived self-efficacy |
| Perceived benefits of cervical cancer screening |

Perceived barriers.
Cost of screening.
Fear of screening procedure.
Fear of results.
Transport challenges.

Uptake of cervical cancer screening.

Cues to action.
Symptoms of cervical cancer
Experience with cervical cancer in family/friends.
Health education.
Clinic reminders.

Figure 1: Health Belief Model of Women's Behaviour in Cervical Cancer screening

2.3 Defining Cervical Cancer

The cervix is the lower third of the uterus. Cancer refers to diseases in which abnormal cells divide without control and can invade nearby tissues. Cancer cells can also spread

to other parts of the body through the blood and lymph systems. Cervical cancer therefore refers to abnormal cell growth on the cervix.

Persistent infection with cancer-causing human papilloma virus (HPV) high risk types is the cause of most cervical cancer. Essentially all cervical cancers worldwide are caused by persistent infections with one of 13 carcinogenic human papillomavirus (HPV) genotypes: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, and 68 (Perkins et al., 2023). Ninety per cent of cervical cancers are squamous cell cancers and initiate in the transformation zone of the ectocervix; the other 10% are adenocarcinomas, which arise in the glandular columnar layer of the endocervix. (WHO, 2006).

Cervical cancer is one of few cancers which have a prolonged pre-cancerous stage, presenting a window of opportunity for diagnosis and treatment of precancerous lesions before they become malignant. Cervical cancer can be prevented by screening for and treating cervical precancer. Pre-cancerous lesions are defined as high-grade squamous intraepithelial lesions of the cervix, and these can progress to cervical cancer if left untreated.

2.4 Cervical Cancer Risk Factors

There are several known factors that place women at a higher risk of developing cervical cancer. These include, but are not limited to the following factors:

2.4.1 HIV Infection

People who are immunocompromised, such as those living with HIV, are more likely to have persistent HPV infections and a more rapid progression to pre-cancer and cancer. The HIV/AIDS pandemic has fuelled cervical cancer cases globally and the CDC declared cervical cancer as an AIDS defining illness in 1993. Globally, 5·8% of

new cervical cancer cases in 2018 were diagnosed in women living with HIV and 4·9% were attributable to HIV infection (Stelzle et al., 2021). In Zimbabwe, the HIV prevalence rate for the general population stands at 10.9 % in adults (15-49 years) with a prevalence of 13% in women aged 15-49 years (UNAIDS, 2023).

 HIV infection is associated with a higher risk of acquiring HPV, and lack of treatment leads to persistent HPV infection. A comparative study showed that even with appropriate therapy of HIV, women with HIV with cervical cancer have a higher risk of dying compared to HIV-uninfected women [HR, 1.95 (1.20–3.17)] (Dryden-Peterson et al., 2016, as cited in Godfrey et al., 2021). The association between HIV and cervical cancer implies that HIV positive women should be prioritised in screening programmes and should be screened for cervical cancer at regular intervals.

In HIV positive women, the incidence of precancerous lesions was found to be higher in those with a low CD4+ cell count below 500 (Silverberg et al., 2018). Therefore, good ART adherence is likely to result in better outcomes in HIV positive women who are screened for cervical cancer. Zimbabwe has a robust HIV management program, and strengthening of cervical cancer screening within Women Living With HIV (WLWHIV) accessing ART is of great importance. Furthermore, it is important to focus on young women with HIV, as on study showed that in Southern Africa, the HIV-attributable fraction of cervical cancer in WLHIV decreased from 86% in women ≤34 years to only 12% in women ≥55 years. The absolute burden of HIV-attributable cervical cancer (approximately 28 000 cases globally) also shifted toward younger women: in Southern Africa, 63% of HIV-attributable cervical cancer occurred in women <45 years old (Rohner et al., 2020). In Zimbabwe the HIV burden in AGYW aged between 15 to 24 years is 5.9%, and among AGYW, 76% of those living with HIV have been diagnosed (UNAIDS). This data shows that there is gap in the HIV

testing program, and more efforts should be directed to finding the AGYW infected by the HIV virus and prioritising their cervical cancer screening. UNAIDS using 2015 data showed that Zimbabwe has a low cervical cancer screening rate among WLHIV of 26%. This shows that there is a need to develop strategies to target women living with HIV with effective cervical cancer screening services.

2.4.2 Parity

A meta-analysis conducted by Tekalegn et al. (2022) revealed that women with high parity had 2.65 times higher odds of developing cervical cancer compared to their counterparts. Parity and pregnancy are associated with hormonal changes which maintain the transformation zone on the ectocervix for longer durations facilitating the direct exposure to HPV and to other cofactors. The relationship between high parity and cervical cancer has been revealed in studies, with one cross sectional survey, in 2016 Non-Communicable Disease study, with a population of women aged 25-64 years, living in urban areas showing that women with more than 4 children (high parity) had higher association with precancerous cervical lesion (Ashar et al., 2020). In sub-Saharan Africa, most women give birth to multiple children to prove their worth in marriage and to avoid the risk of the husband taking multiple wives. In certain religious groups in Zimbabwe, high parity is viewed as being honourable. According to the 2022 Zimbabwe household census report, at national level, the Total Fertility Rate (TFR) was 3.7, which was the average number of children a woman would give birth to, by the end of her reproductive years. Rural areas had a higher TFR of 4.4 as compared to 3.0 in urban areas, the average parity in rural setting was noted to be higher than in urban settings, which may be a protective factor for women residing in urban areas. Manicaland province had a TFR of 4.2, which is higher than the national average, placing VCPH as a place where it is likely to encounter multiparous women

at risk of cervical cancer. The fertility rate in Zimbabwe was also shown to be negatively correlated with level of education, as the TFR was highest for women who had completed primary level at 4.5 and lowest for women with tertiary education at 2.6, this may mean that education can be a protective factor against high parity and in turn cervical cancer risk.

2.4.3 HPV infection

A case control study by Berraho et al. (2017) demonstrated that HPV infection was detected in 92.5% of all cases (92.2% of squamous cell carcinomas and 100% of adenocarcinomas) and in 13.9% of control women. The same study demonstrated that the odds of cervical cancer was 39.3 times higher for women with HPV infection of any type compared to women without HPV (Berraho et al., 2017). HPV is the most common sexually transmitted infection, and the HPV viruses are classified as either high risk or low risk types in relation to cervical cancer. Seven out of 10 (70%) of all cervical cancer cases reported throughout the world are caused by only two types of HPV: 16 and 18. Another four high-risk HPV types – 31, 33, 45 and 58 – are less commonly found to be associated with cervical cancer. (WHO, 2017).

Prevention of HPV infection is a key primary preventive measure against cervical cancer. Currently, two HPV vaccines providing protection against high-risk HPV types 16 and 18 have been licensed. (WHO, 2017). The vaccines stimulate development of antibodies which will prevent HPV infection in case of later exposure. The vaccines should be given before the onset of sexual activity. The effectiveness of the vaccines was proven by meta-analyses which reported the following declines in HPV16/18 infections: 83% among females aged 13–19 years, 66% among females 20–24 years, and 37% among females 25–29 years. The same study noted declines in precancerous lesions among screened women as follows: 51% among females 15–

19 years and 31% among 20–24 years. For both HPV infections and cervical disease, declines were greater in countries that had higher HPV vaccination coverage showing the effectiveness of the HPV vaccines (Oliveira, & Niccolai, 2021).

2.4.4 Risky sexual behaviour

A number of factors related to the sexual history of individuals has been shown to be associated with a high risk of cervical cancer. A 2017 study demonstrated that early age at first sexual intercourse of less than18 years of age increased the risk of developing cervical cancer (Berraho, et al, 2017). A pooled analysis of ten studies also revealed that there is an association between early sexual debut and cervical cancer, with an odds ratio of 2.95, indicating that women who began sexual intercourse before the age of 18 had a higher risk of getting cervical cancer than those who started after the age of 18 (Mekonnen & Mittiku, 2023). A study which analysed national household surveys from 37 countries in Sub Saharan Africa (SSA), showed that in 2015, 28% of adolescent girls in SSA were married before age 18, with about 54% of girls having had their sexual debut before 18 years of age (Melesse et al., 2021). The risk of engaging in early sexual activity among AGYW is exacerbated by the poor socioeconomic status of most households in Zimbabwe, putting young women at risk of contracting HPV as well as other Sexually Transmitted Infections (STIs).

Having multiple sexual partners, or a partner with multiple sexual partners has been shown to increase the risk of cervical cancer. Berraho et al. (2017) demonstrated that having had ≥2 lifetime sexual partners and having a partner with multiple sex partners were significant risk factors for cervical cancer. The risk of cervical cancer is therefore much more pronounced in certain key populations such as Female Sex Workers, with a study in West Africa showing very high HPV prevalence rates of 95.5% in Benin and 81.4% in Mali respectively (Tounkara et al., 2020).

2.4.5 Sexually transmitted Infections

History of sexually transmitted infections has been found to be significantly associated with an increased risk of cervical cancer (Berraho et al., 2017). An umbrella review of meta- analyses showed that increased risk of high-risk HPV incidence was associated with Chlamydia trachomatis infection. Additionally, an increased risk of cervical cancer incidence was associated with Chlamydia trachomatis infection as well as with Trichomonas Vaginalis infection. The same study went on to show that co-infection of high-risk HPV with Chlamydia Trachomatis increases risk of cervical cancer by more than four times, proving a strong association between sexually transmitted infections and cervical cancer (Bowden et al., 2023).

2.4.6 Tobacco Smoking

Cigarette smoking is a major public health concern globally and is a risk factor in a number of malignancies. A Japanese study showed that the relative risk (RR) of developing cancer of the cervix for individuals who had ever-smoked relative to never-smokers was 2.03 (Sugawara et al., 2019). According to Zidi et al. (2020), women who are smokers have a 14 times greater risk of suffering from cervical cancer and are approximately 24 times more likely to develop an advanced form of cervical malignancy. A meta-analysis done in 2018 showed that passive smoking was associated with increased risk of incident cervical cancer (OR=1.70) (Su et al., 2018). These results reinforce the need for governments to enforce the provisions of WHO Framework Convention on Tobacco Control and develop smoke free policies to offer protection for non-smokers.

2.4.7 Hormonal contraceptive use

The long-term use of hormonal contraceptives has been shown to increase the risk of cervical cancer in women. According to a study by Kusmiyatti 2019, the use of hormonal contraceptives for more than five years increased the risk of cervical cancer by 4.2 times as compared to women who used hormonal contraceptives for less than five years. Zidi et al. (2020) also conceded that having a history of using birth control pills increase cervical cancer occurrence and aggravation (OR~2). Iversen et al. (2021) demonstrated that current or recent users of any hormonal contraception had an increased risk of both adenocarcinoma and squamous cancer and the risk pattern generally increased with longer duration of use and declined after stopping.

2.5 Signs and symptoms of Cervical Cancer

The earliest stages of cervical carcinoma are usually asymptomatic and may only be detected after an abnormal screening test. However, the early stages of cervical cancer may sometimes be associated with a watery vaginal discharge and postcoital bleeding or intermittent spotting. These early symptoms frequently are unrecognized by the patient, and this may lead to a delay in seeking healthcare. Knowledge about the signs and symptoms of cervical cancer is quite low in Zimbabwe, with a study by Nyamambi et al. (2020) in Chegutu, Zimbabwe demonstrating that the majority of women in the study did not know the symptoms of cervical cancer, regardless of age group, religion, education and marital status. For example, 62% of women with a tertiary qualification lacked knowledge about the symptoms of cervical cancer contrary to common belief that more educated women are knowledgeable about such issues.

Signs and symptoms of more-advanced cervical cancer include vaginal bleeding after intercourse, between periods or after menopause. Watery, bloody vaginal discharge

that may be heavy and have a foul odour is another sign of more advanced cervical cancer, and this is usually accompanied by pelvic pain or pain during intercourse.

In cases where there is advanced stage cervical cancer disease with spread into surrounding tissue and organs, it can cause other symptoms such as haematuria, urinary incontinence, bone pain, lower limb oedema, flank or loin pain (due to hydroureter or hydronephrosis). It may also result in changes to bladder and bowel habits, loss of appetite, weight loss and fatigue.

2.6 Global trends of Cervical Cancer

Cervical cancer is the fourth most common cancer in women globally (GLOBOCAN, 2018). However, in low resource countries like Zimbabwe, cervical cancer is ranked as the most common cancer in women. Cervical cancer was the leading cause of cancer-related death in women in eastern, western, middle, and southern Africa. China and India together contributed more than a third of the global cervical cancer burden, with 106 000 cases in China and 97 000 cases in India, and 48 000 deaths in China and 60 000 deaths in India. However, the highest incidence of cervical cancer was noted in Eswatini (Arbyn et al., 2020).

The overall incidence rate of cervical cancer in Europe is 10.6 per 100,000 (Kesic & Rogovskaya, 2012). Within Europe, the incidence rates differ, being lower in Western Europe where prevention programs are better developed and significantly higher in Central and Eastern Europe where prevention programs are not well developed.

Cervical cancer screening has been shown by studies to have a great impact on mortality rate due to cervical cancer. According to a meta-analysis of European studies, in cohort studies from Northern Europe, cervical cancer mortality reduction among those participating in screening was between 41% and 84% in studies that

corrected for self-selection bias and 87% in the study that did not do so. The cohort study from Western Europe did not correct for self-selection bias and reported a cervical cancer mortality reduction of 91% (Jansen, et al., 2020).

In a study that looked at cervical cancer trends in Africa, findings showed that incidence rates had increased in all registries for some, or all the periods studied, except for Mauritius with a constant annual 2.5% decline. (Jedy-Agba et al., 2020).

Generally, the burden of cervical cancer is highest in countries with a low Human development index (HDI). Huang et al. (2022) demonstrated that the burden of cervical cancer was highest in regions with low and medium HDI with data showing that the highest incidence and mortality were in Southern Africa. In a study conducted in Southern Africa, the 5-year relative survival for Stage I-II cervical cancer in high HDI registry areas was 67.5% while it was much lower for low HDI registry areas. Low HDI countries need to commit resources into strengthening their cervical cancer elimination programs.

2.7 Cervical Cancer Screening Practices

WHO proposes screening to identify asymptomatic precancerous lesions such as Cervical Intraepithelial Neoplasia (CIN). There are several methods which are utilised for cervical cancer screening. These include Pap smear, Visual inspection with acetic acid and cervicography (VIAC), Liquid based cytology (LBC) and Human Papilloma Virus Deoxyribonucleic acid (HPV DNA) testing.

The Pap smear test was invented in the 1940s, by George N. Papanicolaou and H.F. Traut. It entails the exfoliation of cells from the cervix, which are then fixed, viewed under a microscope, and are subsequently morphologically interpreted. Pap smear has

been shown to be effective, but it is costly hence most low-income countries like Zimbabwe cannot conduct it at a public scale due to lack of adequate resources.

Liquid based cytology (LBC) is another method used in cervical cancer screening. It entails the collection of cells from the cervix, which are then transferred to a vial containing preservative solution instead of being fixed on a slide, thus enabling uniform distribution of the collected clinical material. The LBC screening option is not widely available in Zimbabwe.

VIAC is an inexpensive screening method frequently used in low-resource settings. It is based on the fact that upon the application of acetic acid directly to the cervix, precancerous cervical lesions become discernible to the naked eye by clinicians. The use of high-resolution cameras enhances the diagnostic capability of the clinicians, making lesions more visible. This is the method that is most used in Zimbabwe, and it is offered free of charge in public health facilities. In a study looking at management of cervical cancer in Zimbabwean patients, from a total of 408 cervical cancer patients recruited into the study, only 87 (21%) had ever been screened for cervical cancer and 83 (97%) of those who had been screened had the visual inspection with acetic acid procedure done, with only 3% having been screened using other methods (Zibako et al., 2022). VIAC is used as part of the 'see and treat' approach whereby identified precancerous lesions are treated using the appropriate method at the same sitting. Treatment methods mainly used in Zimbabwe include thermal ablation, cryotherapy and Loop Elecrosurgical Excision Procedure (LEEP). This screen and treat approach minimises cases of lost to follow up clients.

HPV testing is based on the detection of HPV DNA or other viral markers in cervical or vaginal fluids. HPV testing is mainly for the identification of women at higher risk

of developing cervical cancer. Specimen collection can either be done by the clinician or by the patient herself. HPV self-testing has the advantage of allowing clinics to screen many more women as compared to when the test is administered by a health worker. However, in Zimbabwe this method is only available in a few urban clinics, with limited accessibility to the rural population. A positive HPV test result requires triage for cervical abnormalities with VIAC and giving the patient appropriate treatment of precancerous lesions where identified.

2.8 Uptake of Cervical Cancer Screening

The uptake of cervical cancer screening varies but is generally lower in low-income countries. A study done in Europe demonstrated uptake of cervical cancer screening of 87% among study participants. In contrast, in a study in Uganda only 1 in 5 women (20.6%) had ever screened for cervical cancer.

In Zimbabwe, a situation analysis by Kuguyo et al. (2017) showed that among study respondents, 91% had not been screened for cervical cancer, which translates to a screening rate of about 9%. According to Mantula & Mwisongo (2018) the strongest predictor of screening was having heard of cervical cancer, with 34.3% of those who had heard of it being screened compared to only 2.3% of those who had not.

Zibako et al. (2022) demonstrated that from a total of 408 cervical cancer patients that were recruited into their study, only 87 (21%) had ever been screened for cervical cancer. Another study which analysed data from the 2015 ZDHS showed that nearly 1 in 10 women (13.44%) had ever screened for cervical cancer (Alone et al., 2022). The very low uptake of cervical cancer screening in Zimbabwe calls for an examination of the determinants of cervical screening among Zimbabwean women.

2.9 Modifying Factors

2.9.1 Age

Cervical cancer screening uptake has been shown to be higher in women above the age of 30 years of age. Alone et al. (2022) demonstrated in their study that the odds of cervical cancer screening were statistically significant, and higher among women; age 31–49 years (OR = 2.01; 95% CI 1.72–2.34) than their counterparts age ≤ 30 years. The same pattern has been observed in a South African study analysing the 2016 South Africa demographic health survey data, which showed that the mean age at cervical cancer screening uptake among women in South Africa was 40.8 years (Akokuwebe et al., 2021). The same findings were noted in Ethiopia, with a study demonstrating that women who were in their 30's were 4.58 times more likely to uptake cervical cancer screening service as compared to those who were in the age range of 21–29 (Ayenew et al., 2020).

2.9.2 Socio-economic status and area of residence

Women coming from a wealthy background have been demonstrated to have higher odds of being screened for cervical cancer in several studies. For example, Alone et al. (2022) demonstrated that a non-poor wealth index was associated with being screened for cervical cancer (OR = 1.54). The same findings were echoed by Akokuwebe et al. (2021).

In terms of area of residence, women in urban residential areas (77.68%) were found to be more likely to report current screening compared to women who were in rural areas (63.66%) (Asare et al., 2024). The same findings were noted in a study analysing data from four African countries including Zimbabwe, which demonstrated that

women living in rural areas were 33% less likely to screen for cervical cancer than the women living in urban areas.

2.9.3 Education

The proportion of women who had a Pap smear test was significantly higher among those with higher educational attainment (68.7%) (Akokuwebe et al., 2021; Ampofo et al., 2020). These findings are comparable to results showed by analysis of ZDHS 2016 data which showed that cervical cancer screening uptake in women with secondary school education was lower as compared to those with tertiary level education, secondary (OR =1.36) and tertiary (OR = 1.68) (Alone et al., 2022). Similar findings have been demonstrated in the United States with results showing that women more likely to report being overdue for cervical cancer screening were low literacy vs. high literacy (Asare et al., 2024). The high uptake of cervical cancer screening among more educated women may be due to the fact that they have access to information about cervical cancer risks and have a better understanding of the complications of cervical cancer, as compared to less educated women. Promoting education of adolescent girls and young women is one possible strategy to ensure future generations of women who diligently seek cervical cancer screening services.

2.9.4 Knowledge of Cervical Cancer

Knowledge of the signs and symptoms of cervical cancer, as well as the risk factors for cervical cancer is an important determinant of cervical cancer screening uptake. A study in Ethiopia showed that lack of awareness of cervical cancer was found to be among the major reasons for low uptake of cervical cancer screening (Fentie et al., 2020). Yimer et al. (2021) conducted a meta- analytic study to estimate the uptake of cervical cancer screening and identify the predictors of cervical cancer screening

uptake in Sub-Saharan Africa which showed that knowledge about cervical cancer increased screening uptake by nearly five times. This is powerful evidence which can be used to strengthen cervical cancer screening programs, through designing effective patient education systems.

2.9.5 Knowledge of cervical cancer screening practices

Knowledge of the clinical procedure involved in screening for cervical cancer is an important determinant of cervical cancer screening uptake among women. Ubah et al. (2022) demonstrated in a study in Nigeria that lack of knowledge of what Pap smear was a significant barrier to seeking cervical cancer screening among women. Additionally, knowledge about the places where cervical cancer screening services are offered as well as the timing of repeat tests are important factors that determine whether women get access to cervical cancer screening (Ubah et al., 2022). Cervical cancer screening programs need to demystify the procedures, and to inform women what to expect when they visit the health centre for screening so as to dispel fears and misconceptions about cervical cancer screening within communities. In one study in Ghana, a considerable number of the respondents 160 (80%) thought the screening was scary, leading to poor health seeking behaviour (Ampofo et al., 2020).

2.10 Perceived barriers to cervical cancer screening

There are many factors that hinder women from accessing cervical cancer screening that have been discussed in literature. The perceived barriers to cervical cancer are a major factor leading to poor health seeking behaviour among women, which in turn leads to late diagnosis of cervical cancer. Fear of the screening test results is a factor that has been shown to be a barrier to cervical cancer screening. Women perceive cervical cancer to be a lethal disease, with serious and far-reaching consequences. As

a result of this, most women are afraid of knowing their cervical cancer screening results, leading to failure to go for cervical cancer screening. Fear of the result is one of the biggest barriers to screening (Ubah et al., 2022), as well as fear of the cervical cancer screening procedure itself (Ampofo et al., 2020). Other perceived barriers include time constraints, attitude of healthcare workers, and distance from test centre (Ubah et al., 2022). Overall, women who have low perceived barriers have been found to be 4.39 times more likely to have cervical cancer screening uptake compared to their counterparts (Yirsaw et al., 2024). Findings from a desk review of studies from low and middle income countries looking at the barriers to cervical and breast cancer screening revealed that fear of screening test results, lack of knowledge about the disease and screening, distance to the screening clinic, embarrassment to undergo screening, lack of support or permission from husbands to undergo screening and high cost of screening were the most common barriers (Srinath et al., 2023).

Financial constraints are among the barriers that have been reported in literature. Results from a study that examined perceived financial barriers to, and the perceived cost burden of, cervical cancer screening demonstrated that seventy-two percent of participants perceived financial barriers to screening. The perceived financial barriers include screening appointment costs (71%) and follow-up/future treatment costs (44%) as well as lost wages due to time missed from work (6%) and transportation costs (5%) (Biddell et al., 2021). These factors may well be a significant factor in low resource settings such as Zimbabwe, where only a small proportion of the population has medical insurance.

2.11 Perceived benefits

The perceived benefits of being screened for cervical cancer may be among factors that affect the uptake of cervical cancer screening.

It is highly likely that perceived benefits would be linked to the knowledge that women have pertaining to cervical cancer and cervical cancer screening. Perceived benefits may also be linked to experiences in the personal lives of patients, for example, having witnessed a loved one fighting cervical cancer. However, some studies have shown that even though the majority of the participants had adequate knowledge of the benefits of a Pap smear and a high perception of the benefits of screening, the perceived benefits of cervical cancer screening were not predictive for the uptake of cervical cancer (Al Amro et al., 2020).

2.12 Perceived risk

The level of risk perception among women has a direct bearing on the effort that they will put into seeking screening services. Risk perception is possibly determined by the level of knowledge of cervical cancer, as well as knowledge of the risk factors of cervical cancer. In a study conducted in Iran, the perceived risk of getting cervical cancer was low because of overestimating the role of hereditary factors for cervical cancer, difficulty in differentiating between cancer and sexually transmitted infections (STI), and the absence of visible symptom (Taghizadeh Asl et al., 2020). This could point to inadequate levels of health education among participants. Marlow et al. (2020) demonstrated that providing a clear explanation that decouples women's perceived cervical cancer risk from their current sexual behaviour may help to increase perceived risk of cervical cancer and intentions to be screened among older women.

2.13 Perceived self-efficacy

According to the health belief model, perceived self-efficacy refers to the level of a person's confidence in his or her ability to successfully perform a health behaviour, in this case, cervical cancer screening. A study conducted among village health volunteers in Thailand demonstrated that there were significantly positive correlations between the perceived self-efficacy and cervical cancer screening (Bunkarn & Kusol, 2021). Zhang et al. (2023) examined the sources of self-efficacy among rural females, and came up with four main sources, including personal screening experience, hearing about other women's screening experiences, professional health education and consultation, and emotional status. Public health strategies aimed at improving self-efficacy have been proven to increase the proportion of women accessing cervical cancer screening and expanding such programs could result in improved cervical cancer screening coverage (Bunkarn et al., 2020).

2.14 Cues to action

According to the Health Belief Model, cues to action are triggers that prompt people to engage in health-promoting behaviors. Cues to action can be internal such as disease symptoms or external, such as reminders or events from others. Studies focusing on cervical cancer screening cues to action have revealed several cues to action which have significant correlation with cervical cancer screening. Information from television, recommendations from physicians, midwife or friend, having ever seen cervical cancer patients was obtained and having ever read a book or a leaflet are some of the cues known to be positively correlated with performing cervical cancer screening (Winarti et al., 2020). The study by Winarti et al. (2020) showed that the higher cues to action or trigger given to the women, the higher the probability of

women to perform the early detection of cervical cancer using the VIA method. Themes from qualitative studies also demonstrate the same cues to action health workers, peer influence, marital status and the media, showing that these factors are important in determining health seeking behaviours among women (Appiah, 2022).

2.15 Summary

This chapter summarised the available literature on barriers and facilitators of cervical cancer screening, utilising various sources. The issue of determinants of cervical cancer screening has been widely studied globally. Few studies have been conducted in Manicaland on this topic, hence the need for further research to build upon the body of evidence thereby guiding our cervical cancer screening programme in Zimbabwe with sound scientific evidence.

CHAPTER 3 METHODOLOGY

3.1 Introduction

This chapter outlines the research design, study setting, study population, sampling criteria and methods, data collection methods, data analysis plan and ethical considerations.

This was a mixed methods design study conducted at VCPH, a provincial referral hospital that offers cervical cancer screening services in Mutare urban. Mutare is the provincial capital city of Manicaland province and is located along the Mozambican border. There are 7 primary health facilities in Mutare serving an urban population of approximately 188,243. Victoria Chitepo Provincial hospital is the referral provincial hospital catering for referrals from all the 7 districts in Manicaland. According to statistics from the Zimbabwe 2022 Census report, Manicaland has a population of 2,037,703 persons.

The study was conducted at Victoria Chitepo Provincial hospital. Victoria Chitepo Provincial Hospital (VCPH) was selected as the study site because it has a large catchment area. VCPH serves the province of Manicaland. The hospital refers on to Harare Central Hospital and Parirenyatwa Hospital as required. The hospital has 260 beds. VCPH also offers cervical cancer screening services for women aged 18 years and older. There are trained doctors and nurses who conduct treatment of precancerous lesions using LEEP, Thermal ablation, Cryotherapy, and other methods of treatment. The hospital also has specialist gynaecologists who manage patients with invasive cervical cancer. An average of 10 to 15 women receive cervical cancer screening services daily at VCPH.

Figure 2: Study site

3.2 The Research Design

The research design was a mixed method, with both qualitative and quantitative aspects. The researcher conducted an Analytic, cross sectional study design on patients seeking services at VCPH. The researcher also conducted qualitative research through in-depth Key informant interviews to collect information on the barriers and facilitators of cervical cancer screening from key informants such as the doctors and nurses within relevant departments at VCPH.

3.3 Population and Sampling

The study population was made up of:

- All women aged 18 to 49 seeking healthcare services at Victoria Chitepo Provincial hospital outpatients, OI department and FCH departments.

- Key informants such as doctors and Sister in Charge (SIC) of the departments, and nurses working in the FCH, OI Clinic, VIAC department and Outpatients department.

3.3.1 Inclusion criteria

Women aged 18 to 49 years available at study site at the time of data collection and consenting to participate in the study were included in the study. Health professionals stationed within the Outpatients, FCH, VIAC and OI clinic departments as well as staff working in wards taking care of female patients willing and able to give informed consent to take part were included in the study.

3.3.2 Exclusion criteria

Women who were admitted in the hospital wards, pregnant women, women below the age of 18 years, and women above the age of 49 years were excluded from the study. Women who did not consent to participating in the study, as well as those with a history of having had or currently being treated for cervical cancer were excluded.

3.3.3 Sample Size and Sampling procedure

Convenience sampling of women falling within the age range 18 to 49 years seeking healthcare services at Victoria Chitepo provincial hospital Family and Child Health department, OI department, VIAC and Outpatients department was done on the days that the researcher conducted interviews. The researcher chose these departments as these are the places where one is likely to encounter women who are generally ambulatory and are making free choices to select the services that they need. The researcher and research assistant collected data over a two-week period. They

requested private space in outpatients and FCH departments where they conducted interviews. The VIAC and OI clinic are smaller units housed within the FCH department, therefore the researcher had access to patients seeking services to these departments as well. The researcher approached women as they waited in line for service provision and sought their consent to participate in the study. The researcher took particular care not to disturb patient flow and treatment procedures during data collection.

Key informants were purposively selected. Two nurses working within each of the VIAC department, FCH department, and OI clinic were selected as key informants as they were on duty on the day that the researcher conducted interviews. A total of two nurses and two doctors from outpatients department were interviewed by the researcher. The researcher also conducted key informant interviews with four nurses from the wards, namely Female medical ward, Female surgical ward, Maternity ward and Special baby care unit. One doctor involved in cervical cancer screening and management, as well as one hospital matron on duty were purposively recruited in the study. The researcher only interviewed staff members who consented to be included in the study and were present on duty on the days when the researcher conducted data collection for the study. The researcher utilized a Key Informant interview guide with semi-structured and open-ended questions. Key informant interviews were conducted in English. Four key informants opted to fill out the key informant interview questionnaire during their free time, citing time constraints at work. The rest of the key informant interviews were recorded using audio recorders. Handwritten notes were also taken during the interviews and were used to supplement the audio recordings.

3.3.4 Sample size calculation

Sample size was calculated using the single population proportion formula. The formula for sample size determination is given as:

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

Where:

n is the required sample size, Z is the Z-value corresponding to the desired confidence level (for 95% confidence, Z = 1.96), and p is the estimated proportion of the population. The proportion of women who have undergone cervical cancer screening is 0.09 or 9% (Kuguyo et al., 2019).

d is the margin of error (in this study, 5% or 0.05).

Step-by-Step Calculation:

1. Z = 1.96 (for 95% confidence level),

2. p = 0.09 (proportion of women who have undergone cervical cancer screening),

3. d = 0.05 (margin of error).

The formula becomes:

$$n = \frac{(1.96)^2 \cdot 0.09 \cdot (1-0.09)}{(0.05)^2}$$

The calculated sample size is approximately 126 participants. However, the study had to account for a non-response rate of 20%. To adjust for this, the formula becomes:

$$n_{adjusted} = \frac{n}{1 - non - response\ rate}$$

Where the non-response rate is 20%, or 0.20.

$$n_{adjusted} = \frac{126}{0.8}$$

After adjusting for a 20% non-response rate, the final sample size was approximately 158 participants.

The sample size for Key informant interviews was 16 participants, which is about 10% of the calculated sample size for participants.

3.4 Data Collection Instruments

The researcher utilized two tools for data collection. An interviewer administered structured questionnaire was utilized for the women seeking health services. This questionnaire had closed-end questions to allow for quantitative analysis of the data collected.

An interviewer-administered questionnaire was used for interviewing the key informants. This questionnaire had open ended questions to allow for an in-depth analysis of the barriers and facilitators of factors affecting cervical cancer screening.

3.4.1 Validity and Reliability

The field supervisor assessed the questionnaires for clarity and appropriateness and also assessed whether they addressed the objectives of the study. Corrections were effected before pre-testing the questionnaires.

3.4.2 Pretesting of instruments

Questionnaires were pretested at City clinic in Mutare to check for acceptability of the data collection tool and to estimate response rate. The questionnaires were pre-tested on a representative sample of patients and staff at a local clinic in Mutare and any flaws noted were rectified before commencing the study to ensure reliability and

validity. Pretesting the data collection tools helped to pinpoint wording issues or questions that are difficult to answer and to estimate the time required to complete the survey so that adjustments were made to the data collection tools.

According to Perneger et al. (2015), a default sample size of 30 participants is recommended for pretesting of questionnaires. The study therefore utilised sample of 30 participants seeking services at City Clinic in Mutare city to pre-test the questionnaire. The respondents for pretesting were selected using convenience sampling. City clinic was randomly selected as the pretesting site using the hat method. Participants were selected from women aged 18 to 49 years seeking services at City clinic, Mutare.

3.5 Data Collection Procedure

The study participants and key informants responded to the questionnaires on individual basis in order to avoid bias on sensitive questions. The researcher collected information with the help of a research assistant to avoid interviewer bias.

Written informed consent was obtained from each of the participants who chose to participate in the study. The purpose of the study was clearly explained to all participants. The voluntary nature of participation and the confidentiality with which information provided would be treated was emphasised. Numbers were used to identify patients, and personal details were not recorded in order to maintain confidentiality. Participants were informed of the option to withdraw from the study at any time during the study without consequence.

The structured questionnaire comprised of six sections that looked at the socio-demographic characteristics, Knowledge of cervical cancer and cervical cancer screening, participation in cervical cancer screening programs, perceived

susceptibility to cervical cancer, perceived benefits of having cervical cancer screening and perceived barriers to seeking cervical cancer screening of respondents. Questions measuring participants' level of knowledge of cervical cancer risk factors, signs, symptoms and screening tests were prepared in multi-optional statements. Participants were expected to respond to these statements with a 'yes' or 'no' as appropriate. Questions assessing the perceived risk and susceptibility to cervical cancer had responses rated on a Likert scale.

Key informant interviews were conducted in English. The participants had the option to self-administer the questionnaire, and 4 participants opted to do so, writing down their responses. The rest of the Key informant interviews were recorded using an audio recorder. Handwritten notes were also taken during the interviews and were used to supplement the audio recordings. Permission to record the interviews on audio recorders was sought from participants for Key informant interviews.

3.6 Analysis and Organization of Data

Data was checked manually for its completeness during the data collection period.

The responses in the completed questionnaire were coded and entered in Microsoft Excel and analysed in SPSS version 28.

Descriptive Statistical measures like mean and standard deviation were done. Frequency tables were used to construct bar graphs and pie charts.

Chi squared test was computed to check for associations. Bivariate and multivariate logistic regression analysis was carried out to examine the association between uptake of cervical cancer screening and constructs of the Health Belief model.

For the Key informant interviews, all the audio recordings were transcribed verbatim and translated into English by the researcher and research assistants who are fluent in Shona. Transcripts were cross-checked to ensure accuracy of the original content, and any discrepancies were addressed by consensus between the researcher and the research assistants. Thematic Analysis was used to analyse findings. To become familiar with the data, the lead researcher also listened to interview recordings and re-read detailed interview notes and transcripts. Inductive, open coding of notes and transcripts was then be used to identify important features in the data. Codes were then collated into themes and sub-themes, which were reviewed by the field supervisor who has expertise in qualitative health research.

3.6.1 Dependant variable

The dependant variable was ever having been screened for cervical cancer. The dependent variable was coded as a dichotomous variable, with responses coded as No (0) or Yes (1).

3.6.2 Independent variables

The independent variables were: -

1) Socio-demographic characteristics (Age, Level of education, Religion, marital status, place of residence, employment status, income level and HIV status). This information was obtained through participant interviews.

2) Knowledge about cervical cancer screening.

3) Perceived risk of cervical cancer screening.

4) Perceived barriers to cervical cancer screening.

5) Perceived benefits of cervical cancer screening.

The level of significance was set at $P \le 0.05$.

3.7 Ethical Considerations

Permission to carry out the study was granted by the Medical Superintendent at VCPH. Approval of carrying out the research was granted by AUREC. Informed written consent was sought from all the participants.

Participants were interviewed privately, and information was not disclosed to any people other than those relevant to the study so as to ensure that confidentiality was maintained. No names were used on the questionnaires to maintain confidentiality. The researcher assured participants that the data collected would be used for academic purposes only. The researcher also achieved avoidance of harm to participants by ensuring that in the event that participants became emotional while disclosing sensitive information, free counselling was offered by the researcher.

3.8 Summary

A mixed methods cross-sectional study was conducted at Vitoria Chitepo Provincial Hospital to investigate the barriers and facilitators of cervical cancer screening uptake in women aged 18 to 49 years seeking healthcare services at the hospital. The total sample size was 158 study participants and 16 Key informants. Data analysis used Descriptive Statistical measures like mean and standard deviation. Frequency tables were used to construct bar graphs. The Pearson's correlation analysis was carried out to examine the association between uptake of cervical cancer screening and constructs of the health belief model as bivariate analysis.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the findings from the analysis of the collected data in SPSS version 28. The chapter also explains the findings from the data analysis. Data is presented in the form of tables and graphs. Bivariate correlation analysis was done to explore the relationship between variables. This chapter also discusses and explains the findings pertaining to the knowledge of cervical cancer, barriers and facilitators of cervical cancer screening in relation to the health belief model.

4.2 Data Presentation and Analysis

4.2.1 Demographic characteristics

Table 2 below summarizes analysis of the study participants by age. A total of 158 participants were recruited and used for the study, with age range from 19 to 49 years and a mean of 34.8 years (SD = 8.22). The 25th, 50th and 75th age percentiles were 28, 35 and 41.25 respectively. The participants' age was normally distributed, with a modal age of 32. Analysis of the age groups of participants showed that the majority of participants (38%) were in the 30-to-39-year age group. The under 29years age group constituted the lowest proportion of participants ever screened for cervical cancer. Figure 3 below is a bar graph showing the distribution of study participants by their age groups.

Table 2: Descriptive analysis by Age

Statistic		Age
N	Valid	158
	Missing	0
Mean		34.88
Median		35.00
Mode		32
Std. Deviation		8.219
Variance		67.546
Range		30
Minimum		19
Maximum		49
Percentiles	25	28.00
	50	35.00
	75	41.25

The bar graph (Figure 3) below summarises distribution of participants by age group.

Age Distribution of Study Participants n=158
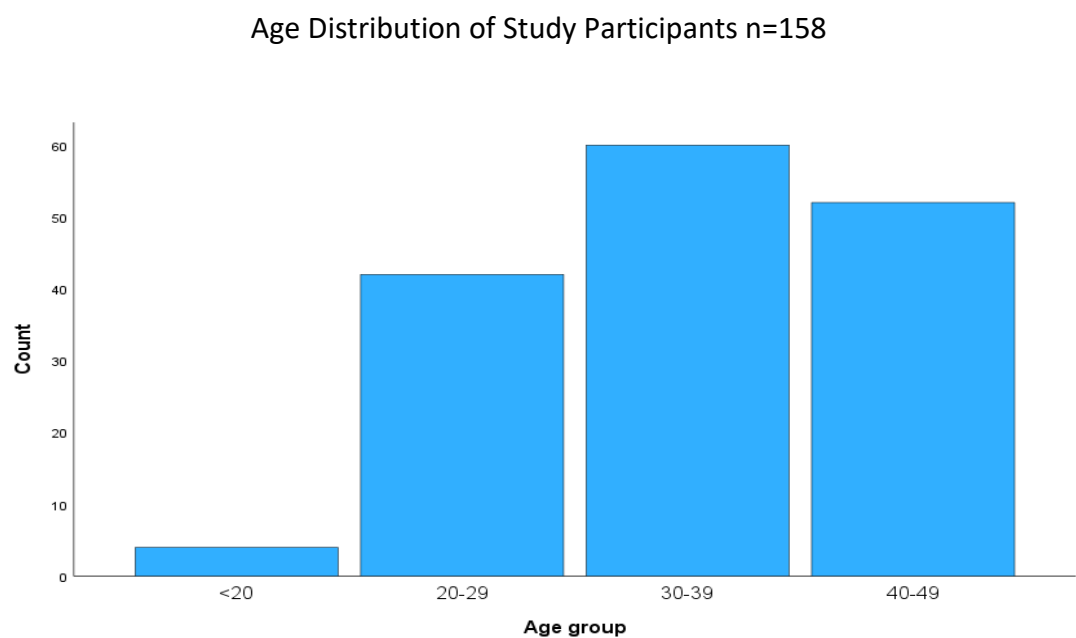
Figure 3: Distribution of study participants by age group.

Table 3 below summarises the socio-demographic characteristics of participants. 74% of the participants were married, and the majority of participants (83.5%) were educated up to secondary level. About 44.3% of participants were urban residents, reflecting the fact that most of the participants were from within the Mutare urban catchment area which is mainly served by VCPH. However, the proportion of women from rural areas was quite significant (36.7%), revealing that there was no bias in terms of residential area of participants. 24.1% of the participants indicated that they were employed, with about 46.8% of the participants being unemployed, which reflects the general state of low employment rates within the Zimbabwean population. It therefore followed that the household monthly income for almost half (49.4%) of the participants fell under the USD $200 figure. This may reflect the low employment status of the women enrolled in the study.

Table 3: Socio-demographic characteristics of participants

Variable	Category	Count	Column N %
What is your marital status?	Married	117	74.1%
	Single	11	7.0%
	Widow	11	7.0%
	Divorced	9	5.7%
	on separation	10	6.3%
What is your religion?	Christianity	153	96.8%
	Islam	3	1.9%
	Traditional	2	1.3%
	Other	0	0.0%
What is the highest level of education you have completed?	no education	0	0.0%
	primary school	6	3.8%
	Secondary level	132	83.5%
	Tertiary level	20	12.7%
Where do you stay	Rural area	58	36.7%
	Peri urban area	30	19.0%
	Urban area	70	44.3%
What is your employment status	Employed	38	24.1%
	self employed	46	29.1%
	Unemployed	74	46.8%
What is your monthly household income?	less than $50	22	13.9%
	$51-200	78	49.4%
	$201-500	44	27.8%
	$501-999	8	5.1%
	more than $1000	3	1.9%
	I don't know	3	1.9%
Are you a smoker	YES	0	0.0%
	NO	158	100.0%
Have you ever used hormonal contraceptives?	0	3	1.9%
	1	115	72.8%
	2	40	25.3%
What is your HIV status	Negative	0	0.0%
	Positive	27	17.1%
	2	131	82.9%

As can be seen in table 4, when cervical cancer screening status (ever and never) was cross tabulated with socio-demographic characteristics, the result shows that there was

a significant association between ever screening for cervical cancer with employment status (p < 0.01), monthly income (p < 0.001), residential area (p < 0.01), HIV status (p < 0.01), and age (p < 0.01).

Table 4: Pearson Chi-Square Test for association between cervical cancer screening status of participants and socio-demographic characteristics (n=158)

Characteristic		Have you ever been screened for cervical cancer?
What is your marital status?	Chi-square	8.873
	Df	4
	Sig.	.064
What is your religion?	Chi-square	5.005
	Df	2
	Sig.	.082
What is the highest level of education you have completed?	Chi-square	2.007
	Df	2
	Sig.	.367
Where do you stay	Chi-square	14.255
	Df	2
	Sig.	<.001
What is your employment status	Chi-square	14.285
	Df	2
	Sig.	<.001
What is your monthly household income?	Chi-square	25.049
	Df	5
	Sig.	<.001
Are you a smoker	Chi-square	.
	Df	.
	Sig.	.
Have you ever used hormonal contraceptives?	Chi-square	14.805
	Df	2
	Sig.	<.001
What is your HIV status	Chi-square	21.596
	Df	1
	Sig.	<.001

After logistic regression, the predictors of cervical cancer screening were employment status (OR= 0.4, CI [0.3, 0.8] p = 0.005), and place of residence (OR= 1.9, CI [1.2,3.0] p=0.005) and level of income (OR=0.6, CI [0.4,1.0] p=0.055) as shown on Table 5

below. This is similar to findings by Alone et al. (2022) and Akokuwebe et al. (2021), who also found that women of higher income status were more likely to be screened for cervical cancer.

Table 5: Logistic regression analysis of sociodemographic factors and ever screening for cervical cancer.

Variable	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	95% C.I.for EXP(B) Upper
What is your marital status?	-.038	.201	.036	1	.849	.963	.649	1.427
What is your religion?	-.574	.676	.722	1	.396	.563	.150	2.118
What is the highest level of education you have completed?	-.532	.593	.804	1	.370	.588	.184	1.879
Where do you stay	.645	.236	7.506	1	.006	1.907	1.202	3.026
What is your employment status	-.719	.258	7.748	1	.005	.487	.294	.808
What is your monthly household income?	-.443	.231	3.687	1	.055	.642	.408	1.009
What is your HIV status	-20.858	7468.002	.000	1	.998	<0.1	<0.1	.
Constant	45.476	14936.005	.000	1	.998	56250251082850296000.000		

In terms of area of residence, Asare et al., 2024) also found that women from urban areas were more likely to be screened for cervical cancer. The odds of one ever having been screened for cervical cancer increased with increasing age as shown on Table below (OR= 1.0, CI [1.0,1.1] p<0.001). This therefore means that younger women are less likely to ever have been screened for cervical cancer. Alone et al. (2022) also demonstrated in their study that the odds of cervical cancer screening were statistically significant, and higher among women; age 31–49 years, findings similar to what was revealed in this study.

Table 6: Regression Analysis for Age and Cervical Cancer Screening.

| | B | S.E. | Wald | Df | Sig. | Exp(B) | 95% C.I.for EXP(B) | |
							Lower	Upper
Age	.075	.022	12.178	1	<.001	1.078	1.033	1.125
Constant	-2.176	.752	8.376	1	.004	.113		

4.2.2 Proportion of participants who had ever been screened for cervical cancer

Analysis of data showed that 60.1% of participants had ever been screened for cervical cancer as shown on Figure 4 below. The level of self-reported cervical cancer screening was quite high. This could be attributable to the fact that data was collected on ambulatory patients in OPD, FCH and OI clinic departments, and these patients are more likely to have accessed cervical cancer screening. The high figure may also be a result of social desirability bias resulting in some participants misrepresenting their actual cervical cancer screening uptake. The high percentage is in contrast with

findings from other studies in Zimbabwe (Tapera, 2019; Zibako et al., 2022), which demonstrated low levels of cervical cancer screening uptake.
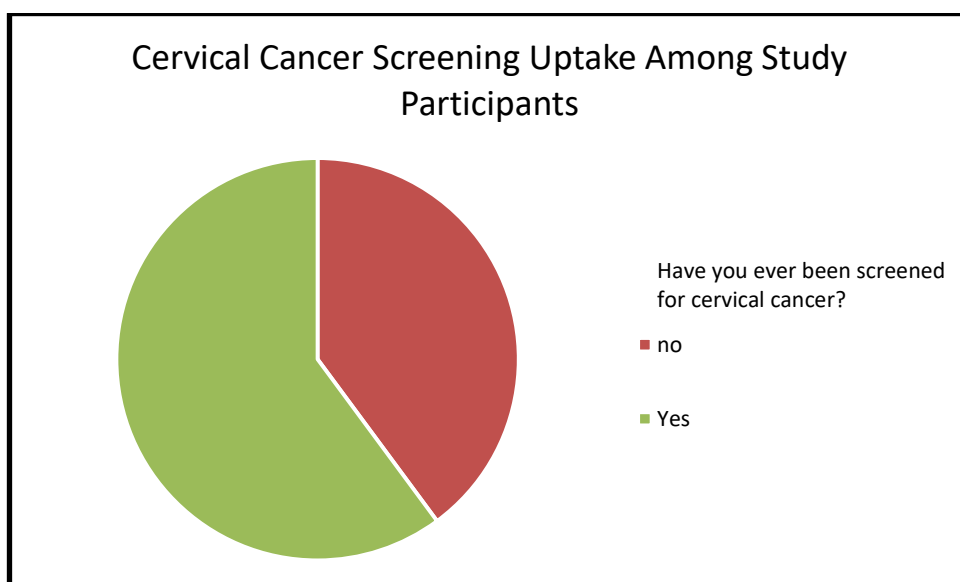
Figure 4: Cervical Cancer Screening Uptake among Study Participants.

On analysis of level of cervical cancer screening within specific sociodemographic groups (Table 7), it was noted that 55.6% of married participants, 75.6% of urban participants, and 65% of participants with tertiary level education had ever been screened for cervical cancer. All the participants who reported an HIV positive status also reported having been screened for cervical cancer. This may be attributable to the close tracking of cervical cancer screening in HIV positive patients. In terms of household monthly income, only 3 participants reported a monthly income of above $1000, and all of them had been screened for cervical cancer. However, only 12.5% of participants with a household monthly income in the range $501 to $999 had ever been screened for cervical cancer.

Table 7: Proportion of participants ever screened for cervical cancer.

| Variable | Category | Have you ever been screened for cervical cancer? | | | |
| | | No | | Yes | |
		Count	Row N %	Count	Row N %
What is your marital status?	Married	52	44.4%	65	55.6%
	Single	3	27.3%	8	72.7%
	Widow	3	27.3%	8	72.7%
	Divorced	0	0.0%	9	100.0%
	on separation	5	50.0%	5	50.0%
What is your religion?	Christianity	61	39.9%	92	60.1%
	Islam	0	0.0%	3	100.0%
	Traditional	2	100.0%	0	0.0%
	Other	0	0.0%	0	0.0%
What is the highest level of education you have completed?	no education	0	0.0%	0	0.0%
	primary school	4	66.7%	2	33.3%
	Secondary level	52	39.4%	80	60.6%
	Tertiary level	7	35.0%	13	65.0%
Where do you stay	Rural area	33	56.9%	25	43.1%
	Peri urban area	13	43.3%	17	56.7%
	Urban area	17	24.3%	53	75.7%
What is your HIV status	Unknown	0	0.0%	0	0.0%
	Positive	0	0.0%	27	100.0%
	Negative	63	48.1%	68	51.9%
What is your monthly household income?	less than $50	13	59.1%	9	40.9%
	$51-200	22	28.2%	56	71.8%
	$201-500	15	34.1%	29	65.9%
	$501-999	7	87.5%	1	12.5%
	more than $1000	3	100.0%	0	0.0%
	I don't know	3	100.0%	0	0.0%

The low-income participants with a monthly household income below $50 had a cervical cancer screening uptake rate of 40.9%, which is lower than the WHO target of 75%.

4.2.3 Motivating factors for participants ever screened for cervical cancer

Participants indicated that they were mainly self-motivated (36%) to seek cervical cancer screening, followed by encouragement by health workers (35%) to be screened for cervical cancer as show on Figure 4 below. This is congruent with the constructs of the health belief model, where the individual's beliefs and cues lead to seeking specific health service.
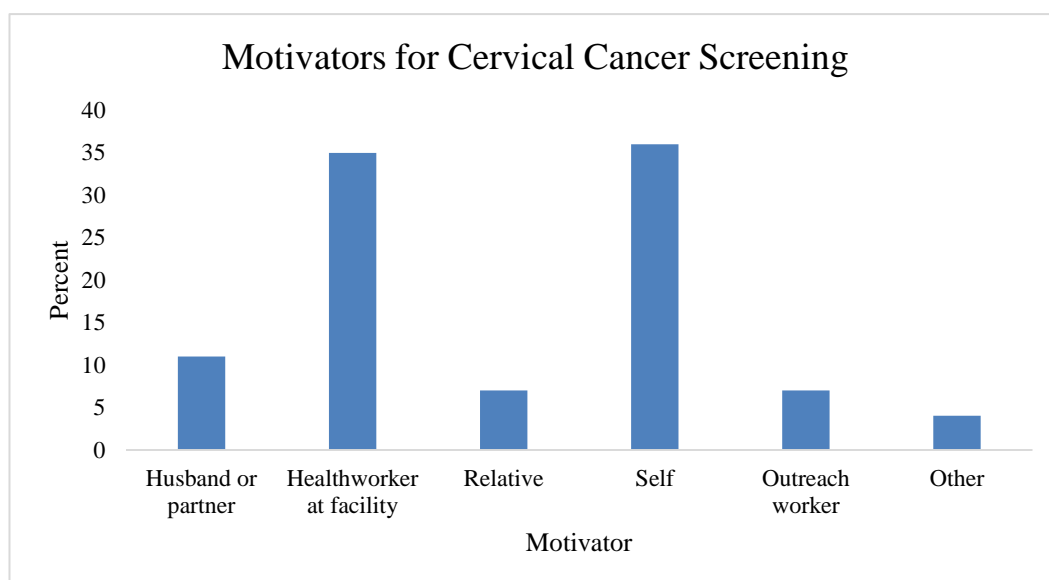
Figure 5: Motivators for Cervical Cancer Screening.

4.2.4 Behavioral factors related to cervical cancer screening

Approximately 91.8% (n=145) of the participants indicated that they had heard about cervical cancer at some point in their lives. On elicitation for information about the signs and symptoms of cervical cancer, participants showed low levels of knowledge. Most of the participants demonstrated lack of confidence articulating the possible signs and symptoms of cervical cancer, despite the high proportion of women who had

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professed having heard of cervical cancer. This may be an indication that messages on cervical cancer may be too shallow, or they may be spaced apart such that they become ineffective at delivering sufficient knowledge to the target population. Table 8 below summarises data analysis of questions assessing knowledge of participants of the signs and symptoms of cervical cancer.

Table 8: Participants 'Knowledge of Signs and Symptoms of cervical cancer.   `

Symptom mentioned	Count	N %
No symptoms at early stage	10	6.3
Blood spots or light bleeding between or following periods	37	23.4
Bleeding after sexual intercourse	4	2.5
Bleeding after menopause	6	3.8
Pain during sexual intercourse	25	15.8
Don't know	76	48

Table 9 below summarises data on knowledge of the preventive measures against cervical cancer known by participants. There was indication of low knowledge levels of some of the risk reduction and preventive measures. 31% of participants correctly identified that cervical cancer screening is a preventive measure against cervical cancer. The knowledge levels pertaining to preventive measures was in contrast with the lack of knowledge of signs and symptoms of cervical cancer. It is possible that the question on signs and symptoms may have been perceived as too academic, resulting in participants being cautious in giving responses. Similarly, a study on cervical cancer screening in Southern Malawi showed knowledge of Cervical Cancer symptoms was low at 34.4% (Gerstl et al., 2022).

Table 9: Knowledge of Prevention of Cervical Cancer

Preventive measure mentioned	Count	Column N %
Avoiding multiple sexual partners	43	27.2
Avoiding early sexual exposure	10	6.3
Using condoms	45	28.5
Regular cervical screening	49	31.0
Limiting number of children	4	2.5
Male circumcision of partner	10	6.3%

Figure 5 below shows knowledge scores on the methods of cervical cancer screening mostly used in Zimbabwe. The majority of participants mentioned VIAC as a method of cervical cancer screening that they knew of, reflecting the fact that VIAC, the cheapest method of cervical cancer screening is well known among the target population.
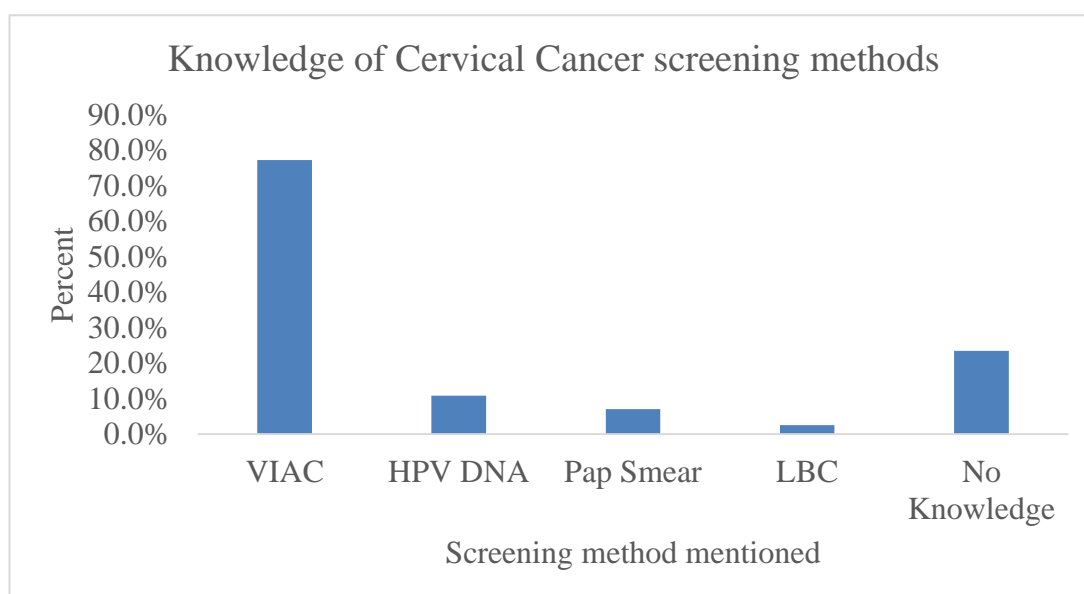
Figure 6: Knowledge of cervical cancer screening methods

4.2.5 Facilitating factors for Cervical cancer screening

Analysis of association was significant between ever having been screened, and variables assessing perceived benefits of cervical cancer screening as follows; Cervical cancer screening helps in the prevention of cervical cancer (p<0.001); it is important to be screened for cervical cancer (p<0.001); Cervical cancer can be cured if diagnosed early (p<0.001). Health seeking behaviour was also found to be significantly associated with ever having been screened for cervical cancer (p=0.039) as shown on Table 10 below.

Table 10: Chi-Square test for association of ever being screened with facilitating factors.

Variable		Have you ever been screened for cervical cancer?
Cervical cancer is highly prevalent in Zimbabwe and is a leading cause of death among women in Zimbabwe.	Chi-square	8.314
	Df	3
	Sig.	.040
I am susceptible to getting cervical cancer?	Chi-square	16.315
	Df	4
	Sig.	.003
It is important to be screened for cancer of the cervix.	Chi-square	34.701
	Df	2
	Sig.	<.001
Cervical cancer screening helps in the prevention of cervical cancer.	Chi-square	37.018
	Df	3
	Sig.	<.001
Cervical cancer can be cured if diagnosed early.	Chi-square	9.145
	Df	3
	Sig.	.027
Where do you usually seek care first when you are sick?	Chi-square	10.100
	Df	4
	Sig.	.039

Chi squared test was significant (p= 0.003) for perceived risk of cervical cancer through asking whether the participant agreed that she was susceptible to cervical cancer. Logistic regression analysis was done, and the results are shown on Table 11.

Table 11: Logistic regression for facilitating factors.

Variable	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Cervical cancer is highly prevalent in Zimbabwe and is a leading cause of death among women in Zimbabwe.	.711	.354	4.035	1	.045	2.036	1.017	4.074
I am susceptible to getting cervical cancer?	-.814	.287	8.060	1	.005	.443	.253	.777
It is important to be screened for cancer of the cervix.	-.666	.390	2.923	1	.087	.514	.239	1.103
Cervical cancer screening helps in the prevention of cervical cancer.	-.893	.265	11.370	1	<.001	.410	.244	.688
Cervical cancer can be cured if diagnosed early.	.362	.338	1.150	1	.283	1.437	.741	2.785
Where do you usually seek care first when you are sick?	-.244	.158	2.392	1	.122	.783	.574	1.068
Constant	3.584	.769	21.753	1	<.001	36.035		

Perceived susceptibility to cervical cancer was found to be a significant predictor of cervical cancer screening uptake, (OR= 0.5 CI [0.3,0.8] p<0.001), of being screened for cervical cancer, making it a facilitator of cervical cancer screening. However, the odds ratio below 1 indicates that as the perceived susceptibility to cervical cancer decreases (responses were coded from 1 to 5 from agree to strongly disagree), the odds of cervical cancer screening are lower. Perceived benefit of cervical cancer screening through assessment of the variable assessing whether participants believed that cervical cancer screening helps in the prevention of Cervical cancer was also a predictor of cervical cancer screening (OR=0.4, CI [0.2,0.7] p<0.001).

4.2.6 Perceived Barriers to cervical cancer screening

Table 12 below shows responses from participants who indicated that they had never been screened for cervical cancer. The most commonly cited barrier leading to lack of cervical cancer screening was lack of knowledge of cervical cancer screening. About 12.7% of participants who had never been screened for cervical cancer indicated that they did not go for cervical cancer screening as they were not feeling sick. This indicates a gap in patient education, where patients have to be informed that screening for cervical cancer does not have to be delayed until one is experiencing signs and symptoms that they deem to be concerning. It is quite worrisome that 17.1% of those who had never been screened, had no concrete reason as to why they had not been screened. These participants represent a section of the population who are a low hanging fruit in terms of marketing cervical cancer screening. They do not have overwhelming barriers to accessing cervical cancer screening but may simply never have been presented with an opportunity to be screened.

Table 12: Perceived Barriers to screening in participants never screened.

Perceived Barrier	Count	Column N %
Lack of knowledge	32	20.3%
Embarrassed of the screening process	6	3.8%
Lack of money for screening	9	5.7%
I have no ailments	9	12.7%
Afraid of a cervical cancer diagnosis	9	5.7%
Fear of the screening procedure	3	1.9%
No specific reason	27	17.1%

All participants were asked questions pertaining to perceived barriers to cervical cancer screening, regardless of whether they had aver accessed cervical cancer screening or not. Table 13 below shows results for the Chi-square test of association between ever having been screened for cervical cancer and perceived barriers to cervical cancer screening. All the five perceived barriers assessed were significantly associated with cervical cancer screening uptake; Do you think cervical screening is painful? ($p < 0.001$); Do you find cervical screening embarrassing ($p < 0.001$); Does your religion have anything against cervical screening ($p = 0.008$); Is cervical screening expensive? ($p < 0.001$) Is the transport system to the health facility good? ($p = 0.033$). Logistics regression analysis was done for all perceived barriers to cervical cancer, and two factors were found to be significant predictors of cervical cancer screening. Significant perceived barriers to cervical cancer screening were the belief that cervical cancer screening is painful (OR=0.3, CI [0.1; 0.9] $p < 0.001$), and the notion the cervical cancer screening is expensive (OR=0.1 CI [0.1; 0.2] $p < 0.001$).

Table 13: Chi-square test for association between perceived barriers and cervical cancer screening.

Variable		Have you ever been screened for cervical cancer?
Do you think cervical screening is painful?	Chi-square	87.551
	Df	2
	Sig.	<.001
Do you find cervical screening embarrassing?	Chi-square	59.556
	Df	2
	Sig.	<.001
Does your religion have anything against cervical screening?	Chi-square	9.589
	Df	2
	Sig.	.008
Is cervical screening expensive?	Chi-square	100.385
	Df	2
	Sig.	<.001

Therefore, these two factors are significant barriers of cervical cancer screening, and health workers need to target patients with information to address myths and misconceptions about cervical cancer screening procedure. Women who have low perceived barriers have been found to be 4.39 times more likely to have cervical cancer screening uptake compared to their counterparts (Yirsaw et al., 2024). The fact that some participants wrongly assumed that VIAC was expensive, yet VIAC services are provided free of charge at VCPH shows that the hospital, and the Ministry of health and Child Care at large may not be disseminating enough information to the public concerning the accessibility of VIAC and other cervical cancer screening modalities. Table 14 below summarises the results of the logistics regression analysis for perceived barriers of cervical cancer screening.

Table 14: Regression Analysis for perceived barriers to cervical cancer screening.

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Do you think cervical screening is painful?	-1.148	.577	3.959	1	.047	.317	.102	.983
Do you find cervical screening embarrassing	.855	.661	1.672	1	.196	2.351	.643	8.592
Does your religion have anything against cervical screening	.895	.593	2.281	1	.131	2.447	.766	7.818
Is cervical screening expensive?	-2.713	.475	32.548	1	<.001	.066	.026	.169
Constant	5.461	1.346	16.473	1	<.001	235.409		

4.2.7 Health service factors associated with cervical cancer screening uptake

The study assessed the association of health service factors such as transport system to the health facility where cervical cancer screening is done, cost of cervical cancer screening and availability of time for one to receive cervical cancer screening. Gerstal et al. (2022) demonstrated similar findings in Southern Malawi, where the main barriers were lack of time and lack of motivation. All three health service factors analyzed were found to have significant association with cervical cancer screening uptake in participants. The issue of cost was cited as a barrier to cervical cancer screening (OR=0.1, CI [0.1, 0.2] p<0.001), and the association was significant.

Table 15: Association between health service factors and cervical cancer screening uptake.

Variable	Statistic	Have you ever been screened for cervical cancer?
Is cervical screening expensive?	Chi-square	100.385
	Df	2
	Sig.	<.001
Is the transport system to the health facility good?	Chi-square	6.807
	Df	2
	Sig.	.033
Do you have time for cervical screening?	Chi-square	42.238
	Df	2
	Sig.	<.001

The role of health workers in information dissemination was also assessed as part of the health service factors affecting cervical cancer screening uptake. Descriptive analysis results of Table 16 below show that 66.3% of the participants who had ever heard about cervical cancer and were screened for cervical cancer, had obtained information from a health worker. Health workers were also among the biggest motivators of participants who had ever been screened for cervical cancer. 35% of participants who had ever been screened for cervical cancer reported having been motivated by a health worker. In addition, about 7% of participants who had ever been screened for cervical cancer had been motivated by an outreach worker to get screened. These findings demonstrate that health workers are crucial in information dissemination in communities. Similar findings were found in a study by Gerstal et al. (2022), 49.9% of participants reported that recommendation in the health facility was the main reason they were screened.

Table 16: Analysis of patients who received information from health workers.

Variable	Category	Variable	Category	No Count	No Column N %	Yes Count	Yes Column N %
				Have you ever been screened for cervical cancer?			
Have you ever heard about cervical cancer?	Yes	Did you hear about cervical cancer from a health worker	No	21	42.0%	32	33.7%
			yes	29	58.0%	63	66.3%
	No	Did you hear about cervical cancer from a health worker	No	13	100.0%	0	0.0%
			yes	0	0.0%	0	0.0%

Chi-square test for association showed significant association between having been screened for cervical cancer with having heard of cervical cancer from a health worker (p=0.011), having heard of VIAC from a health worker (p<0.001) and having heard of cervical cancer from an outreach worker (p=0.027) as depicted on Table 17 below.

Table 17: Association between cervical cancer screening and health worker factors.

Variable		Have you ever been screened for cervical cancer?
Did you hear or know about VIAC/ other methods of cervical cancer screening from a health worker.	Chi-square	17.572
	Df	1
	Sig.	<.001
Did you hear about cervical cancer from a health worker.	Chi-square	6.408
	Df	1
	Sig.	.011
Did you hear about cervical cancer from an outreach.	Chi-square	4.872
	Df	1
	Sig.	.027

On regression analysis, having heard about VIAC or other methods of cervical cancer screening was a significant facilitator of cervical cancer screening, with an odd ratio of 4.2 (95% CI [1.9, 8.9] p<0.001). This reflects the important role that health workers play in increasing cervical cancer screening coverage. Most women who are eligible for screening depend on health workers to give them comprehensive information on cervical cancer and cervical cancer screening to make informed choices on cervical cancer screening. Winarti et al. (2020), also highlighted the importance of referrals from health workers in patients who reported having been screened for cervical cancer.

Table 18: Regression analysis of cervical cancer screening and health worker issues.

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Did you hear or know about VIAC/ other methods of cervical cancer screening from a health worker.	1.412	.393	12.913	1	<.001	4.106	1.900	8.871
Did you hear about cervical cancer from a health worker.	.317	.374	.718	1	.397	1.373	.659	2.861
Did you hear or know about VIAC/ other methods of cervical cancer screening from an outreach worker.	.508	.488	1.082	1	.298	1.662	.638	4.327
Constant	-.514	.295	3.039	1	.081	.598		

The issue of having enough time to access cervical cancer screening services was a significant barrier to cervical cancer screening as summarised on Table 17, (OR =0.2, CI [0,1;0.1] p<0.001). This may likely be due to misconceptions about the time taken to undergo cervical cancer screening services. Participants may also not be aware of self-administered cervical cancer screening method such as HPV DNA, which considerably shorten the time of service provision required for cervical cancer screening.

Table 19: Regression analysis of health service factors affecting cervical cancer screening uptake.

| Variable | B | S.E. | Wald | df | Sig. | Exp(B) | 95% C.I.for EXP(B) | |
							Lower	Upper
Is cervical screening expensive?	-2.956	.509	33.745	1	<.001	.052	.019	.141
Is the transport system to the health facility good?	-.074	.610	.015	1	.903	.929	.281	3.072
Do you have time for cervical screening?	-4.909	1.190	17.023	1	<.001	.007	.001	.076
Constant	12.656	1.990	40.445	1	<.001	313653.626		

4.2.8 Results from Key Informant Interviews

The researcher conducted key informant interviews on VCPH hospital staff stationed in the FCH, OI Clinic and Outpatients department on the days when data collection was being done. Only consenting key informants were interviewed and their responses

were recorded. A total of 16 key informants were interviewed, of which 13 were of female gender (81%) and 3 were males (19%). The interviewer and research assistant both listened to all interview recordings and read through written interview responses. The interviewer proceeded to come up with themes and coded them in excel. The interview responses were entered into Excel and coded themes were analyzed in Excel. and key themes that emerged were documented.

The key informants cited barriers which they felt were slowing down progress of VCPH and the MoHCC in their bid to achieve at least 70% cervical cancer screening coverage.

Lack of knowledge of cervical cancer and cervical cancer screening among women was a significant barrier identified by key informants.

"Women do not know why it is important for them to be screened for cancer at regular intervals. As health workers, we must identify opportunities to educate women of all ages on the importance of cervical cancer screening."Doctor VCPH

However, one key informant noted that there is a knowledge gap in women who are HIV negative. He noted that women outside of the OI clinic setting were not actively offered VIAC services, and the choice to seek services was influenced by prior knowledge and personal experiences of individual women.

"Women on ART are very knowledgeable on cervical cancer and are likely to seek screening services. The same cannot be said for women seeking other services for example in OPD."

Reluctance to be screened for cervical cancer among women was cited as a significant barrier by several key informants. One key informant suggested that there is need to research why women are not keen to undergo cervical cancer screening to allow health

workers to address gaps, myths and misconceptions leading to poor health seeking among women eligible for cervical cancer screening. The fear of diagnosis of cervical cancer, compounded by fear that there is no available treatment if one is diagnosed was identified as a possible explanation for the lack of zeal in seeking cervical cancer screening services. This is worsened by the fact that cervical cancer treatment, when available, is financially burdensome.

"*Patients will sometimes tell you that they would rather not know whether they have cancer or not. I have been asked by some patients whether treatment of cervical cancer is also free of charge. This issue of the expensive nature of cancer treatment may be one of the reasons why some women choose not to be screened.*"

Facilitators and opportunities to increase cervical cancer screening coverage were also identified. A recurring theme was that a major facilitating factor enabling patients to access cervical cancer screening was OI/ART clinic enrolment and service provision for those who are HIV Positive. Key informants all concurred that women who are on ART are educated about the importance of routine cervical cancer screening as part of service provision, thereby making them likely to seek timely cervical cancer screening. The model used for cervical cancer screening and monitoring in HIV positive patients should ideally be adopted for HIV negative women. Opportunities exist for cervical cancer screening promotion in Non communicable disease management settings. An example would be leveraging on the existing Diabetes management clinic, to amplify messaging on the importance of screening and turn around the poor cervical cancer screening coverage observed at VCPH.

The provision of free cervical cancer screening services was viewed as a facilitating factor for women to seek cervical cancer screening services. Key informants echoed

the sentiment that cost of accessing health services presented a crucial barrier against health seeking and concurred that the cost-free nature of cervical cancer screening at most government facilities could be a factor that works in favor of women deciding to seek cervical cancer screening.

"Many Zimbabwean women are living in poverty, and one issue that encourages women free to come for VIAC is that it is offered free of charge."

Several key informants cited the provision of outreach services offered in rural and urban settings by MOHCC and different partners in Manicaland as a significant facilitator of cervical cancer screening health seeking. Informants noted that it was important to take services to the targeted recipients to make screening as convenient as possible.

"Outreach services are crucial for marginalized groups, as they often lack access to healthcare facilities. Mobile clinics or community health workers can play a significant role in providing cervical cancer screening and education directly in underserved areas. Additionally, tailored health education programs that address the specific cultural and social contexts of these groups are essential. For example, integrating traditional healers into the healthcare system could help bridge the gap between modern healthcare and cultural beliefs."

Closing the knowledge gap was identified as a priority in improving uptake of cervical cancer screening by women. Educating women and girls about the dangers of cervical cancer and the importance of being screened should take center stage. One key informant noted that MOHCC must invest in awareness raising campaigns on radio and social media platforms, as well as distributing IEC material at health facilities.

"Girls must be educated about the importance of cervical cancer screening starting from an early age. This is not solely the responsibility of MOHCC, other stakeholders such as the education sector should prioritize teaching girls about cervical cancer and cervical cancer screening."

Provision of free or subsidized cervical cancer treatment services was identified as an important theme when key informants were asked about possible areas of improvement for the health sector. Key informants appreciated the importance of free screening services but suggested that this should be matched by investing in ensuring availability of key cervical cancer treatment modalities such as chemotherapy and radiotherapy.

"Most women cannot afford to pay for cervical cancer treatment. For those who have the money, services such as Radiotherapy are not easily accessible, and patients have to travel to Harare for treatment."

Improving the availability of all cancer treatment modalities such as chemotherapy and radiotherapy will contribute to improving the uptake of cervical cancer screening. Patients will have the assurance that solutions are available and easily accessible, in case they are diagnosed with cervical cancer.

4.3 Discussion and Interpretation

A significant portion (91.8%) of the women had heard about cervical cancer at some point in their life. These findings contrast with results from a study in Nigeria which showed that only 78.5% of the participants were aware of cancer of the cervix (Uchendu et al., 2021). Another study conducted in Tanzania had a similar proportion of women with cervical cancer awareness (90%) (Kimondo et al.,2021), showing that generally women have had exposure to information on cervical cancer screening.

However, knowledge levels take a dip when we look at knowledge of cervical cancer screening methods. VIAC, the best known method among the study participants was known by 77.2% of the study participants. Pap smear on the other hand was only known to 7% of the participants. These results follow a similar pattern to the study by Uchendu et al. 2021, where about 44% had knowledge of the pap smear. In Zimbabwe, VIAC is the most commonly utilised screening method, with the LBC, PAP smear and LBC only being done in the private sector, therefore accounting for the poor knowledge of other methods of screening.

This study demonstrated significant association of cervical cancer screening uptake with a high perceived benefit of cervical cancer screening. This finding tallies with other studies which also demonstrate a positive correlation between perceived benefit of cervical cancer screening and getting screened. Studies have shown that even though most of the participants had adequate knowledge of the benefits of a Pap smear and a high perception of the benefits of screening, the perceived benefits of cervical cancer screening were not predictive for the uptake of cervical cancer (Al Amro et al., 2020). However, our findings suggest that perceived benefit of cervical cancer screening through assessment of the variable assessing whether participants believed that cervical cancer screening helps in the prevention of Cervical cancer was also a predictor of cervical cancer screening (OR=0.4, CI [0.2,0.7] p<0.001).

4.4 Summary

This chapter presented the study findings in line with the research questions. Data was presented using frequency tables and graphs, Inferential statistics were also done, using bivariate analysis to determine the association between different variables. About 90.1 % of participants had heard of cervical cancer. 60.1% of participants had

ever been screened for cervical cancer. The highest predictors of cervical cancer screening was having heard about VIAC or other methods of cervical cancer screening, with an odds ratio of 4.2 (95% CI [1.9, 8.9] p<0.001), and place of residence (OR= 1.9, CI [1.2,3.0] p=0.005). High perceived benefit of cervical cancer screening (OR=0.4, CI [0.2,0.7] p<0.001), and perceived susceptibility to cervical cancer, (OR= 0.5 CI [0.3,0.8] p<0.001) were significant behavioral factors affecting cervical cancer screening uptake. The sociodemographic predictors of cervical cancer screening were employment status (OR= 0.4, CI [0.3, 0.8] p = 0.005), and level of income (OR=0.6, CI [0.4,1.0] p=0.055). Key barriers to cervical cancer screening included lack of knowledge, the belief that cervical cancer screening is painful (OR=0.3, CI [0.1; 0.9] p<0.001), and the notion the cervical cancer screening is expensive (OR=0.1 CI [0.1; 0.2] p<0.001). The study findings were also discussed in relation to similar studies looking at cervical cancer screening uptake. In the following chapter, the study is summarized, conclusions are drawn from the study results and recommendations are outlined for future strategic planning and programming.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter highlights the summary of the whole study, the conclusion considering the findings and the recommendations. The study sought to answer the following research questions:

1) What are the socio-demographic factors associated with cervical cancer screening uptake among women aged between 18 and 49 seeking services at VCPH Mutare.

2) What is the proportion of women aged between 18 and 49 seeking services at VCPH, Mutare who have ever been screened for cervical cancer?

3) What are the behavioural factors and facilitating that are associated with cervical cancer screening uptake among women seeking services at VCPH, Mutare?

4) What are the barriers associated with cervical cancer screening uptake among women seeking services at VCPH, Mutare?

Data from VCPH shows that cervical cancer screening of all eligible women aged 18 to 49 years was low for the period January to June 2024. A cervical cancer screening coverage of 34% was found at VCPH for the age group under consideration. Such a low cervical cancer screening rate of 34% is quite disheartening, considering that Zimbabwe is aiming to achieve the WHO Global Strategy targets towards elimination of cervical cancer, which seeks to ensure that 70% of women are screened with a high-performance test by 35 years of age and again by 45 years of age. A mixed method, cross sectional study was conducted at VCPH, a provincial referral hospital that offers cervical cancer screening services in Mutare urban. The source population of this study

was female patients aged 18 to 49 years accessing services at VCPH. A total sample size of 158 participants was used for this study. Convenience sampling was used in selection of the participants was done at VCPH. 16 consenting staff members were interviewed as key informants to gain in-depth insights on the facilitators and barriers to cervical cancer screening. Data was collected using an interviewer administered structured questionnaire and a key informant interview guide was used to conduct key informant interviews. Data was analysed using SPSS version 28.

5.2 Discussion

Cervical cancer screening rate was 60.1%. This cervical cancer screening rate was much higher than the 34% rate identified from analysis of VCPH statistics for 2024. This may be due to the fact the study was conducted in OPD, FCH, VIAC and OI clinic, where patients are likely to be ambulatory and may well be seeking cervical cancer screening services. This finding may also be due to social desirability bias, leading patients to report what they perceive as socially acceptable screening uptake.

The level of awareness of the existence of cervical cancer was high (91.8%), showing that the target population has potential to pay attention to more detailed patient education programs targeted at improving cervical cancer screening coverage. There was indication of low knowledge levels of risk reduction and preventive measures. 31% of participants correctly identified that cervical cancer screening is a preventive measure against cervical cancer. Targeted patient education is likely to make a difference in increasing percentage of women screened for cervical cancer, considering that with such moderate knowledge levels, the rate of screening was at 60.1%.

Participants with a high perceived risk of cervical cancer, and high perceived benefit of cervical cancer screening were shown to be more likely to have accessed cervical cancer screening. The same follows for those with a high-risk perception for cervical cancer, even though the correlation was weak. These findings are a clear indication that the MoHCC should garner resources to invest in effective patient education programs targeting cervical cancer screening. Facilitators for cervical cancer screening included having knowledge of cervical cancer screening, as well as motivation from health workers.

Barriers to cervical cancer screening include lack of knowledge of cervical cancer screening, fear of VIAC positive results and having a low-risk perception. About 12.7% of participants cited not being ill as a reason for not seeking cervical cancer screening services, which indicates a serious knowledge gap that needs to be addressed.

In this study, factors such as poor transportation and cost of cervical cancer screening had no significant correlation with cervical cancer screening uptake. This may be because the participants were mainly from urban areas where transport to health facilities is not a significant issue.

5.3 Conclusions

The determinants found to be associated with poor cervical cancer screening uptake in this study include young age, low risk perception of cervical cancer, lack of knowledge of cervical cancer and having high perceived barriers to cervical cancer screening. Facilitators of cervical cancer screening identified were having heard about VIAC or other methods of cervical cancer screening from a health worker, being resident in an urban area, perceived benefit of cervical cancer screening. Cervical cancer is highly

preventable with the use of cost-effective measures aimed at improving awareness of the importance of screening, and dispelling myths and misconceptions surrounding screening procedures.

5.4 Implications

The study findings have clearly demonstrated that most women are aware of cervical cancer. However, they lack sufficient knowledge to be empowered to overcome perceived barriers, fears and misconceptions pertaining to the screening of cervical cancer. It is also evident that 48% of women have no knowledge of cervical cancer signs and symptoms.

The practical implications of these findings are that the current patient education modalities are coming short of increasing cervical cancer screening. This means that the health sector needs to review its cervical cancer screening tools, their content and their relevance to different population categories. The study findings demonstrated that women from rural communities are less likely to ever have been screened for cervical cancer, though they had good cervical cancer awareness levels. It is imperative for program designers to design promotional materials and screening tools that appeal to different audiences, rather than utilizing a one size fits all approach.

Development of new Information, Education and Communication (IEC) materials and training nurses and other health workers on effective communication strategies has cost implications. Policy makers and community-based organizations need to lobby for funding to develop a comprehensive Communication strategy to address cervical cancer screening. Having heard of VIAC or other cervical cancer screening methods from a health worker was shown to be a major motivating factor for patients to seek cervical cancer screening services. Approaches such as employing community/Village

Health Workers to distribute simple IEC material within their communities would provide much needed interface with health workers for non-HIV positive patients. In the case of patients on chronic medication for chronic NCDs, their medicine resupply days are a window of opportunity for health workers to offer them cervical cancer screening services. These approaches, however, need serious commitment at a policy making level, as well as service integration and flexibility at service provision level.

5.5 Recommendations

From the study findings, several recommendations may be drawn to improve cervical cancer screening uptake among women aged 18 to 49 years of age:

1) Design and distribute IEC material to raise awareness on the importance of cervical cancer screening, as well as to address myths and misconceptions about cervical cancer screening.

2) Increase access to a variety of cervical cancer screening methods such as self-administered HPV DNA screening, to offer a wide array of choices for patients. Fear of the cervical cancer screening procedure was among the barriers of cervical cancer screening identified by the study.

3) Advise the medical superintendent to engage policy makers within MoHCC to lobby for funding directed at developing and implementing an effective cervical cancer screening communication strategy.

4) Encouragement by health workers was a key facilitator of cervical cancer screening. Rural health centers can utilize community health workers to distribute IEC material and educate women on the importance f cervical cancer screening.

The recommendations, expected time of implementation and persons responsible for implementation are summarised in Table 20 below.

Table 20: Recommendations

Recommendation.	Responsibility.	Timeframe
• Strengthen Awareness and Education of patients on cervical cancer and cervical cancer screening.	VCPH Medical Superintendent. Provincial Health Promotion officer.	30 May 2025
• Target High-Risk Groups for Screening such as women under 30 years of age.	VCPH Matron VIAC nurses	30 May 2025.
• Develop and implement a cervical cancer screening communication strategy.	MoHCC, Family health Director.	April 2026.
• Utilize village health workers and community health workers to distribute IEC materials to promote cervical cancer screening in rural areas.	MoHCC, PMDs, District Medical Officers.	June 2025
• Increase access to a variety of cervical cancer screening methods such as self-administered HPV DNA screening, to offer a wide array of choices for patients.	VCPH Medical Superintendent, Natpharm.	December 2025.

5.6 Suggestions for further research

Further research needs to be conducted on the acceptability and feasibility of utilizing the newer methods of cervical cancer screening such as self-administered HPV DNA screening. It is important to generate scientific evidence as to whether having a variety of cervical cancer screening methods will result in the improvement of cervical cancer screening in populations such as rural dwellers. Further research also needs to be conducted as part of the process to design patient IEC materials, which take into account the needs of different communities.

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Appendix 1: English Questionnaire

Study Topic: Barriers And Facilitators of Cervical Cancer Screening Among Women Aged Between 19 And 49 Seeking Services at VCPH, Mutare, 2025.

Dear participant, my name is Ratidzai Sarai. I am a student at Africa University, studying for Masters in Public health. I must conduct research as the requirement of my studies. This study is looking at the Barriers and Facilitators of cervical cancer screening uptake among women aged 18 to 49 years seeking health services at Victoria Chitepo Provincial hospital, Mutare, 2025. It is for academic purposes. You have been selected to participate in this study. All the information you provide will remain confidential. Only the study team will have access to this information, and it will be kept confidential unless your express permission is obtained. This will not affect the services you are receiving. Your name will not appear anywhere in this study. If you have any questions regarding this study, you can use the contact below.

College of Health, Agriculture and Natural Sciences.

Research Supervisor: Dr A. Kapfunde

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Mobile: **0775 614 003**

IDENTIFICATION INFORMATION

Questionnaire number: _____

Interviewer   : _____

Date of interview   : Date_____ Month _____ Year _____

Section 1 –Knowledge of Cervical Cancer		
Question Number	**Question**	**Answer**
1	Have you ever heard about cervical cancer?	0. No 1. Yes
2	If yes, how did you come to know about cervical cancer? (Multiple responses)	1 Television 2 Radio 3 Newspaper 4 Health personnel- outreach 5 Relatives 6 Friends 7 Clinic/Hospital 8 Others (specify)
3	What are the signs and symptoms of cervical cancer? (Multiple responses)	1. No symptoms at early stage 2. Blood spots or light bleeding between or following periods 3. Bleeding after sexual intercourse 4. Bleeding after menopause 5. Pain during sexual intercourse 6. Increased vaginal discharge 7. Others (specify) 8. I don't know.

4	Have you heard about Human papilloma virus infection.	1 Yes 2. No

5	How is Human Papilloma Virus transmitted?	1 Air pollution 2 Water pollution 3 Sexual contact. 4 Don't Know

Section 2: Knowledge of cervical cancer Prevention.

6	How can cervical cancer be prevented? (circle multiple responses as given).	1.Avoiding multiple sexual partners 2. Avoiding early sexual exposure 3. Using condoms 4. Regular cervical screening 5. Limiting number of children. 6.Male circumcision 7. Other- specify 8. I Don't know

Section 3: Knowledge about cervical cancer screening

7	List the methods that can be used to screen for cervical cancer that you know of.	1. VIAC 2. HPV DNA 3. PAP SMEAR 4. LBC 5. Don't know
8	If yes, how did you hear or know about VIAC/ other methods of cervical cancer screening.	1.Television 2.Radio 3.Newspaper

		4.Health personnel
		5.Relatives
		6.Friends
		7.Outreach worker

Section 4: Perceived risk of cervical cancer.

10	Cervical cancer is highly prevalent in Zimbabwe and is a leading cause of death among women in Zimbabwe.	1. Strongly agree. 2. Agree. 3. Neither agree nor disagree. 4. Disagree. 5.Strongly disagree.
11	Do you think you are susceptible to cervical cancer?	1. Strongly agree. 2. Agree. 3. Neither agree nor disagree. 4. Disagree. 5.Strongly disagree.
12	It is important to be screened for cancer of the cervix.	1. Strongly agree. 2. Agree. 3. Neither agree nor disagree. 4. Disagree. 5.Strongly disagree.
	Section 5: Perceived Benefits of cervical cancer screening.	
13	Cervical cancer screening helps in the prevention of cervical cancer.	1. Strongly agree. 2. Agree.

		3. Neither agree nor disagree.
		4. Disagree.
		5.Strongly disagree.
14	Cervical cancer can be cured if diagnosed early.	1. Strongly agree.
		2. Agree.
		3. Neither agree nor disagree.
		4. Disagree.
		5.Strongly disagree.

Section 6: Health seeking behaviour

15	Where do you usually seek care first when you are sick?	1. Government clinic or hospital
		2. Private clinic or hospital.
		3. Community health worker
		4. Traditional healer
		5. Faith healer
		6. Pharmacy
		7. other

Section 7: Cervical cancer screening practice.

16	Have you ever been screened for cervical cancer?	0-No
		1. Yes
17	If yes, who encouraged you to go for cervical cancer screening?	1.Husband/ partner
		2.Health worker
		3.Family member

		4.Relatives
		5.Yourself
		6.Friends
		7.Outreach worker
18	At what age, where you first screened for cervical cancer?	Age………
19	How regularly is your cervical cancer screening supposed to be done.	1.Every year 2.Every 2 years 3.Every 3 years 4.Every 5 years or more 5.Dont know
20	When was your last cervical cancer screening done?	1.Less than 1 year ago 2. 1-2 years ago 3. 3-5 years ago 4. More than 5 years ago 5.Other
21	What is the MAIN reason for your last cervical cancer screening? (check only one)	1.Part of routine examination 2.Follow up on abnormal/ inconclusive result 3.Recommended by health-care provider 4.Recommended by other source friends & neighbors 5.Experiencing pain or other symptoms 6.Others

22	If No to question 25, what are the barriers/reasons for not receiving cervical cancer screening?	1.Lack of knowledge about VIAC 2. Embarrassing 3. Economic constraint 4. No symptoms/not feeling any discomfort 5. Afraid of the result 6. No reason
	PERCEIVED BARRIERS OF CERVICAL CANCER SCREENING	
23	Do you think cervical screening is painful?	1. Yes ( ) 2. No ( ) 3. I don't know ( )
24	Do you find cervical screening embarrassing?	1. Yes ( ) 2. No ( ) 3. I don't know ( )
25	Does your religion have anything against cervical screening?	1. Yes ( ) 2. No ( ) 3. I don't know ( )
26	Is cervical screening expensive?	1. Yes ( ) 2. No ( ) 3. I don't know ( )
27	Is the transport system to the health facility good?	1. Yes ( ) 2. No ( ) 3. I don't know ( )

#	QUESTION	Response
28	Do you have time for cervical screening?	1. Yes ( ) 2. No ( ) 3. I don't know ( )

Section 8: Demographic information

#	QUESTION	Response
29	How old are you?	Age ………years
30	What is your marital status?	1. married 2. single 3. widow 4. divorced 5. separated
31	What is your religion?	1. Christianity 2. Islam 3. traditional 4. other
32	What is the highest level of education you have completed?	1. No formal education 2. Primary school 3. Secondary school 4. Tertiary
33	What type of area do you come from?	1. Rural 2. peri urban 3. Urban
34	What is your current job status?	1. Formally employed 2. Self employed 3. Unemployed

35	What is your total household monthly income in USD?	1. Less than 50 2. 51 – 200 3. 201 – 500 4. 501 – 999 5. More than 1000 6. Don't know.
36	Do you smoke cigarettes currently?	1. Yes 2. No
37	What is your HIV status	1. POSITIVE 2. Negative 3. Unknown.

Thank you for taking part in this study.

Appendix 2: Shona Questionnaire

MIBVUNZO YETSVAKURUDZO.

Musoro Wetsvakurudzo: Ongororo maererano nezvikonzero zvinobatsira kana kudzivisa vanhukadzi vane makore gumi nemasere kusvika pamakore makumi mana nemashanu kuti vaongororwe gomarara remuromo wechibereko pachipatare cheVictoria Chitepo Provincial Hospital, maMutare, 2025.

IDENTIFICATION INFORMATION

Questionnaire number: _____

Interviewer   : _____

Date of interview   : Date_____ Month _____ Year _____

Chikamu 1 – Ruzivo pamusoro pegomarara remuromo wechibereko. Komberedzai mhinduro yenyu yamasarudza muchishandisa chinyoreso.		
Question Number	**Mubvunzo**	**Mhinduro**
1	Makambonzwa here nezvegomarara remuromo wechibereko?	1.Hongu 2.Kwete
2	Kana makambonzwa nezvegomarara remuromo wechibereko, makazvinzwa sei/kupi/nani? (Ipai mhinduro dzose dzakafanira)	1 Chivhitivhiti (TV) 2 Redhiyo. 3 Bepanhau 4 Mushandi wezvehutano. 5 Hama 6 Shamwari

		7 Mukuongororwa HIV
		8 Dzimwewo nzira (Nyorai)
3	Ndezvipi zviratidzo zvegomarara remuromo wechibereko zvamunoziva? (Taurai zvese zvamunoziva)	1. Harina zviratidzo kana richiri kutanga. 2. Kubuda ropa usiri kunguva dzemadzimai dzemwedzi. 3. Kubuda ropa pabonde. 4. Kubuda ropa mushure mekuguma ura. 5. Kurwadziwa pakuita bonde. 6. Kubuda mvura kunhengo yesikarudzi. 7. Zvimwewo (Nyorai)
4	Makambonzwa nezvehutachiwana hwe Human papilloma virus (HPV) here?	1. Hongu 2.Kwete
5	Munoziva here kuti Human Papilloma Virus inotapurirwana sei?	1 Mumhepo 2 Mumvura/ muchikafu 3 Pabonde 4 Zvimwewo 5. Handizivi

Chikamu 2: Zvinogona kuitwa kudzivirira njodzi yekubatwa negomara remuromo wechibereko.

| 6 | Ndezvipi zvingaitwe nevanhu kudzivirira gomarara remuromo wechibereko? (Taurai zvose). | 1. Kuvimbika neshamwari imwechete pabonde.

2. Kunonoka kutanga zvebonde

3. Kushandisa dziviriro yemakondomu pabonde.

4. Kuongororwa muromo wechibereko nenguva yakafanira. |

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		5. Kuzvara vana vashoma.
		6. Kuchecheudzwa nhengo kwevarume.
		7. Zvimwewo (taurai)
		8. Handizivi

Chikamu 3: Ruzivo pamusoro pekuongorowa gomarara remuromo wechibereko.

7	Ndedzipi nzira dzamunoziva dzinoshandiswa kuongorora gomarara remuromo wechibereko. (cervical cancer screening methods)	(Tick all mentioned) VIAC HPV DNA PAP SMEAR LBC
8	Ruzivo rwenzira dzekuongororwa dzamataura pamubvunzo watapedzisira makarwuwana nenzira ipi?	1.Chivhitivhiti 2.Redhiyo 3.Bepanhau 4.Mushandi wehutano 5.Hama 6.Shamwari 7.Wezvehutano munharaunda.

Chikamu 4: Maonero pamusoro penjodzi yekubatwa negomarara remuromo wechibereko.

Mibvunzo 5 inotevera yandichabvunza, ndinoda kuti mundiudze kana muchibvumirana nezvandinenge ndataura kana kuti kwete.

10	Gomarara remuromo wechibereko rakatekeshera muZimbabwe, uye riri kuuraya madzimai akawanda muZimbabwe.	1. Ndinobvumirana nazvo zvakanyanya. 2. Ndinobvumirana nazvo. 3. Handizvibvumi kana kuzviramba.

		4. Ndinopokana nazvo.
		5. Ndinopokana nazvo zvakanyanya.
11	Imi pachenyu muri panjodzi yekubatwa negomara remuromo wechibereko.	1. Ndinobvumirana nazvo zvakanyanya.
		2. Ndinobvumirana nazvo.
		3. Handizvibvumi kana kuzviramba.
		4. Ndinopokana nazvo.
		5. Ndinopokana nazvo zvakanyanya.
Chikamu 5: Maonero pamusoro pezvakanakira kuongororwa gomarara remuromo wechibereko.		
12	Zvakakosha kuongororwa gomarara remuromo wechibereko.	1. Ndinobvumirana nazvo zvakanyanya.
		2. Ndinobvumirana nazvo.
		3. Handizvibvumi kana kuzviramba.
		4. Ndinopokana nazvo.
		5. Ndinopokana nazvo zvakanyanya.
13	Kuongororwa muromo wechibereko nenzira kunobatsira pakudzivirira gomarara remuromo wechibereko.	1. Ndinobvumirana nazvo zvakanyanya.
		2. Ndinobvumirana nazvo.
		3. Handizvibvumi kana kuzviramba.
		4. Ndinopokana nazvo.
		5. Ndinopokana nazvo zvakanyanya.

14	Gomarara remuromo wechibereko rinorapika kana rikakasira kubatwa	1. Ndinobvumirana nazvo zvakanyanya.
		2. Ndinobvumirana nazvo.
		3. Handizvibvumi kana kuzviramba.
		4. Ndinopokana nazvo.
		5. Ndinopokana nazvo zvakanyanya

Chikamu 6: Kwamunotsvaga zvehutano.

15	Munonyanya kurapwa kunzvimbo dzipi kana muchinge marwara?	1. kiriniki/chipatara chehurumende.
		2. Puraivheti kiriniki.
		3. Kwambuya kana sekuru utsanana.
		4. Kun'anga.
		5. Kumaporofita
		6. Ku phamarcy.
		7. Kumwewo_____

Chikamu 7: Mibvunzo nezvekuongororwa gomarara remuromo wechibereko.

16	Makamboongororwa muromo wechibereko here?	1. Hongu
		2.Kwete
17	Makakurudzirwa nani kuti muongororwe gomarara remuromo wechibereko?	1.Murume Wangu
		2.Mushandi wehutano
		3. Hama yekumba.
		4.Hama
		5.Ndakazvifunga ndega.
		6.Shamwari

		7.Vanoita zvehutano munharaunda.
18	Makatanga kuongororwa muromo wechibereko muine makore mangani ekuzvarwa.	Age ……..
19	Munofanirwa kudzokorora kuongororwa gomarara remuromo wechibereko nenzira ye VIAC mushure menguva yakareba sei?	1.Gore rega rega 2.papera makore maviri 3.Papera makore matatu 4.Papera makore mashanu kana kudarika. 5.Handizivi
20	Makapedzisira rinhi kutariswa gomarara remuromo wechibereko?	1.Gore harisati rapfuura 2. Mukati memakore maviri apfuura. 3. Makore 3 kusvika 5 4. Makore anodarika mashanu 5.Zvimwewo
21	Ndechipi chikonzero chikuru chakaita kuti mutariswe muromo wechibereko apo makapedzisira kutariswa. (Taurai Chimwechete)	1.Nguva yainge yakwana yekutariswa 2.Zvaitevera kumbobatwa mavambo egomarara. 3.Kukurudzirwa nevehutano. 4.Kukurudzirwa nehama neshamwari. 5. Ndaisanzwa zvakanaka muviri. 6.Zvimwewo.
22	Kana musati mamboongororwa muromo wechibereko, ndezvipi zvikonzero zvinokutadzisai kuongororwa?	1.Kushaya ruzivo rwe VIAC 2. Kunyara kutariswa

		3. Kushaya mari.
		4. Handina panondirwadza muviri wangu.
		5. Ndinotya kubatwa gomarara.
		6. Handina chikonzero.

Chikamu 8: Mibvunzo pamusoro pezvimhingiridzo zvingakutadzisai kuongororwa muromo wechibereko.		
23	Sekuona kwenyu, kuongororwa cervical cancer nenzira ye VIAC kunorwadza here?	1. Hongu ( ) 2. Kwete ( ) 3. Handizivi ( )
24	Sekuona kwenyu, kuongororwa cervical cancer nenzira ye VIAC kunotsverudza/kunonyadzisa here?	1. Hongu ( ) 2. Kwete ( ) 3. Handizivi ( )
25	Chitendero chenyu chinokurambidzai kuongororwa gomarara remuromo wechibereko here?	1. Hongu ( ) 2. Kwete ( ) 3. Handizivi ( )
26	Kuongororwa muromo wechibereko nenzira yeVIAC gomarara remuromo wechibereko kunodhura here?	1. Hongu ( ) 2. Kwete ( ) 3. Handizivi ( )
27	Kusvika pachipatara chino, kana chimwe chipatara chinoita zvekuongorora zviri nyore here muchibva kunzvimbo yamunogara.	1. Hongu ( ) 2. Kwete ( ) 3. Handizivi ( )
28	Munowana here nguva inokwana kuti mukwanise kuenda kuchipatara kunoongororwa gomarara remuromo wechibereko?	1. Hongu ( ) 2. Kwete ( ) 3. Handizivi ( )

Section 8: Demographic information

#	QUESTION	Response
29	Mune makore mangani?	Makore ………
30	Makaroorwa here?	1. Hongu 2. Kwete handina 3. Shirikadzi 4. Takarambana pamutemo 5. Takambosiyana nemurume
31	Chitendero chenyu ndechipi?	1. Chi Kristu 2. Chichawa 3. Zvechinyakare/chivanhu. 4. Zvimwewo
32	Makadzidza kusvika chidanho chipi kuchikoro?	1. Handina kuenda kuchikoro 2. Puraimari 3. Sekondari 4. Fundo yepamusoro
33	Munogara kupi?	1. Kumusha 2. Pedyo nedhorobha (peri urban) 3. Mudhorobha
34	Munosevenza here?	1. Hongu ndinosevenza pakambani 2. Ndinozvishandira ndega. 3. Handisevenzi.
35	Munowana mari yakawanda zvakadini pamwedzi mumba menyu?	1. Haisviki 50 2. 51 – 200 3. 201 – 500 4. 501 – 999

		5. Inodarika1000
		6. Handizivi
36	Munoputa fodya here?	1. Hongu
		2. Kwete
37	Pamakapedzisira kuongororwa HIV makabuda zvakadini?	1. POSITIVE
		2. NEGATIVE
		3. Handizivi

Tinotenda nekupinda kwamaita mutsvakurudzo.

Appendix 3: Key Informant Interview Guide

Key Informant Interview Number:

Sex of Key informant: 1. Male   2. Female

Good morning/ afternoon. I am Ratidzai Sarai, a student at Africa University. I am conducting a study seeking to determine barriers and facilitators of cervical cancer screening among women aged between 18 to 49 seeking services at Victoria Chitepo Provincial Hospital, Mutare, 2025.This questionnaire has questions that you will answer if you are willing to participate in the study. As we talk, I shall be recording our interview using a recording device that will be stored in a secure place. I will also be writing short notes during our conversation. The information that you are going to share with us will only be used for academic purposes and will be kept confidential.

Guiding questions:

1. In your opinion, what are the barriers and facilitators of cervical cancer screening among women aged 18 to 49 years?

2. Which areas in the health system do you think need to be strengthened to improve cervical cancer screening uptake?

Appendix 4:Informed Consent Form (English)

My name is Ratidzai Sarai, a Master of Public Health student from Africa University. I am carrying out a study on Barriers and Facilitators of Cervical Cancer Screening Among Women Aged Between 19 And 49 Seeking Services at Victoria Chitepo Provincial Hospital, Mutare, 2025**.**

I am kindly asking you to participate in this study by filling in the questionnaire.

What you should know about the study:

Purpose of the study:

The purpose of the study is to determine barriers and facilitators of cervical cancer screening among women aged between 19 and 49 seeking services at Victoria Chitepo Provincial Hospital, Mutare, 2025**.**

Procedures and duration

If you decide to participate you will be asked to answer a few questions relating to your illness history and treatment. It is expected that the questionnaire will take about 20 minutes to complete.

Risks and discomforts

There are no foreseeable risks or discomforts to the study participant.

Benefits and/or compensation

The benefits of participating in this study are that this may help improve the treatment for you and other people in future. There are no payments/compensation for involvement in the study

Confidentiality

The information obtained in his study will be kept private and confidential. Any information obtained in this study that could possibly be identified with you will not be disclosed without your permission. Your name or any other form of identification will not be asked for in the questionnaires or by the interviewer.

Voluntary participation

Your participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relationship with the researchers.   If you choose to participate, you are free to withdraw your consent and to discontinue participation in the study without penalty.

Offer to answer questions

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

Authorisation

If you have decided to participate in this study, please sign this form in the space provided below as an indication that you have read and understood the information provided above and have agreed to participate in the study.

Name of Research Participant (please print)   Date

Signature of Research Participant or legally authorized representative

If you have any questions concerning this study or consent form beyond those answered by the researcher including questions about the research, your rights as a research participant, or if you feel that you have been treated unfairly and would like to talk to someone other than the researcher, please feel free to contact the Africa University Research Ethics Committee on telephone (02020) 60075 or 60026 extension 1156 or email aurec@africau.edu

 Name of Researcher : Ratidzai Sarai

0775 614 003

Appendix 5: Shona Consent

Gwaro Retenderano Reapinda Mutsvakurudzo.

Musoro wetsvakurudzo: Tsvakurudzo maererano nezvikonzero zvinobatsira kana kudzivisa madzimai emazera kubva makore 18 kusvika makore 49 kuti vaongorowe gomarara remuromo wechibereko pachipatara cheVictoria Chitepo Provincial Hospital, Mutare, 2025.

Mutsvakurudzi: **Ratidzai Sarai**

Zvamunofanira kuziva nezvetsvakurudzo ino

Muri kukumbirwa kupinda mutsvakurudzo.Gwaro retenderano rino rinotsanangura tsvakurudzo iyi nezvamunotarisirwa kuita mutsvakurudzo.

Munokumbirwa kuti munyatsoverenga gwaro iri. Shandisai nguva yose yamungada pakuriverenga.Munopinda mutsvakurudzo nokuda kwenyu uye munogona kusarudza kusapinda muzvirongwa zvetsvakurudzo. Chero mukapinda mutsvakurudzo, munogona kubuda panguva chero ipi zvayo. Hapana zvamunoitwa nechikonzero chekuti munenge masarudza kubuda mutsvakurudzo. Panguva yetsvakurudzo, tichakuzivisai kana tikawana ruzivo rutsva runogona kushandura pfungwa dzenyu maererano nekuti mungada kuramba muri mutsvakurudzo here kana kuti kwete.

Chinangwa chetsvakurudzo

Tinoda kuziva zvikonzero zvinoita kuti vanhukadzi vane makore gumi nemasere kusvika pamakore makumi mana nemapfumbamwe vaongororwe gomarara remuromo wechibereko kana kurega kuongororwa gomarara remuromo wechibereko. Tinoda zvakare kuziva kuti vanhukadzi vane makore gumi nemasere kusvika pamakore

makumi mana nemapfumbamwe   vanoongororwa gomarara rechibereko here muhupenyu hwavo.

Chikonzero chaita kuti mukumbirwe kupinda mutsvakurudzo

Masarudzwa kupinda mutsvakurudzo ino kuburikidza nekwamunogara uye nekuti muri umwe wevanhukadzi vari kutsvaga rubatsiro rwezvehutano pachipatara chino cheVictoria Chitepo Provincial Hospital kana cheMutare New Start Center.

Zvichaitwa

Kana muchibvuma kupinda mutsvakurudzo ino, tichakubvunzai mibvunzo maererano neruzivo rwenyu pamusoro pegomarara remuromo wechibereko uye kuongororwa kwaro. Tichakubvunzai zvakare mibvunzo maererano nekuti imi pachenyu makamboongororwa here gomarara remuromo wechibereko. Mutsvakurudzo ino, ini ndicahkuvhunzai mibvunzo nerurimi rwamakasununguka kutaura narwo.. Tinotarisira kuti zvichakutorerai nguva inoita maminitsi makumi matatu kupindura mibvunzo iri mugwaro iri.

Zvakanaka zvamunowana

Hapana chamunowana kuburikidza nekupinda mutsvakurudzo ino.

Mubhadharo

Hapana chamunobhadhara kuti mupinde mutsvakurudzo ino.

Kuchengetedzwa kweruzivo

Ruzivo rwamuchapa zvichaiswa pamwe chete nenhamba yerupawo yamuchapiwa, kwete zita renyu. Vatsvakurudzi vetsvakurudzo ino, Africa University Research Committee (AUREC) chete ndivo vachawana mukana wekuziva zvinenge zvabuda

muongororo yemhinduro dzamuchapa kumibvunzo ichabvunzwa. Ruzivo urwu ruchachengetedzwa mumakombiyuta akachengeteka. Hatisi kuzoshandisa mazita mumaripoti ari maererano netsvakurudzo.

Zvimwe zvinogona kuitwa kana mamwe marapirwo

Kupinda mutsvakurudzo kuda kwenyu uye munogona kusarudza kubuda mutsvakurudzo chero nguva.

Muripo wekuva mutsvakurudzo

Hamubhadhariswi mari kuburikidza nekupinda kwenyu mutsvakurudzo.

Chii chichaitika kana mukabuda mutsvakurudzo nguva isati yakwana?

Zvisinei nekuti hamudi kupinda mutsvakurudzo kana kuti mabuda mutsvakurudzo, mucharamba muchiwana rubatsiro rwakafanana nerwamaisiwana kubva kukirinika kana kuchipatara chemunharaunda menyu.

Kugoverana ruzivo rwezveutano hwenyu nevamwe

Ruzivo ruri maererano nenhamba yerupawo ndirwo ruchagoveranwa nevamwe vatsvakurudzi, kwete zita renyu.

Ndiani wandinofonera kana kutsvaka kana ndine mibvunzo kana matambudziko?

- Fonerai mutsvakurudzi mukuru, (Mutsvakurudzi mukuru wemuno), pa (nhamba dzenhare dzemuno) kana mune mibvunzo, kutsutsumwa nechikonzero chekuti muri mutsvakurudzo ino.

Wekuzivisa muno: Ratidzai Sarai

Nhamba dzenhare: 0775614003

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- Fonerai kana kuzivisa (IRB yemuno) kana mune mibvunzo maererano nekodzero dzenyu semunhu ari mutsvakurudzo. Zivisai veIRB kana muchifunga kuti hamuna kubatwa zvakanaka kana kuti pane zvimwe zvamungada kuziva. VeIRB munogona kuvabata pa:

Wekuzivisa muno: Dr A. Kapfunde

Nhamba dzenhare: 0776466815

Sainecha yenyu inorevei pagwaro retenderano rino?

Sainecha yenyu inoreva kuti:

- Maziviswa nezvechinangwa chetsvakurudzo ino, zvichaitwa uye zvakanaka zvamungawana kana njodzi dzamungasangana nadzo.

- Mapiwa mukana wekubvunza mibvunzo musati masaina.

- Mazvipira kupinda mutsvakurudzo ino pasina kumanikidzwa.

- Munonzwisisa kuti ruzivo rwatorwa pamuri zvinogona kuchengetedzwa kuti zvizoshandiswa mutsvakurudzo dzinenge dzabvumidzwa dzinokoshesa unhu hwevanhu.

Nyorai zita remunhu mukuru apinda

mutsvakurudzo…………………………………………

Sainecha yemunhu mukuru ari mutsvakurudzo

….………………………………………………..

Zuva…………………………………………………………..

----------------------   ------------------------------   -------------

Nyorai zita remunhu awana   Sainecha yemunhu awana mvumo   Zuva mvumo

Ipai rimwe gwaro rakafanana nerino kumunhu anenge apinda mutsvakurudzo uye muchengete rimwe panochengeterwa magwaro etsvakurudzo.

Appendix 6: VCPH Approval.

Telephone: 263-020-64321
Fax: +263-020-67048
E-mail:mphosp@syscom.co.zw

ZIMBABWE

Reference:

Victoria Chitepo Provincial Hospital
P.O. Box 30
Mutare
MANICALAND
ZIMBABWE

29 October 2024

Att: Dr Ratidzai Sarai
Victoria Chitepo Provincial Hospital
Box 30
Mutare

Re: PERMISSION TO CARRY OUT A RESEARCH STUDY ON THE DETERMINANTS OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 18 TO 49 YEARS SEEKING HEALTHCARE SERVICES AT VICTORIA CHITEPO PROVINCIAL HOSPITAL.
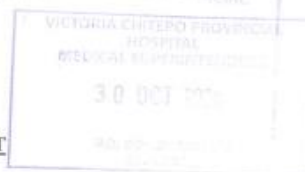
In reference to the above subject matter:

I have no objection to your request.

You can go ahead with your research.

Hope you will find this institution helpful in your research.

DR H Makiwa
ACTING MEDICAL SUPERINTENDENT

Appendix 7: AUREC Approval

AFRICA UNIVERSITY
A United Methodist-Related Institution
"Investing in Africa's future"
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 Website: www.africau.edu

Ref: AU 3598/25   3 February, 2025

RATIDZAI SARAI
C/O Africa University
Box 1320
MUTARE

RE: **BARRIERS AND FACILITATORS OF CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN AGED 18 TO 49 YEARS AT TWO HEALTH FACILITIES IN MUTARE, ZIMBABWE, 2024**

Thank you for the above-titled proposal you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.
a) Research proposal
- **APPROVAL NUMBER**   AUREC 3598/25
  This number should be used on all correspondences, consent forms, and appropriate document

- **AUREC MEETING DATE**   NA
- **APPROVAL DATE**   February 3, 2025
- **EXPIRATION DATE**   February 3, 2026
- **TYPE OF MEETING**: Expedited
  After the expiration date, this research may only continue upon renewal. A progress report on a standard AUREC form should be submitted a month before the expiration date for renewal purposes.
- **SERIOUS ADVERSE EVENTS** All serious problems concerning subject safety must be reported to AUREC within 3 working days on the standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.

> AFRICA UNIVERSITY
> RESEARCH ETHICS COMMITTEE (AUREC)
> **APPROVED**
> P.O. BOX 1320, MUTARE, ZIMBABWE

Yours Faithfully

MARY CHINZOU
FOR CHAIRPERSON
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE