

**UPTAKE AND BARRIERS TO CERVICAL CANCER SCREENING  
AMONG WOMEN AGED 15 YEARS AND ABOVE ATTENDING  
HEALTH CARE FACILITIES IN SIMANJIRO DISTRICT,  
TANZANIA.**

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**Uptake and Barriers to Cervical Cancer Screening Among Women Aged 15 Years  
and Above Attending Health Care Facilities in Simanjiro District, Tanzania**

**By**

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**A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the  
Degree of Master of Science (Applied Epidemiology)  
Muhimbili University of Health Allied Sciences  
October, 2021**

**CERTIFICATION**

The undersigned certifies that he has read and hereby recommends for examination by Muhimbili University of Health and Allied Sciences a dissertation titled “**Uptake and barriers to cervical cancer screening among women aged 15 years and above attending health care facilities in Simanjiro district**” in partial fulfilment of the requirements for the degree of Master of Science in Applied Epidemiology of Muhimbili University of Health and Allied Sciences.

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(Co-supervisor)

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**Date**

**DECLARATION AND COPYRIGHT**

I **Joyce John Kivugo**, declare that this dissertation is my own original work, and it has not been presented to any other University for similar or any other degree award.

**Signature**----- **Date**-----

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**DEDICATION**

This work is dedicated to my husband Dr.Honest Massawe and my children, Brianna,  
Bernice and Belvin.

## TABLE OF CONTENTS

CERTIFICATION .....	i
DECLARATION AND COPYRIGHT .....	ii
ACKNOWLEDGEMENT .....	iii
DEDICATION.....	iv
TABLE OF CONTENTS .....	v
LIST OF ABBREVIATIONS.....	ix
DEFINITION OF TERMS .....	x
ABSTRACT .....	xi
CHAPTER ONE.....	1
1.1 INTRODUCTION .....	1
1.2 PROBLEM STATEMENT .....	3
1.4 RATIONALE.....	7
1.5 RESEARCH QUESTIONS .....	7
1.5.1 BROAD RESEARCH QUESTION .....	7
1.5.2 SPECIFIC RESEARCH QUESTIONS.....	7
1.6 OBJECTIVES .....	8
1.6.1 Broad Objective.....	8
1.6.2 Specific Objectives.....	8
CHAPTER TWO.....	9
2.0 LITERATURE RIVIEW .....	9
2.1 OVERVIEW .....	9
2.2 Social demographic characteristics.....	10
2.3 Uptake of cervical cancer screening .....	11
2.4 Perceived barriers for women on cervical cancer screening.....	13
CHAPTER THREE .....	15

3.0 METHODOLOGY .....	15
3.1 Study design.....	15
3.2 Study setting.....	15
3.3 Study population .....	15
3.4 Sample size estimation.....	16
3.5 Sampling technique.....	16
3.6 Inclusion criteria .....	17
3.7 Exclusion criteria .....	17
3.8 Variables .....	17
3.8.1 Dependent Variables .....	17
3.8.2 Independent Variables were in three groups .....	17
3.9 Data collection procedure/tools .....	17
3.10 Validity and Reliability.....	17
CHAPTER FOUR .....	20
4.0 RESULTS .....	20
4.1 Characteristics of the study participants .....	20
4.2 Uptake of cervical cancer screening .....	23
4.3 Source of information about cervical cancer screening.....	25
4.4 Reasons for not having cervical cancer screening done .....	26
4.5 Factors associated with uptake of cervical cancer screening.....	27
4.6 Readiness of women for cervical cancer screening.....	29
CHAPTER FIVE .....	31
LIMITATION OF THE STUDY .....	35
<b>CHAPTER SIX</b> .....	36
<b>CONCLUSION</b> .....	36
APPENDICES .....	43



Appendix 1A: English Consent Form .....	43
Appendix 1B: Consent Form Swahili Version .....	45
Appendix 2A: Questionnaires (English Version) .....	47
Appendix 2B: Maswali ya kiswahili .....	53
Appendix 3A: In-depth interview guide (English version) .....	59
Appendix 3B: Maswali yaMahojiano (Kiswahili) .....	60
Appendix 4: Ethical approval certificate .....	61
<b>Appendix 5: Introduction letter .....</b>	<b>63</b>

## LIST OF TABLES

Table 1: Demographic characteristics of the study participants (n=352).....	21
Table 2: Awareness about cervical cancer.(n=352).....	21
Table 3: Cervical cancer screening uptake by Demographic characteristics of the study participants (n=352).....	23
Table 4: Cervical cancer screening uptake by level of awareness (n=352).....	24
Table 5: Factors associated with cervical cancer screening uptake (n=352).....	27
Table 6: Factors associated with cervical cancer screening (n=352) .....	29

## LIST OF FIGURES

Figure 1 Source of information about cervical cancer screening (n=235) .....	25
Figure 2: Reasons for not having cervical cancer screening (n=299) .....	26

**LIST OF ABBREVIATIONS**

<b>CC</b>	Cervical cancer
<b>CCS</b>	Cervical Cancer Screening
<b>CI</b>	Confidence Interval
<b>CTC</b>	Care and Treatment Centre
<b>HIV</b>	Human Immunodeficiency Virus
<b>HPV</b>	Human Papilloma Virus
<b>MOHCDEC</b>	Ministry of Health, Community, Development, Gender, Elderly and Children
<b>MUHAS</b>	Muhimbili University of Health and Allied Sciences
<b>Pap smear</b>	Papanicolau smear test
<b>PRRR</b>	Pink Ribbon Red Ribbon
<b>RCH</b>	Reproductive and Child Health
<b>VIA</b>	Visual Inspection with Acetic acid
<b>VILI</b>	Visual inspection using lugol's iodine
<b>WHO</b>	World Health Organization

## DEFINITION OF TERMS

**Barriers:** These are circumstances or an obstacle that prevents women from accessing or performing cervical cancer screening services.

**Cervical cancer:** Is a disease in which malignant (cancer) cells form in the cervix. Cervical cancer usually develops slowly over time. Before cancer appears in the cervix, the cells of the cervix go through changes known as dysplasia in which cells that are not normal begin to appear in the cervical tissue. Later on cancer cells start to grow and spread more deeply into the cervix and to surrounding areas.

**Cervical cancer screening:** is the method used to detect abnormal cells on the cervix. This method is done for the purpose of reducing the number of women who develop cervical cancer and reduce the number of women who die from that condition. When screening is done early the number of deaths will be reduced and health of women will also be improved.

**Screening:** Is looking for cancer before a person has any symptoms of the disease. This can help to find cancer at an early stage when abnormal tissues or cancer is found early, as it will be easier to treat. By the time symptoms appear, cancer may have begun to spread.

**Uptake:** These refer to the women's acceptance or taking up the cervical cancer screening services that is available in order to detect early or prevent cervical cancer.

## ABSTRACT

**Background:** Cervical cancer is the most common cancer among women accounting for 250,000 deaths globally each year. Despite the benefits of early detection through screening, only 4% of the targeted women (500,000) were screened. Despite strong evidence that cervical cancer screening reduces mortality, its uptake among women in Tanzania remains low (7.9%). The aim of this study is therefore to identify barriers to the uptake of cervical cancer screening in Simanjiro District health facilities.

**Objective:** To assess the uptake and barriers of cervical cancer screening among women attending different categories of clinics in health facilities of Simanjiro District in Tanzania

**Methodology:** This was a hospital based mixed method cross sectional study which was conducted at the CTC and Reproductive clinics in Simanjiro health facilities in January 2021. The study included a sample size of 352 women and 6 health care workers. Data collection was through face-to-face interviews using validated and adapted questionnaire for the clients and in-depth interviews for the health care worker. The data were entered, processed, and analysed using SPSS version 23. Descriptive statistics were summarized using frequencies while categorical variables were summarized using proportions. Measure of central tendency (median) with respective measure of dispersion (Interquartile range) was used for continuous variables. Logistic regression models were performed to obtain odds ratios (ORs) with 95% confidence interval (CI) for the association between a set of explanatory variables and uptake of cervical cancer screening. A p-value of less than 5% was considered statistically significant. Qualitative data were analysed by using thematic analysis (deductive) approach, whereby a thorough reading and familiarization of the information was done to explore the meanings associated with the concepts from the transcriptions of the participants' descriptions.

**Results:** Of 352 women the median age of 26.5(IQR: 15-61) years, only 15.1% (53) had ever been screened for cervical cancer. Of these women 43 (81.1%) had Cervical Cancer Screening once and 10 (18.9%) had Cervical Cancer Screening twice. More than three quarters (66.8%) of respondents had ever heard about Cervical Cancer Screening, while 178 (75.7%) heard from health workers. Barriers to cervical cancer screening shows that among 352, more than half 299 (84.9%) had never had cervical cancer screening. However 139 (46.5%) knew nothing about cervical cancer screening, Intriguingly 25 (8.4%) had no

time for cervical cancer screening, 28 (9.4%) feared the screening process, Furthermore 71 (23.7%) had no problem requiring cervical cancer screening, from the multivariate analysis; those who were ready for cervical cancer screening were more likely to screen compared to those who were not ready for cervical cancer screening (aOR=8.29, 95% CI: 1.89 – 13.49, p=0.005),majority of health care providers barriers towards cervical cancer screening were, multitasking issues, limited infrastructures ,few trained providers and policy.

**Conclusion:** The study revealed that cervical cancer screening uptake is low in Simanjiro district despite the efforts of providing screening services all over the country. Cervical cancer screening services should be integrated with other health services so that women accessing various health services can also be able to access cervical cancer information and screening services.

## CHAPTER ONE

### 1.1 INTRODUCTION

Worldwide cervical cancer is an important problem causing morbidity and mortality among women of reproductive age. Early screening may reduce the incidence of the problem as most of women have less awareness about cervical cancer screening (1). Cervical cancer is caused by persistent infection with certain types of Human Papilloma Virus (HPV 16 and HPV 18) (2).

Cervical cancer starts in a woman's cervix. It begins when healthy cells on the surface of the cervix change and grow out of control. It is easily prevented if identified early and treatment done before the woman start to show symptoms of the disease (3).

Cervical cancer in the beginning or in early stages presents with no signs or symptoms of the disease, but as the time goes the woman may experience blood spots or light bleeding between or following periods, longer and heavier menstrual bleeding than usual, bleeding after sexual intercourse, pain during sexual intercourse and bleeding after menopause (4).

Most women do not have any signs or symptoms of a precancerous until the cancer has spread to other tissues and organs. The risk factors of cervical cancer are smoking, having multiple sexual partners, early sexual intercourse, and immune compromised women. Visual Inspection with Acetic acid (VIA) is harmless, correct, and reasonable for scaling up cervical cancer screening.

VIA is carried out by a health care giver who is competent and uses VIA solution to apply to the cervix for about 1 to 2 minutes to get result. There is also cytology screening, which has been difficult to conduct in many developing countries due to the need of cytotechnologists, tracking of multiple screening visits and reduce the likelihood of women accessing screening.

Cervical cancer screening is important for early diagnosis and treatment of cervical cancer to reduce the number of morbidity and mortality rate in the country. Pap smear test was found to be unpractical due to shortage of trained personnel specialized on the test and also issues with insufficient health system (5). The screening can be done by doctors, nurses,

midwives and paramedical staff who undergone Visual Inspection with Acetic acid test training. In high income countries cervical cancer mortality rate decreased due to Pap smear testing programs done for the purpose of identifying any abnormalities of the cervix. The seriousness of the disease has been reduced in high income countries after utilizing cervical cancer screening with Pap smear test and by putting some strategies as a means of eradicating such as effective cervical cancer screening, proper treatment of identified lesions and accurate follow up after suspected to have cancer lesions(5)

In Africa approximately 40% of newly cervical cancer cases happen in East Africa(6). The numbers of women who are at risk of developing cervical cancer aged 15 years and above is estimated to be 250 million, (7). African countries have limited comprehensive cervical cancer screening and treatment even though efforts have been made teaching about cervical cancer avoidance (6).

A study done in Malawi on determinants of cervical cancer screening utilization among women aged 30-45 years in Blantyre district, established that the prevalence of cervical cancer screening was 12.3%, lack of knowledge (34%) was found to be the explanation of not going for screening and lack of interest is 39.7% which seen is the other reason of not screened (7).

In Tanzania among the most frequent form of cancer which affects women is cervical cancer. Incidence rate is 50.9 per 100,000 women. VIA method is provided for free to promote the health of women and when diagnosed early it provides great chance for successful treatment.

About 500,000 women who were targeted for screening, only 4% of them had been screened for cervical cancer (5). Cervical cancer in Urban Tanzania Risk Factors and Factors Influencing Attendance revealed that most women who attend cervical cancer screening found to be difficult because it needs a long journey to reach the big health facility which provides the service(7).

There has been new evidence suggesting that there is now a trend towards age decrease in women to cervical cancer attributed to immunosuppressant resulting from HIV infection that accelerates the progression of the disease from pre invasive condition to invasive



disease (6)there is correlation between lower CD4 levels and a higher number of HPV types. Women with CD-4 count less than 200 cells/mm<sup>3</sup> had more abnormal cervical lesions (3)

## **1.2 PROBLEM STATEMENT**

Worldwide cervical cancer is the third most common gynaecological problem estimated about 500,000 new cases are diagnosed with cervical cancer while 250,000 women lose their lives every year due to cervical cancer. East Africa has the highest incidence rates of cervical cancer, with 42.7 new cases per 100,000 women.

Coverage of cancer screening services is lowest in low-and-middle income countries averagely estimated at 19%. This is partly due to the presence of only a few trained and skilled Health workers, and lack of healthcare resources to sustain screening programmed (8). Studies have shown that only a small percentage (6%-27%) of women in sub-Saharan Africa report having received cervical cancer screening (9). This is even lower in the East African region.

In Tanzania, the population is approximately 40 million people; 11.4 million women within the reproductive age are at risk of developing cervical cancer. Pink Ribbon Red Ribbon (PRRR) in collaboration with Tanzania had targeted (438,601) in prevention of cervical cancer to women of 30-49 years old.

From January, 2014 to June, 2016 were able to screen 78,616 women of reproductive age, whereas 3,637 women identified to have Visual inspection with Acetic acid positive, 2,450 treated with cryotherapy and 163 treated with Loop electrosurgical excision procedure (LEEP).

Tanzania has incidence rate of 50.9 per100, 000 women, which was the highest rate in the East African Region. Majority of patients with cervical cancer present at the hospital with dismal survival rates. Despite strong evidence that cervical cancer screening reduces mortality, its uptake among women in Tanzania remains low 7.9% (1)

Although uptake of cervical cancer screening services is important in designing, studying and implementing effective interventions data on cervical cancer screening are limited in

Tanzania. Access to health services in rural areas, has been characterized by transport challenges, long distances to health care facilities, ill equipped health facilities and lack of information access.

The Ministry of Health, Gender and Social Welfare in Tanzania, in 2008, established a Reproductive Health (RH) - Cancer unit through its Reproductive and Child Health Section (RCHS). There has also been the integration of cervical cancer screening services to Care and Treatment Clinics as well as linking screening with treatment as an intervention against the cervical cancer burden.

This programmed is not being fully effective as there are still gaps in uptake and barriers whereby there is lack of accurate knowledge and misconceptions regarding cervical cancer and the need for cervical screening, unavailability of sufficient screening services as there is extra-long waiting times at clinics and lack of services (75% of reproductive-age women in Tanzania live in rural communities without easy access to screening).

There is a particular need of performing this study at Simanjiro district Hospital at Reproductive Health clinic and CTC where service is provided. Majority of women participating cervical cancer screening at Simanjiro are HIV positive according to data obtained from register book and the fear and misconception of cervical screening (e.g. the feeling that diagnosis leads to death) lack of awareness that treatment of precancerous lesions is possible and available and difficulty in navigating the complicated system from screening to diagnosis and treatment. Therefore, this study will measure uptake and identify barriers to the uptake of cervical cancer screening in Simanjiro district.

### **Theoretical Framework**

This study is guided by the socioecological model of McLeroy et al. In this model, the patterned behavior is considered as the outcome of interest and is viewed as being determined by intrapersonal, interpersonal, institutional, community, and public policy factors. An implicit assumption of these levels of analysis is that health promotion interventions are based on our beliefs, understandings, and theories of the determinants of behavior and that these five levels of analysis reflect the range of strategies currently available for health promotion.

Intrapersonal factors include characteristics of the individual such as age, knowledge, attitude, behavior, self concept, and developmental history of the individual. [12]

Interpersonal factors refer to the interpersonal processes and primary groups (formal and informal social network and Social support systems) such as the family, workgroup, and friendship networks.

Institutional factors have to do with the social institutions with organizational characteristics and formal (and informal) rules and regulations for an operation that constrain or promote behaviors.

Community factors refer to the relationships among organizations, institutions, and informal networks among defined boundaries.

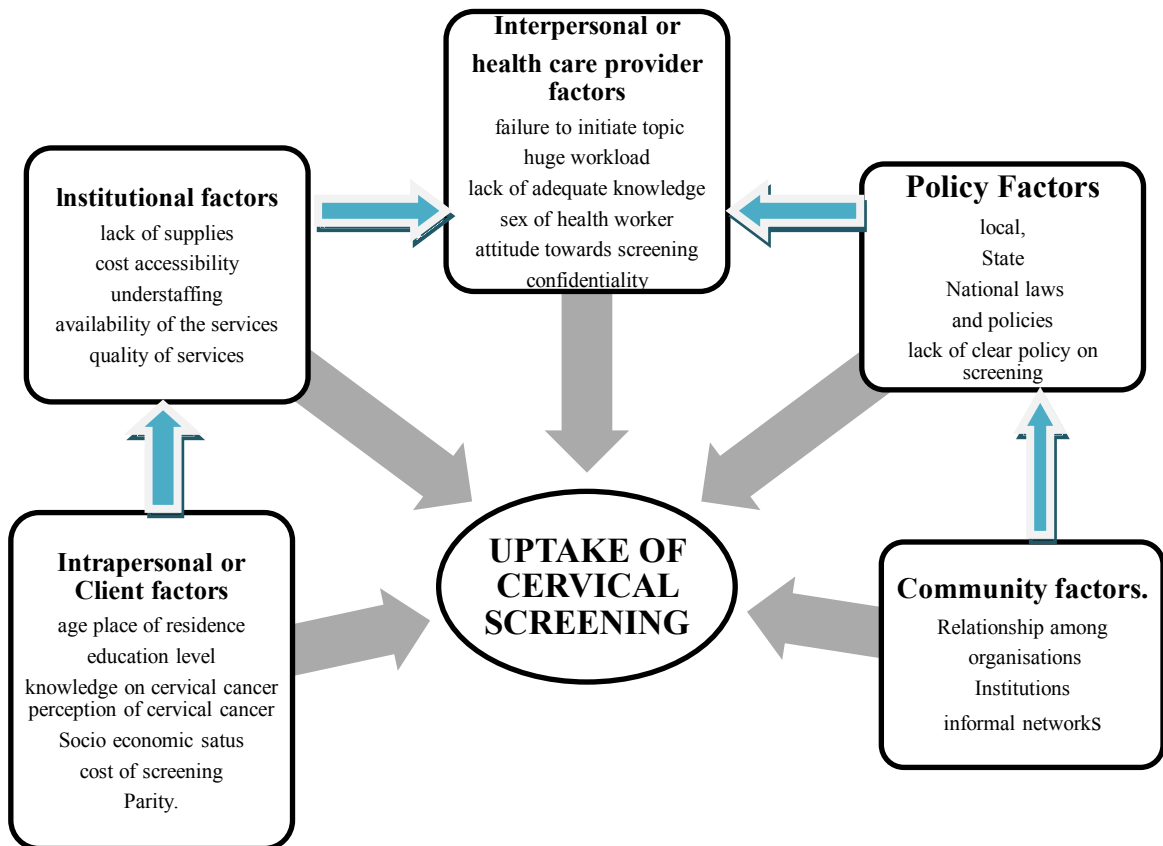
Policy factors include local, state, and national laws and policies that affect behaviours. In this context, barriers to screening and treatment associated with the individual's personal characteristics such as knowledge and psychological factors among others were considered as individual-level factors.

Institutional-level barriers also included those related to the attitudes of health service providers and the issue of confidentiality.

Community-level barriers also captured issues concerning the belief system of the communities while the policy-level barriers comprised the actions and inactions of government policies in the country. This model was used to guide the study because it provides an opportunity to look at the barriers to cervical cancer screening and treatment from a hierarchical perspective. This approach is expected to provide the opportunity for policymakers to tackle the situation at multiple levels rather than solely at the individual or the national level. [12]

### 1.3 Conceptual framework

Uptake of cervical cancer screening among women can be attributed to several factors including intrapersonal or client factors, institutional factors, healthcare provider factors or interpersonal, policy factors, community factors. This study will focus mainly on the three factors that is client intrapersonal, institutional and interpersonal factors. Therefore, this study will measure uptake and identify barriers to uptake of cervical cancer screening in Simanjiro district Tanzania.



## **1.4 RATIONALE**

The study will determine uptake and barriers to cervical cancer screening among women attending health facilities. Also the study addressed the preventive nature of the cancer of the cervix when women regularly screen for cervical cancer for early diagnosis and treatment. Currently data on cervical cancer screening are limited in Tanzania. And a better understanding of the cervical cancer screening services to women is important in designing, studying and implementing effective cervical cancer screening intervention in Tanzania

The study will inform programme managers and policy makers the ministry of health, community, development, gender, elderly and children (MoHCDEC) and other stakeholders about important factors and barriers to cervical cancer screening services among women attending health facilities in Simanjiro.

## **1.5 RESEARCH QUESTIONS**

### **1.5.1 BROAD RESEARCH QUESTION**

What is the uptake and barriers of cervical cancer screening among women aged 15 years and above attending ctc and reproductive clinics in health care facilities with cervical cancer screening services in Simanjiro district Tanzania?

### **1.5.2 SPECIFIC RESEARCH QUESTIONS**

1. What is the uptake of cervical cancer screening among women aged 15 years and above attending ctc and reproductive clinics in health care facilities of Simanjiro district?
2. What are barriers toward uptake of cervical cancer screening among women aged 15 years and above attending ctc and reproductive clinics in health care facilities of Simanjiro district?
3. What are the barriers toward providing cervical cancer screening services among health care workers in ctc and reproductive clinics in Simanjiro district?

## **1.6 OBJECTIVES**

### **1.6.1 Broad Objective**

To assess uptake and identify barriers of cervical cancer screening among women aged 15 years and above attending CTC and reproductive clinics in health care facilities of Simanjiro district, Tanzania.

### **1.6.2 Specific Objectives**

1. To assess uptake of cervical cancer screening among women aged 15 years and above attending CTC and Reproductive clinics in health facilities of Simanjiro district.
2. To identify client and institutional barriers toward uptake of cervical cancer screening among women aged 15 years and above attending CTC and Reproductive clinics in health care facilities of Simanjiro district.
3. To identify health care provider barriers toward providing cervical cancer screening services among health care workers in CTC and reproductive clinics in Simanjiro district.

## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 OVERVIEW

Cervical cancer is the common cancer which always causes death among women in African regions. It is a malignant neoplasm of the uterine cervix which is preventable through appropriate screening, treatment and follow up (9). It may present with vaginal bleeding but symptoms may be absent until the cancer reaches advanced stages. It rarely affects women under the age of 20 years and quarters of diagnoses are made in women older than 65 years.

The uppermost burden of the cervical cancer happens in developing countries, where there is lack of effective screening programs. The consequence is that, cervical cancer is discovered when the disease has reached a bad situation. All women have a right to accessible, affordable and effective services for prevention of the cervical cancer (8).

Cervical screening is acknowledged as currently the most effective approach for cervical cancer control. Despite the above fact cervical cancer screening coverage is estimated to be low in developing countries compared to developed countries (9). The ministry of health, gender and social welfare in Tanzania, in 2008, established a reproductive health (RH) - Cancer unit through its reproductive and child health section (RCHS). There has also been the integration of cervical cancer screening services to care and treatment clinics as well as linking screening with treatment as an intervention against the cervical cancer burden.

The Tanzania service delivery guidelines (SDG) for cervical cancer prevention and control include the three components of prevention and control: 1) primary prevention, 2) secondary prevention, and 3) tertiary care, where secondary prevention, which is the main focus of the SDG, includes screening and treating precancerous lesions with effective outpatient methods. (10)

## **2.2 Social demographic characteristics**

### **Socioeconomic status**

Several studies have it that the less privileged one is the less likely of that individual being screened for cervical cancer despite the low socioeconomic status being a risk factor of cervical cancer. In many developing countries, a large proportion of women had pelvic exams but there was no accompanying laboratory exams making the screening process inconclusive [10]. With HIV/AIDS, individuals are susceptible to recurrent illness. Lost labor time due to illness often means household capacity to earn income is reduced at a time when it needs additional money to pay for treatment therefore screening for diseases does not become a priority (11).

### **Age**

Study done on the Utilization of cervical cancer screening services and its associated factors among primary school teachers in ilala municipality, dar es Salaam, revealed that most of participants screened were married, the age group were 30-39 years old and their education level were primary school. Older HIV positive women, who are also at highest risk of developing cervical cancer, are least likely to be screened. The psychological benefits of screening may change as a person ages (9).

### **Sociocultural**

Some of the few women who do have access to screening do not get themselves screened because they have wrong beliefs about cervical cancer (12). In some communities, women are not empowered to have health seeking behaviors without the consent of their male partners. They may be willing to screen but the consent has to come from their partners. This can be a setback when the partners have poor health seeking behaviors(11). The process of the screening itself poses a challenge as well in that vaginal examination is less culturally acceptable compared to preventive methods like vaccination (10)



### **Level of education**

Women who have attained secondary education have been reported to have the highest prevalence rate of screening followed by those who attained primary education with the least rate in those without any formal education. (11) The higher the level of education attained though does not translate to better health seeking behavior and vice versa. Health literacy can be said to be independent on level of education attained. (10)

### **Institutional factors**

In a study done in Nigeria, the proportion of non-acceptance of cervical cancer screening due to cost related issues was more than quarter (11). Some countries like Tanzania has being one of them where it is the policy of the ministry of health, gender and social welfare has an exemption policy on treatment of HIV positive patients. Such policies are often met with sustainability challenges such that in the event of lack of supplies, the clients may be forced to bear the costs of the screening and even treatment. (13)

### **2.3 Uptake of cervical cancer screening**

The uptake of cervical cancer screening in many developing countries such as Tanzania is still poor due to various factors. Demographic characteristics include education, age, and marital status. In regards to education level, several studies have found that women with high screening rates have a high level of education (14).

However, women with high education may not necessarily seek screening; thus, additional factors must be considered. Rates of screening are substantially lower in younger women aged 20-29 years and elderly women aged 60 years and above (15) also, unmarried and widowed women are less likely than married women or women living with a partner to obtain screening (16).

However, some studies have found that single women are more likely than married women to have pap screening(15) perhaps negative attitudes among the male partners, who may serve as key decision- makers, prevent women from seeking screening services (16). The man's role may, thus, be important to take into consideration to determine whether women will access screening. Women's knowledge is also implicated in screening uptake.

Women with low levels of knowledge about cervical cancer and its prevention are unlikely to access screening services(14). Although awareness may be a significant factor, some women, nevertheless, do not seek screening. For example, Few of female health workers (who were aware of the Pap smear) had actually accessed it (15). It is likely, therefore, that awareness in combination with other factors will determine whether women utilize screening services.

In addition to knowledge, women's attitudes toward screening may be relevant. In Thailand, researchers found that female sex workers with negative attitudes about Pap smear services were less likely to have ever had a cervical smear taken than those with a positive attitude (17). Also, in Somalia women developed a negative outlook on screening due to embarrassment associated with female genital mutilation (16).

Other cultural barriers may lead to negative opinions about screening including concern about exposure of private body parts (12). Accessibility has also been identified in the research whereby there is a long distance to the cervical cancer screening service.

Study done on awareness, perception and factors affecting utilization of cervical cancer screening services among women in Ibadan, Nigeria, said that "They did not know about cervical cancer screening, but regularly heard on the radio announced that women should go for screening."(18) Still study identified that, majority of the women had lack of awareness as the obstacle to application of cervical cancer screening and only low number of the women have done cervical cancer screening (18).

Another study identified low level of awareness and inadequate attention to women's health care is the factors which increase the number of the disease (5). Study in Malaysia revealed on cancer patient's perception of cancer screening, said that when asked about cervical cancer screening, they said that don't know anything about cancer, though others said they heard only on breast cancer only (19).

Additionally, study performed at Nigeria identified that most of the participants were aware of the available of services in their area and few of them had undertaken the cervical cancer screening. Also few women were afraid of experiencing pain,(20) Study done in Chin said that low level of awareness, deficiency of actual screening programs and

inadequate attention to women's health care are the causal factors of higher occurrence of cervical cancer (5). Study done on cervical cancer screening: revealed that more than half of the respondents had poor knowledge on different features such as symptoms of the cervical cancer, possible causes of CC and they failed to know the screening test used to test cervical cancer (17).

Also, study done in India identified that majority of respondents had knowledge of pap test but only few of them had done pap test (21). Another Study identified that there was poor knowledge on etiology and management, no qualified personnel as well as no efficient screening service. (22)

However, study done in dar-es-salaam on Risk factors for VIA positivity and Determinants of screening attendances, revealed women with poor education, married at small age were further prone to be visual inspection with acetic acid (VIA) test positive, and HIV positive women, more often play part in cervical cancer screening compared to HIV negative women were few exposed for screening. (10)

#### **2.4 Perceived barriers for women on cervical cancer screening**

Study done in Dar es salaam revealed that, more than half said that an obstacle not able to reach health facility for service was one of the issues, while more than quarter of women showed that were unwilling to go for any test in absenteeism of disease (10). Also few of women stated that shortage of medical advice and fear of being diagnosed to have cervical cancer was the obstacles.

Moreover, study done in Zaria hospital, some of respondents who were not been screened (5), and reported to have numerous issues such as, fear of being stigmatized, fear of injury from inexperienced nurses, and inadequacy of awareness of the service, said those were their perception of not engaging on cervical cancer screening.

Likewise, study done in Malaysia, identified that poor information on cancer screening are the chief obstacle, as the respondent said didn't hear anything about cervical cancer before, otherwise information heard after identified to have cervical cancer (19).

Though study done in Ghana recognized the deficiency of screening sites, screening sites are far away from their homes and health education program not provided to the site was the barrier to cervical cancer screening service.(23)

Also, study done in Ruvuma shows barriers were shame, discomfort, troublesome of the procedure and sometimes feeling of emotional anxiety or discomfort.(24)

Additionally, study done in Nigeria showed that absence of screening services in the most of health facilities were the major obstacle to them not going for cervical cancer screening (24). As well another study showed that nearly all women perceived that the responsible one who prevents the women from being screened is God's will and destiny (25).

### **2.5 Perceived barriers of Health care provider**

In a study done in pagos noted that apart from patients' delay in seeking healthcare, there was also delay in referring patients to a tertiary hospital by health care providers which contributed to the late presentation too (23).

The sex of the health worker who performs the Pap test, therefore, may be important as women may prefer one who is female (17). Study done among Nurses in Ahmadu Ballo university teaching hospital Zaria, explained that level of nurses who are ready to teach women who require the screening service was low (22).

## **CHAPTER THREE**

### **3.0 METHODOLOGY**

#### **3.1 Study design**

This was a cross sectional study with both quantitative and qualitative methods approaches.

In quantitative part questionnaires was used for participants in CTC and reproductive clinic while in the qualitative part interviews were conducted to collect the data.

#### **3.2 Study setting**

Manyara region is located in northern part of Tanzania whereby it has six districts Simanjiro, kiteto, babati rural, babati urban, mbulu and hanang. Simanjiro is the biggest district with estimated of 178,693 people in 2012.

The study has been conducted in simanjiro due to the cancer registry in kcmc which shows majority of the patients comes within the area. Health facilities which provide cervical cancer screening services were visited which were Mirerani health centre, Orkesumet health centre, Naberera health centre and Orkesumet designated hospital. The study was conducted among different clinics which are care and treatment clinic and reproductive clinic where by majority of the clinics running from monday to friday from 7.30 to 3.30pm. On average, according to ctc registry about 60-80 women are attended per month and in rch clinic about 100-200 per month according to the rch registry.

#### **3.3 Study population**

The study included two main categories of women in the study setting. First included women aged 15 and above who attended CTC clinic and the second 15 and above women who attended reproductive clinic also it includes health care providers providing cervical cancer screening process.

### 3.4 Sample size estimation.

The sample size was calculated using Fischer's /Lesley formula:

$$n = \frac{z^2 p (100-p)}{E^2}$$

Where; n= minimum number of people in the study

Z = Standard normal deviate (i.e. 1.96) - 95% Conf. Interval

p= 7.9% Prevalence of uptake in previous study done in Dodoma

E= margin of error on p which was taken as 3%

$$n = \frac{1.96^2 \times 7.9 (100-7.9)}{3^2}$$

$$n = 317$$

Therefore the minimum sample size needed for this study was 317 participants.

By adjusting for non-response whilst considering 10% as non response rate

$$\frac{N \times 10\%}{100-10}$$

$$100-10$$

$$\frac{317 \times 10}{90} = 35.2$$

$$90$$

The required sample size was 317+35.2=352.

Therefore, a minimum of 352 participants were surveyed

### 3.5 Sampling technique

First eligible participant was selected randomly followed by selecting members after an interval of two, through a systematic sampling procedure. For every woman presenting at the clinics for a routine follow-up visit, eligibility criteria was checked at the entrance desk and a sequential number was given by research assistant to each eligible participant according to the arrival order.

This procedure was repeated every day in each woman participating in clinics.

### **3.6 Inclusion criteria**

Study included all women from 15 years and above attending the (CTC and RCH) clinics in health facilities in Simanjiro.

### **3.7 Exclusion criteria**

All women who undergone total hysterectomy

Women who were very sick cannot respond to questions

### **3.8 Variables**

#### **3.8.1 Dependent Variables**

The dependent variable is uptake of cervical cancer screening among women attending health care facilities in Simanjiro, Tanzania.

#### **3.8.2 Independent Variables were in three groups**

Client factors which include age, marital status, level of education and parity

Health care provider factors which include failure to initiate the topic, huge workload, confidentiality, lack of knowledge and others

Health service factors which include lack of supplies, cost, accessibility, under staffing, availability of the services, quality of services, lack of clear policy on screening services

### **3.9 Data collection procedure/tools**

Two research assistants were trained by principal investigator in one day. The training was based on the purpose of the study and how to collect data using the questionnaires. Participants were interviewed; using questionnaires. Data was collected by investigator and two research assistants (registered nurses), after obtaining consent from the participants. Data were collected on weekdays during clinic hours. The questionnaires were translated into Swahili with the help of a language expert, and then translated back to English to ensure validity. Pretesting of the questionnaires was done among 10 women attending clinics and necessary changes were made to ensure the questionnaires are understandable.

### **3.10 Validity and Reliability**

Validity is the degree to which an apparatus determine what is planned to measure.

Reliability is the degree to which an assessment tool produces stable and consistent results.

Questions were short, clear, readable and understandable to respondents. The

questionnaires were pretested initially at Simanjiro hospital subsequent amendments were made before the final study undertaken. These data were not part of the final analysis of the study.

### **3.11 Data management and analysis**

The data were entered, processed and analysed by using SPSS version 23. The data were cleaned, new variables created and categorized where necessary. Descriptive statistics were summarized by using frequency and proportion for categorical variables and measure of central tendency (median) with respective measure of dispersion (range) were used for continuous variables. Logistic regression models were performed to obtain odds ratios (ORs) with 95% confidence interval (CI) for the association between a set of explanatory variables and uptake of cervical cancer screening. A p-value of less than 5% was considered statistically significant.

### **3.12 Qualitative Part**

By using a purposive sampling method, individuals who were knowledgeable and experienced with Cervical cancer screening were selected for interview. It involved in depth interviews from six health care providers from Orkasumet hospital, Mirerani hospital, Mirerani health centre, Naberera health Centre, KKKT Orkasumet and Orkasumet health centre. The interviews were audio recorded and transcribed and carefully labelled. A researcher used a thematic analysis (deductive) approach, whereby a thorough reading and familiarization of the information was done to explore the meanings associated with the concepts from the transcriptions of the participants' descriptions. The themes and categories were finally identified as shown in the figure below.



### **3.13 Ethical considerations**

Ethical approval of the study was obtained from the Research and Publication Committee of Muhimbili University of Health and Allied Sciences (MUHAS). Permission to conduct the study was obtained from Regional Medical Officer in Manyara, district medical Officer and from Simanjiro health facilities. Participants were asked to participate voluntarily and consent form will be signed. They will be informed about the objectives of the study and how is going to be conducted. For those females below 18 years informed consents were given to the parent or guardian explained the aim and importance of conducting the study and was asked to sign on behalf, the benefits and risks was explained. Confidentiality were maintained throughout by ensuring that no names are used that can identify the participant and the whole interview undertaken in a chosen room where no one else was around. The copies of the ethical approval and permission letter to conduct the study in Simanjiro have been attached in appendix 3 and 4 respectively.

## CHAPTER FOUR

### 4.0 RESULTS

#### 4.1 Characteristics of the study participants

This study included a total of 352 study participants. The median age (range) of the study participants was 26.5 (15 – 61) years. However; 234 (66.5%) were aged 15 – 29 years, 235 (66.5%) had parity  $\leq 3$ , 250 (71.1%) were Christians, 179 (50.8%) were residing in rural areas, 283 (80.4%) were married, 190 (53.9%) had primary education, 185 (52.6%) were peasants, 179 (50.9%) owned business as a source of income, 313 (88.9%) had ever heard about cancer, 291 (82.7%) had ever heard about cervical cancer, 299 (84.9%) had never had cervical cancer screening, 33 (9.4%) had ever heard about anyone with cervical cancer, 57 (16.2%) had ever heard about someone who had undergone cervical cancer screening, 74 (21.1%) had perceived cervical cancer to be a dangerous disease and 167 (47.4%) thought cervical cancer screening was free. This is shown in Table 1 and in Table 2.

**Table 1: Demographic characteristics of the study participants (n=352)**

Characteristics	Frequency	Percentage
Age (years)		
Median (range)	26.5 (15 - 61)	
Age (years)		
15 – 29	234	66.5
30 and above	118	33.5
Parity		
≤ 3	266	75.6
> 3	86	24.4
Religion		
Muslim	102	28.9
Christian	250	71.1
Residence		
Urban	173	49.2
Rural	179	50.8
Marital status		
Ever Married	286	81.3
Never married	62	17.6
Education		
None	20	5.7
Primary	190	53.9
Secondary	121	34.4
Tertiary	21	5.9
Occupation		
Peasant	185	52.6
Employed	59	16.8
Business	90	25.6
No employment	18	5.1
Source of Income		
Salary	32	9.1
Agriculture	122	34.7
Business	179	50.9
Others	19	5.4

**Table 2: Awareness about cervical cancer (n=352)**

Characteristics	Frequency	Percentage
Ever heard about cancer		
No	39	11.1
Yes	313	88.9
Ever heard about cervical cancer		
No	61	17.3
Yes	291	82.7
Ever heard about anyone with cervical cancer		
No	319	90.6
Yes	33	9.4
Ever heard about anyone who had ever screened		
No	295	83.8
Yes	57	16.2
Perceived danger of cervical cancer		
No	278	78.9
Yes	74	21.1
Free screening services		
No	185	52.6
Yes	167	47.4

#### 4.2 Uptake of cervical cancer screening

The uptake of cervical cancer screening was 15.1% (53). Of these 43 (81.1%) had cervical cancer screening once and 10 (18.9%) had cervical cancer screening twice. This is shown on Table 3 and Table 4.

**Table 3: Cervical cancer screening uptake by Demographic characteristics of the study participants (n=352)**

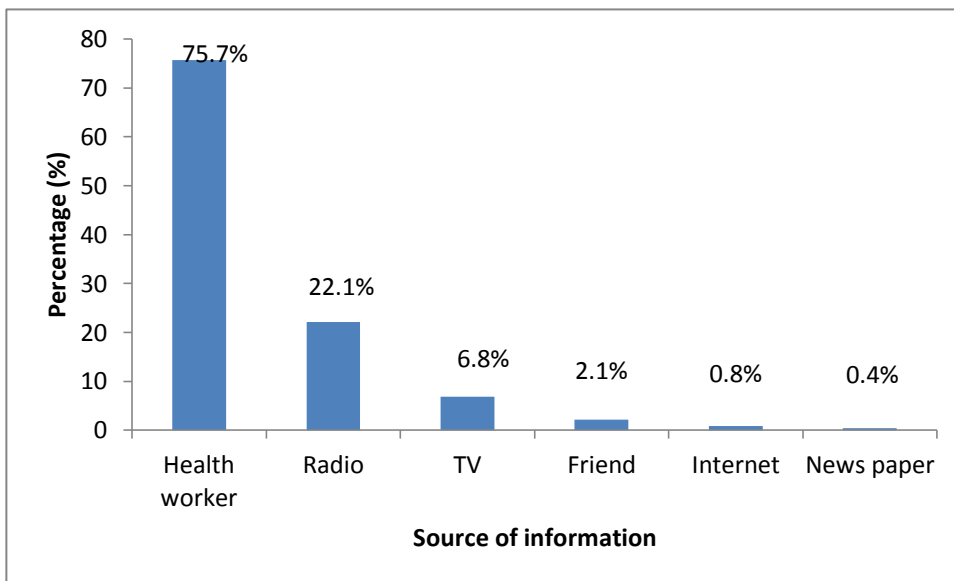
Characteristics	Cervical cancer screening uptake	
	n (%)	Total n (%)
Age (years)	53 (15.1)	
15 – 29	17 (32.1)	210 (59.7)
30 and above	36 (67.9)	142 (40.3)
Parity		
≤ 3	36 (67.9)	266 (75.6)
> 3	17 (32.1)	86 (24.4)
Religion		
Muslim	15 (28.3)	102 (28.9)
Christian	38 (71.7)	250 (71.1)
Residence		
Urban	29 (54.7)	173 (49.1)
Rural	24 (45.3)	179 (50.9)
Marital status		
Ever married	41 (77.4)	283 (80.4)
Never married	12 (22.6)	69 (19.6)
Education		
None	1 (1.9)	20 (5.7)
Primary	30 (56.6)	190 (53.9)
Secondary / Tertiary	22 (41.5)	142 (40.3)
Occupation		
Peasant	16 (30.2)	185 (52.6)
Employed	15 (28.3)	59 (16.8)
Business	21 (39.6)	90 (25.6)
No employment	1 (1.9)	18 (5.1)
Source of Income		
Salary	7 (13.2)	32 (9.1)
Agriculture	11 (20.8)	122 (34.7)
Business	31 (58.5)	179 (50.9)
Others	4 (7.6)	19 (5.3)

**Table 4: Cervical cancer screening uptake by level of awareness (n=352)**

Characteristics	Cervical cancer screening uptake n (%)	Total n (%)
Ever heard about cancer		
No	1 (1.9)	39 (11.1)
Yes	52 (98.1)	313 (88.9)
Ever heard about cervical cancer		
No	1 (1.9)	61 (17.3)
Yes	52 (98.1)	291 (82.7)
Ever heard about anyone with cervical cancer		
No	39 (73.6)	319 (90.6)
Yes	14 (26.4)	49 (13.9)
Ever heard about anyone who had ever screened		
No	23 (43.4)	295 (83.8)
Yes	30 (56.6)	57 (16.2)
Perceived danger of cervical cancer		
No	38 (71.7)	278 (78.9)
Yes	15 (28.3)	74 (21.1)
Free screening services		
No	10 (18.9)	185 (52.6)
Yes	43 (81.1)	167 (47.4)

### 4.3 Source of information about cervical cancer screening

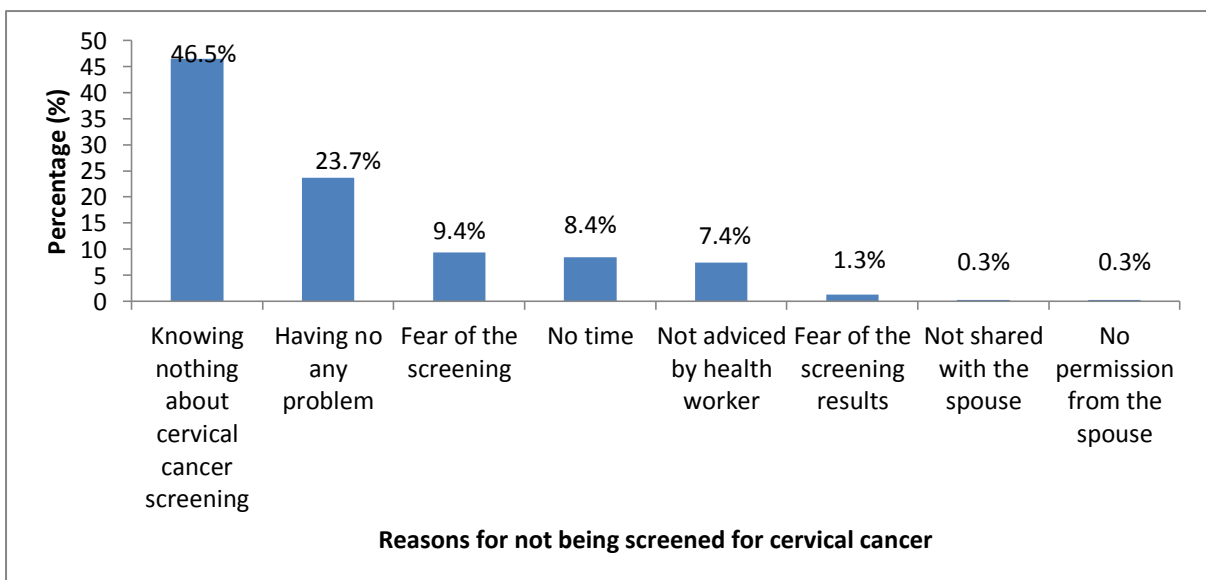
Among 352, 235 (66.8%) had ever heard about cervical cancer screening. Of these 235; 178 (75.7%) heard from health worker, 52 (22.1%) heard from radio, 16 (6.8%) heard from television, 5 (2.1%) heard from a friend, 2 (0.8%) heard from internet, 1 (0.4%) heard from newspapers. This is shown on Figure 1.



**Figure 1 Source of information about cervical cancer screening (n=235)**

#### 4.4 Reasons for not having cervical cancer screening done

Among 352, 299 (84.9%) had never had cervical cancer screening. Of these 299; 139 (46.5%) knew nothing about cervical cancer screening, 25 (8.4%) had no time for cervical cancer screening, 28 (9.4%) feared the screening process, 4 (1.3%) feared to receive screening results, 71 (23.7%) had no problem requiring cervical cancer screening, 22 (7.4%) had not been advised by health workers, 1 (0.3%) had not shared with their spouses about cervical cancer screening and 1 (0.3%) had no permission from the spouse to undergo cervical cancer screening. This is shown from Figure 2.



**Figure 2: Reasons for not having cervical cancer screening (n=299)**



#### **4.5 Factors associated with uptake of cervical cancer screening**

In the bivariate analysis it was observed that factors such as parity, religion, residence, marital status, education and source of income were not associated with uptake of cervical cancer screening. However in the multivariate analysis, it was revealed that age (30 - 44) years (aOR=3.47, 95% CI: 1.84 – 6.54,  $p < 0.001$ ) whereby those who are aged 30 to 44 years are 3.47 more likely to have cervical cancer screening compared to those aged 15 -29 years. Those who are employed had 4.28 times higher chances of having undergone cervical cancer screening compared to those who are peasants (aOR= 4.28, 95% CI: 1.89 – 9.67,  $p < 0.001$ ). Those who owned businesses were 3.45 more likely to have cervical cancer screening compared to the peasants (aOR=3.45, 95% CI: 1.66 – 7.17,  $p=0.001$ ). Those who had ever heard about cervical cancer had 11.04 times higher odds of having cervical cancer screening compared to those who have never heard about cervical cancer (aOR=11.04, 95% CI: 1.48 – 18.21,  $p=0.019$ ). Those who had no source of information were less likely to have cervical cancer screening compared to those who had a source of information mentioned (aOR=0.03, 95% CI: 0.00 – 0.27,  $p=0.001$ ). Those who had ever heard about anyone with cervical cancer were 4.82 times more likely to have cervical cancer screening compared to those who had never heard about anyone with cervical cancer (aOR= 4.82, 95% CI: 2.18 – 10.66,  $p<0.001$ ). Those who had ever heard about anyone who had ever screened were 12.38 times more likely to have cervical cancer screening compared to those who had never heard about anyone who had ever screened (aOR=12.38, 95% CI: 6.20 – 14.71,  $p<0.001$ ) and those who thought screening services are free were 5.15 time more likely to have screening compared to those who thought that it is not free (aOR=5.15, 95% CI: 1.94 – 13.69,  $p=0.001$ ). This is shown on Table 5.

**Table 5: Factors associated with cervical cancer screening uptake (n=352)**

Factors	Cervical cancer Screening Uptake		cOR (95% CI)	p-value	aOR (95% CI)	p-value
	No n (%)	Yes n (%)				
Age (years)						
15 – 29	193 (64.5)	17 (32.1)	reference		Reference	
30 – and above	106 (30.8)	35 (66.0)	4.32 (2.29 ;8.11)	<0.001	3.47 (1.84 ; 6.54)	<0.001
Occupation						
Peasant	169 (56.5)	16 (30.2)	reference		Reference	
Employed	44 (14.7)	15 (28.3)	3.60 (1.65 ; 7.84)	0.001	4.28 (1.89 ; 9.67)	<0.001
Business	69 (23.1)	21 (39.6)	3.21 (1.58 ; 6.53)	0.001	3.45 (1.66 ; 7.17)	0.001
No employment	17 (5.7)	1 (1.9)	0.62 (0.08 ; 4.98)	0.654	1.01 (0.12 ; 8.40)	0.991
Ever heard about cancer						
No	38 (12.7)	1 (1.9)	reference		Reference	
Yes	261 (87.3)	52 (98.1)	7.57 (1.02 ; 16.38)	0.048	5.99 (0.79 ; 8.96)	0.082
Ever heard about cervical cancer						
No	60 (20.1)	1 (1.9)	reference		Reference	
Yes	239 (79.9)	52 (98.1)	13.05 (1.77 ; 19.35)	0.012	11.04 (1.48 ; 18.21)	0.019
Source of information / knowledge						
TV/Radio/news paper	43 (14.4)	13 (24.5)	reference		Reference	
Friend/internet	6 (2.0)	2 (3.8)	1.10 (0.19 ; 6.13)	0.911	1.03 (0.18 ; 5.94)	0.971
Health worker	134 (44.8)	37 (69.8)	0.91 (0.44 ; 1.87)	0.805	0.93 (0.44 ; 1.95)	0.851
None	116 (38.8)	1 (1.9)	0.03 (0.00 ; 0.22)	0.001	0.03 (0.00 ; 0.27)	0.001

Perceived barrier						
No	1 (0.3)	51 (96.2)	reference		Reference	
Yes	298 (99.7)	2 (3.8)	0.0001 (0.00001 ; 0.001)	<0.001	0.001 (0.0001 ; 0.002)	0.999
Ever heard about anyone with cervical cancer						
No	280 (93.7)	39 (73.6)	reference		Reference	
Yes	19 (6.3)	14 (26.4)	3.29 (2.01 ; 14.69)	0.001	4.82 (2.18 ; 10.66)	<0.001
Ever heard about anyone who had ever screened						
No	272 (90.9)	23 (43.4)	reference		Reference	
Yes	27 (9.1)	30 (56.6)	13.14 (6.71 ; 25.73)	<0.001	12.38 (6.20 ; 14.71)	<0.001
Free screening services						
No	175 (58.5)	10 (18.9)	reference		Reference	
Yes	124 (41.5)	43 (81.1)	6.07 (2.94 ; 12.54)	<0.001	5.15 (1.94 ; 13.69)	0.001

#### 4.6 Readiness of women for cervical cancer screening

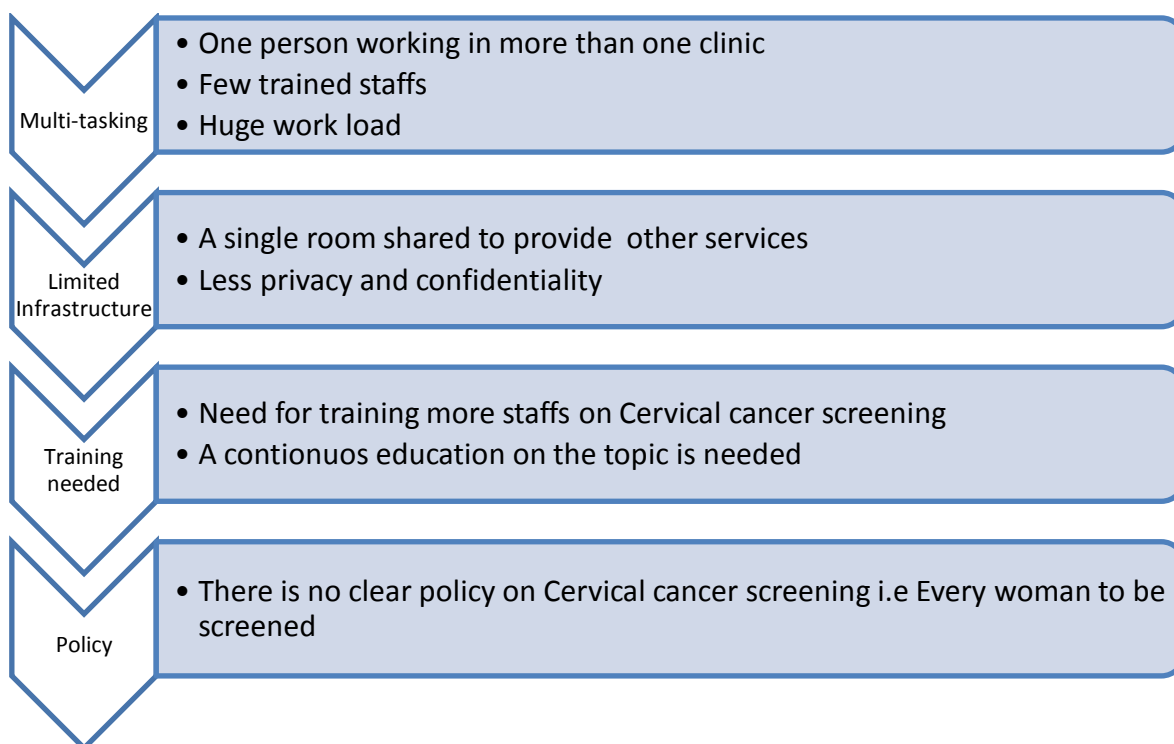
From the multivariate analysis; those who were ready for cervical cancer screening were more likely to screen compared to those who were not ready for cervical cancer screening (aOR=8.29, 95% CI: 1.89 – 13.49, p=0.005). Other barriers were not significant. This is shown on Table 6.

**Table 6: Factors associated with cervical cancer screening (n=352)**

	Danger getting cervical cancer		cOR (95% CI)	p-value	aOR (95% CI)	p-value
	No n (%)	Yes n (%)				
Ready for cervical cancer screening						
No	52 (18.7)	2 (2.7)	Reference		Reference	
Yes	226 (81.3)	72 (97.3)	8.28 (1.96 ; 14.86)	0.004	8.29 (1.89 ; 13.49)	0.005
Free screening services						
No	154 (55.4)	31 (32.4)	Reference		Reference	
Yes	124 (44.6)	43 (58.1)	1.72 (1.03 ; 2.89)	0.04	1.55 (0.89 ; 2.68)	0.114
Accept free cervical screening services						
No	36 (12.9)	5 (6.8)	Reference		Reference	
Yes	242 (87.1)	69 (93.2)	2.06 (0.78 ; 5.43)	0.147	0.99 (0.35 ; 2.88)	0.998
Ever had vaginal bleeding apart from normal						
No	256 (92.1)	67 (90.5)	Reference		Reference	
Yes	22 (7.9)	7 (9.5)	1.22 (0.49 ; 2.97)	0.668	1.15 (0.45 ; 2.90)	0.773
Ever heard woman bleeding per vaginal apart from normal						
No	240 (86.3)	58 (78.4)	Reference		Reference	
Yes	38 (13.7)	16 (21.6)	1.74 (0.91 ; 3.34)	0.094	1.56 (0.88 ; 3.13)	0.208

#### 4.8 Health care provider barriers towards cervical cancer screening.

The qualitative study came up with the following observations which compliment the quantitative findings:



**Figure2.** Health care provider barriers toward providing cervical cancer screening services among health care workers in CTC and Reproductive clinics in Simanjiro District.

#### Multi- tasking issues

Some health care providers reported to work in more than one clinic, and the clients who are coming for screening services must wait till the HCW finishes her duty.

*“We are not specifically working in one clinic like myself I work in antenatal clinic and family planning clinic as well I do screening for cervical cancer so if most of the time when a client comes for screening she is supposed to wait until I finish providing services at that clinic”* a respond from Orkasumet health centre,

*“I work in outpatient department but I also provide cervical cancer screening services so if the client come she has to wait”* a respondent from KKKT Orkasumet.

#### **4.9 Institutional factors**

##### **Limited infrastructures.**

There is a limited number of rooms available for examination/investigation where as one room can be used by more than one clinic. This makes less privacy and confidentiality for those who come for screening services.

*“Sometimes there is no confidentiality because the room we use for screening is also used for other services like family planning”* a respondent from Mirerani hospital.

##### **Few Trained providers.**

There are few service providers who are trained for cervical cancer screening, so that if the trained one is absent, there will be no service on that particular day.

*“We don't have enough trained service providers if one is sick and the other one is on leave the investigations are not available”* respondent from Naberera health centre

*‘We need training to improve quality of services, also training is important to other providers as we are two who provide this screening services and huge work load’.* A response from Mirerani hospital.

##### **Policy.**

It was also noted that there is no clear policy on cervical cancer screening to be a compulsory test for every woman as it is in other clinics.

*“There is also lack of clear policy for all women to undergo compulsory screening except pregnant woman like what CTC clients do”* a reply from Mirerani hospital

## CHAPTER FIVE

### DISCUSSION

In our study we identified low uptake of cervical cancer screening among women aged 15 years and above attending health care facilities in Simanjiro district in Manyara, Tanzania. Majority of respondents in this study perceived that there are barriers to perform cervical cancer screening which is necessary for women of reproductive age. Those barriers were never heard about cervical cancer screening; fear the screening process, not getting permission from their spouses and the cervical cancer screening causes pain.

This study found that socio demographic factors that are age, marital status, level of education and occupation influence the cervical cancer screening uptake rate. This finding is consistent with the studies reported in previous studies(33,34) which suggested that the low screening rate could be explained by the majority of the study sample consisting of women with low levels of education, women on a low income, and unemployed women; the result was in line with other studies (36) .Study done by Al-amro in Jordan(38) reported that health care provider increases uptake of cervical cancer screening. This finding is similar with our study findings that majority heard about cervical cancer screening from healthcare providers.

The study revealed that the uptake of cervical cancer screening was low where by similar study done in Nigeria reported even lower proportion of women who underwent cervical cancer screening. (13). In contrast to a study done in Tanzania, the respondents did not see the rationale of doing cervical cancer screening, more than half of the respondents did not understand where to go for the screening as well as afraid of receiving bad outcomes (36)

Similar result was reported in studies conducted in northern Ethiopia, majority of respondents agreed that precancerous cervical screening is beneficial for their wellbeing (30) and a study done in the Niger Delta, the respondents thought that early discovery of cervical cancer is fine for management of the outcome. (37)

In another study done in Ethiopia reported that majority of study participants had ever heard about cervical cancer but only few knew the important of screening and few had positive perception about cervical cancer screening. However; findings of this study suggest that there should be sensitization specifically for rural areas about cervical cancer screening.

The independent predictors for cervical cancer screening were: being recommended for screening by a health worker, knowing where cervical cancer screening services were offered and knowing someone who had ever been screened for the disease. Similar predictors for cervical cancer screening have been reported in previous studies. Indeed, studies carried out in Uganda (25), Jamaica (27, 28) and the United States (26) found that women who had been recommended for screening by a health worker were more likely to be screened. Other studies found an association between awareness of cervical cancer services and undergoing screening (25, 26-27).

For marital status, women who ever married had witness to have positive perception toward screening. This could be due to the most of respondent's group has their own decision making. Study done in south east Nigeria by employment status and marital status were statistical significant associated with the cervical cancer screening practice (39).

Age of respondents and marital status found to be statistically significant association. In contrast, study done in Ilala municipality, Dar es Salaam showed that there were no association between marital status and education level (40). The finding that women who had been recommended for screening by a health worker were over seven times more likely to have been screened for the disease is an indication that most women only got screened after they had been told to do so by a health worker. This presents both a challenge and an opportunity.

A challenge that many times cervical cancer is diagnosed in its late stages as most women would not have accessed the service until it is late. The opportunity presented is that health workers can be used as an effective intervention to increase utilization of screening services among women.



#### Factors associated with uptake of cervical cancer screening

Most of respondents their age ranged between 30 years and above had positive perception about cervical cancer screening. For marital status, women who ever married had witness to have positive perception toward screening. This could be due to the most of respondent's group has their own decision making. Study done in South East Nigeria by employment status and marital status were statistical significant associated with the cervical cancer screening practice (39).

Majority of the women aged 30 and above years seemed to have ever had about cervical cancer screening because at this age most of women have more than one child and they have received a lot of health talks about cervical cancer screening in their visits of RCH clinics. Age of respondents and marital status found to be statistically significant association. In contrast, study done in Ilala Municipality, Dar es Salaam showed that there was no association between marital status and education level (40).

#### Perceived barriers towards cervical cancer screening

Majority of the study participant perceived that there is a danger of getting cervical cancer. However, findings of this study suggest that there should be sensitization specifically for rural areas about cervical cancer screening.

In this study it revealed that majority were ready for cervical cancer screening this is in contrast to study done in Tanzania which revealed that few of the respondents did not see the rationale of doing cervical cancer screening, more than half of the respondents did not understand where to go for the screening and minority fear of receiving bad outcome (36).

As well study done in Northern Ethiopia, majority of respondents majority agreed that precancerous cervical screening is beneficial for their healthy(30). Similar to study done in Northern Ethiopia more than half of the respondents agreed that cervical cancer can be severe and may be harmful to their health.

Additional in South East Nigeria for the most part most of the respondents perceived that cervical cancer is seriousness disease than other cancers.

Majority of participants accepts that the services of cervical cancer screening are free (39)

### Perceived barriers of Health care providers towards cervical cancer screening

In this study it was found that one worker/staff can be working in more than one clinic at the same time, due to shortage of staff. There was an observation in Belize that there is an overloaded provider responsibilities(41).

In addition to the study done in Malawi revealed that few number of staffs who have been trained in cervical cancer screening were affected by the availability and use of cervical cancer screening services (42).

Also the study shows that participants has limited number of frequent training on Cervical cancer screening, it was also found in a study done in Tanzania where by majority of the health care providers who were interviewed reported that they had no any training on cervical cancer screening.(43)

This is similar to the study done in Malawi that there is no availability of ongoing refresher trainings that will help cervical cancer screening health providers to stay up-to-date on screening skills and insufficient resources. (42)

In this study it revealed that there was limited in number of screening places where by a single room was used to provide other services which lowers the level of privacy and confidentiality of the clients where the situation is similar to the study done in Malawi which revealed that some screening facilities shared spaces with other programs that leads to lack of privacy.(42)

There is no clear policy that rules out that every woman must undergo CC screening, as it has been done for other conditions like HIV/AIDS.

Similar study done in Belize claimed that though Cervical cancer prevention is a global priority, Cervical Cancer Screening was not given priority and it was not taken seriously in some hospitals (41). There is a limited or inconsistent screening and patient management policies shown in a study done across Sub Saharan Africa. (44)

**LIMITATION OF THE STUDY**

Being a cross sectional study, it is not possible to assess causality, also cervical cancer screening status was self-reported and could have been affected by social desirability. However, potential bias was minimized by asking respondents to provide dates when they accessed the service and duration since they last accessed it, which ensured reliability and validity of the data. Although the study had a sample size (N = 352), there was low uptake of cervical cancer screening (15.1%), which affected the statistical tests and led to some wide confidence intervals.

## **CHAPTER SIX**

### **CONCLUSION**

- In conclusion, cervical cancer screening is currently recognized as the most effective approach for cervical cancer control, and it is associated with reduced incidence and mortality from the disease.
- The findings of this study show the level of uptake of cervical cancer screening is low which reveal that there should be sensitization specifically for rural areas about cervical cancer screening.
- Factors like demographic, uptake, and barriers are associated with a decreased likelihood of women utilizing this screening.

### **RECOMMENDATIONS**

- There is need to increase access to cervical cancer screening in rural areas so as to increase utilisation of the service.
- In addition, cervical cancer screening can be increased by utilizing health workers to discuss the disease with women when they go to seek health care.
- Cervical cancer screening services should be integrated with other health services so that women accessing various health services can also be able to access cervical cancer information and screening services.
- It is important to promote spouse involvement in cervical cancer screening since men are decision makers in most homes and they are the ones who provide financial support for accessing services.
- The public should be sensitized about the existence and severity of cervical cancer and the importance of early and routine screening.

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## APPENDICES



### MUHIMBILI UNIVERSITY AND ALLIED HEALTH SCIENCES DIRECTORATE OF RESEARCH AND PUBLICATIONS

#### **Appendix 1A: English Consent Form**

##### **Consent to participate in the study**

Greetings! My name is **Joyce John Kivugo** with Registration number HD/MUH/T.814/2019

I am student of master of Applied Epidemiology at Muhimbili University and allied health sciences doing research on Uptake and barriers to cervical cancer screening among women attending RCH and CTC in health facilities in Simanjiro District.

##### **Purpose and Description of the Research**

The purpose of the study is to assess the Uptake and barriers to cervical cancer screening among women attending RCH and CTC in health facilities in Simanjiro. The research results will be disseminated through publication and in a thesis for academic purpose

##### **Voluntary Participation**

Please note that your participation in this study is entirely voluntary and you have a right to refuse to participate. If you authorize to take part in the study, you also have the right to withdraw from study at any time if you wish to do so, without giving a reason. Your decision to withdraw will not affect anything on your right to access care and treatment at the Health centre.

### **Under 18 years old participants**

Consent from under eighteen years will be obtained from parents/guardian and the signature will be required benefits and alternatives are explained and the parents /guardians are allowed to refuse to participate.

### **Benefits**

If you agree to participate in this study there may be no direct benefit to you. However the information you provide will help to identify factors that still need to be filled on Uptake and barriers to cervical cancer screening among women attending RCH and CTC in health facilities in Simanjiro

### **Alternatives**

The Alternative of participating in this study is to decline to take part

### **Risks and Discomfort**

No risk or harm is expected by participating in this study.

### **Confidentiality**

All information collected will be kept confidential and no one will be told on what you have said, your identity and participation in this study will be anonymous .In addition your name will not appear in the questionnaire. Only people working in this study will have access to the information.

### **Who to contact**

If you ever have questions about this study, you should contact the study Supervisors **Prof.JaphetKillewo** or the Principal Investigator **Joyce John Kivugo** of Muhimbili University and Allied Health Sciences, P.O BOX 65001,DarEsSalaam.

### **Signature**

I .....I have understood and agree the contents in this form.

My questions have been answered. I have accepted to participate in this study.

Signature.....

Signature of research assistant.....

Date of signed consent.....

**CHUO KIKUU CHA SAYANSI YA AFYA NA SAYANSI SHIRIKISHI  
MUHIMBILI**



**Appendix 1B: Consent Form Swahili Version**

**Fomu ya Makubaliano ya Kushiriki**

**Namba ya utambulisho.....**

Habari! Mimi naitwa Joyce John Kivugo mwanafunzi katika Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili nikifanya utafiti kuhusu Kiwango cha uchunguzi wa saratani ya shingo ya uzazi na sababu za kutokufanya uchunguzi kati ya wanawake wanao hudhuria katika kliniki ya magonjwa ya uzazi wa kina mama na kliniki ya wenye maambukizi ya virusi vya ukimwi katika hospitali ya Simanjiro

**Dhumuni Na Maelezo kuhusu huu Utafiti**

Dhumuni ya huu utafiti huu nikujua sababu za kutokufanya uchunguzi kati ya wanawake wanaohudhuria katika kliniki ya magonjwa ya uzazi wa kina mama na kliniki ya wenye maambukizi ya virusi vya ukimwi.

**Ushiriki wa hiari**

Nakuomba utambue kwamba ushiriki katika utafiti huu ni wa hiari na una kila haki ya kukataa kushiriki, na endapo utakubali kushiriki pale utakapotaka kujitoa hauto athiri huduma zako unazopewa hospitalini hapa nakama utashiriki una haki pia ya kujitoa katikati ya utafiti muda wowote bila kutoa sababu ya kwanini unajitoea na uamuzi wako hautoathiri matibabu yako katika hospitali ya Muhimbili.

**Washiriki chini ya miaka 18**

Wazazi au walezi wanaombwa kutoa ridhaa ya watoto wao kushiriki katika utafiti kuhusu uchunguzi huu pamoja na kusaini kuelezwa faida na hasara zinazoweza kutokea wakati wa utafiti na kukubaliwa endapo hawataridhia na utafiti huu.

**Faida**

Kama utakubali kushiriki kwenye Utafiti huu hakutokuwa Na faida za moja Kwa moja ILA maelezo utakayonipa yatasaidia kupata uelewa kuhusu saratani ya shingoya kizazi Na namna uchunguzi huu unavyofanyika.

**Njia Nyingine**

Njia nyingine ya huu utafiti ni kukataa kwako kwenye kushiriki katika huu utafiti.

**Hatarishinaathari**

Zoezi hili halina madhara na athari zozote kwa mshiriki na kwa mtu mwingine yeyote.

**Usiri**

Taarifa zote za mshiriki zitakazokusanywa ni za siri na hamna mtu yeyote asiyehusika ataambiwa,kupewa taarifa zako ambazo umezitoa na ushiriki wako kwenye huu utafiti na kwa kuongezea jina lako halitolewa kwenye dodoso hili ili kusesitizia usiri utakaokuwepoTaarifa zote za mshirikini za siri. Ni watu ambao watakuwa wahusika wa huu utafiti ndio watakuwa wanaweza kupata maelezo ya hizi taarifa.

**Kwa mawasiliano.**

Kwa yeyote mwenye maswali kuhusu huu utafiti anaweza kuwasiliana name kwa anuani ifuatayo: Joyce John Kivugo,Muhas P.O BOX 65001,Dar Es Salaam au kuwasiliana na msimazi wangu Profesa Japhet Killewo MUHAS, S.L.P. 65001 Dar Es Salaam.Au unawezakufanyamawasilianona Bruno Sunguya Mwenyekiti wa Kamati ya chuo cha utafiti na uchapishaji, **S.L.P. 65001, Dar es Salaam. Simu 2150302-6, 2152489.**

**Sahihi**

Mimi.....nimeelewa nakukubaliana na vipengele vyote vya hii fomu.Maswali yangu yamejibiwa na ninakubali kushiriki kwenye huu utafiti.

Sahihi.....

Sahihi ya msaidizi wa utafiti.....

Tarehe yakukubalikushiriki.....

## Appendix 2A: Questionnaires (English Version)

Cervical cancer screening: uptake and barriers to cervical cancer screening among women attending health facilities in Simanjiro.

Serial No..... Date.....

### PART A: RESPONDENT'S DEMOGRAPHIC CHARACTERISTICS

**Please answer all questions and put a tick (√) on the box provided for the best answer.**

1. What is your age? ..... (Age in years)
2. Number of children.....
3. What is your religion?
  1. Christian
  2. Muslim
  3. Pagan
  4. Others (specify).....
4. Residence
  1. Urban
  2. Rural
5. What is your marital status?
  - 1 Married
  - 2 Single
  - 3 Divorced
  - 4 Widowed
  - 5 Others.....
- 6) What is your education level?
  1. None/Illiterate
  2. Primary School education
  3. Secondary School education
  4. university level
  5. others.....
- 7) What is your occupation?
  1. Housewife
  2. Peasant

3. Employed in Business enterprise
  4. Employed in Public/Private service
  5. Self employed
  6. Un-employed
- 8) What are main income sources of your family?
1. Wage/salary
  2. Farming
  3. Husbandry
  4. Wood and wood products
  5. Tourism
  6. Trading/business
  7. Rental income
  8. Assistance from relatives
  9. Pensions
  10. Others ( please specify)

**PART B: KNOWLEDGE ABOUT CERVICAL CANCER AND UPTAKE OF SCREENING**

9. Have you ever heard of cancer?
1. Yes
  2. No
- If yes, what was the source of your information?
1. TV
  2. Radio
  3. Print media
  4. A friend
  5. Health worker
  6. Internet
  7. Others.....
- 10) Have you ever heard about cervical cancer?
1. Yes
  2. No



If yes, what was the source of your information?

1. TV
2. Radio
3. Print media
4. Friend
5. Health worker
6. Internet
7. Others.....

11. Have you ever heard about cervical cancer screening?

1. Yes
2. No

If yes, what was the source of your information?

1. Television
2. radio
3. print media
4. a friend
5. health worker
6. internet
7. Others.....

12. Have you ever been screened for cervical cancer?

1. Yes
2. No

If yes, how many times have you been screened?

1. One time
2. Two times
3. Three times

13. Why were you screened?

.....

If no, why have you not screened for cervical cancer?

1. not aware of screening services
2. don't have time
3. scared of the process of screening

4. I'm scared to be told that I have cancer
5. I don't have any problem
6. the doctor has not advised me
7. the nurse has not advised me
8. I haven't consulted my partner
9. I don't have permission from my partner

14. Do you know anyone who has suffered from cervical cancer?

1. Yes
2. No

If yes, what was your relationship with you?

1. Mother
2. Sister
3. Auntie
4. Grand mother
5. Friend
6. Others.....

15. Do you know anyone who has been screened for cervical cancer?

1. Yes
2. No

If yes, what was the relationship with you?

1. Mother
2. sister
3. Auntie
4. grand mother
5. friend
6. Others.....

**PART C: BARRIERS ABOUT CERVICAL CANCER SCREENING**

For the following questions I would like you to know that Cervical Cancer is a disease that affects women from the age of 15 years and above

This disease can be prevented by women visiting health facilities to be screened for possible appearance of early cancer so that treatment can be provided

16. Do you think you are at risk of getting cervical cancer?

1. Yes
2. No

17. Are you willing to undergo this screening to prevent you from getting the cancer?

1. Yes
2. No

If no, why would you not be willing?

1. Fear of death when it is discovered late
2. Procedure is painful
3. Afraid of the procedure
4. Confidentiality
5. Others.....

18. Is a service of cervical cancer screening free?

1. Yes
2. No

19. If you told that it is a free service and you can screen at least once per year would you go for it?

1. Yes
2. No

20. Have you ever experienced any vaginal bleeding outside your normal menses?

1. Yes
2. No

21. Have you ever heard of any woman experiencing vaginal bleeding besides normal menses?

1. Yes
2. No

If yes, what action was taken?

1. Staying at home
2. Going to the hospital
3. Tell a friend for advice
4. Others.....

## **Appendix 2B: Maswali ya kiswahili**

### **Dodoso kiswahili**

Kiambatisho cha 1: maswali ya uchunguzi wa saratani ya kizazi:

Matumizi na vikwazo vya uchunguzi wa saratani ya kizazi kati ya wanawake wanaohudhuria vituo vya afya katika wilaya Simanjiro.

Namba ya dodoso..... Tarehe.....

### **SEHEMU YA KWANZA:**

1. Umri.....
2. Una watoto wangapi.....
3. Dini
  1. Muislamu
  2. Mkristu
  3. Mpagani
  4. Nyingine.....
4. Makazi
  1. Mijini
  2. vijijini
5. Hali yako ya ndoa?
  1. Nimeolewa
  2. Sijaolewa
  3. Talaka
  4. Mjane
  5. Nyingine.....
6. Je, kiwango cha elimu yako ni nini?
  1. Hakuna/sijasoma
  2. Elimu ya msingi
  3. Elimu ya sekondari
  4. Chuo kikuu
  5. Nyingine.....
7. kazi yako.....
  1. Mama wa nyumbani
  2. Mkulima

3. Umejiriwa kwenye biashara
  4. Umejiriwa serikalini/binafsi
  5. Umejiajiri
  6. Hauna ajira
8. Je, vyanzo vikuu vya mapato ya familia yako?
1. Mshahara
  2. kilimo
  3. ufugaji
  4. biashara ya kuni
  5. utalii
  6. biashara
  7. biashara ya kukodisha
  8. msaada kutoka kwa ndugu
  9. pensheni
  10. Nyingine

**SEHEMU YA PILI: MAARIFA KUHUSU SARATANI YA KIZAZI NA MATUMIZI  
YA UCHUNGUZI**

9. Je, umewahi kusikia kuhusu saratani ?

1. Ndiyo
2. Hapana

Kamandiyo, chanzo cha taarifa yako ni nini?

1. Runinga
2. redio
3. magazeti
4. rafiki
5. mhudumuwaafya
6. mtandao
7. nyingine.....

10. Umewahi kusikia kuhusu saratani ya shingo ya kizazi?

1. Ndiyo
2. Hapana

Kama ndiyo, chanzo cha taarifa yako ni nini?

1. Runinga
2. redio
3. magazeti
4. rafiki
5. mhudumu wa afya
6. mtandao
7. nyingine.....

11. Je, umewahi kusikia kuhusu uchunguzi wa saratani ya shingo ya kizazi?

1. Ndiyo
2. Hapana

Kamandiyo, chanzo cha taarifa ni nini?

1. Runinga
2. redio
3. magazeti
4. rafiki
5. mfanyakazi wa afya
6. mtandao

12. Je, umewahi kufanyiwa uchunguzi wa saratani ya shingo ya kizazi?

1. Ndiyo
2. Hapana

Kama ndiyo, ni mara ngapi?

1. moja
2. mbili
3. tatu

13. Kwanini ulifanyiwa uchunguzi wa saratani ya shingo ya kizazi?

.....

Kama hapana, kwanini hujafanyiwa uchunguzi wa saratani ya shingo ya kizazi?

1. Sijui chochote kuhusu uchunguzi wa saratani ya shingo ya kizazi
2. Sina muda
3. Naogopa namna uchunguzi unavyofanywa
4. Naogopa kuambiwa nina saratani ya shingo ya kizazi

5. Sina shida yoyote
6. Daktari hajanishauri
7. Muuguzi hajanishauri
8. Sijamshirikisha mwenza wangu
9. Sijapewa ruhusa na mwenza wangu

14. Je, unamfahamu mtu yeyote ambaye amepata ugonjwa wa saratani ya shingo ya uzazi?

1. Ndiyo
2. Hapana

Kama ndiyo, uhusiano wako na wewe ni upi?

1. Mama
2. dada
3. shangazi
4. Bibi
5. Rafiki
6. Mwingine.....

15. Je, kuna mtu yoyote unayemfahamu ambaye amefanyiwa uchunguzi wa saratani ya shingo ya kizazi?

1. Ndio
2. Hapana

Kama ndio, una uhusiano gani naye?

1. Mama
2. dada
3. shangazi
4. Bibi
5. Rafiki
6. Mwingine.....



**SEHEMU YA TATU: VIKWAZO KUHUSU UCHUNGUZI WA SARATANI YA KIZAZI**

Kwa maswali yafuatayo ningependa ujue kwamba saratani ya kizazi ni ugonjwa ambao huathiri Wanawake kuanzia umri wa miaka 15 nakuendele ana ugonjwa huu unaweza kuzuilika endapo wanawake watahudhuria vituo vya afya kwa ajili ya uchunguzi wa kansa ya shingo ya kizazi ili ikigundulika kuna dalili za ugonjwa matibabu yaweze kutolewa mapema.

16. Je, unadhani uko hatarini kupata saratani ya kizazi?

1. Ndiyo
2. Hapana

17. Je, uko tayari kufanyiwa uchunguzi huu ili kukuzuia kupata saratani?

1. Ndiyo
2. Hapana

Kama hapana, kwanini usiwe tayari?

1. Inasababisha kifo isipogundulika mapema
2. Nitasikia maumivu
3. Naogopa namna uchunguzi unavyofanyika
4. Hakuna usiri
5. Nyingine .....

18. Je, huduma ya uchunguzi wa saratani ya kizazi bure?

1. Ndiyo
2. Hapana

19. Je, ukiambiwa kwamba huduma hii ya uchunguzi ni bure na unaweza kufanyiwa uchunguzi angalau mara moja kwa mwaka, utaweza kukubali kufanyiwa uchunguzi huu?

1. Ndiyo
2. Hapana

20. Je, umewahi kupata damu yoyote ukeni nje ya hedhi yako ya kawaida?

1. Ndiyo
2. Hapana

21. Je, umewahi kusikia mwanamke yeyote aliyekuwa na damu ukeni badala ya hedhi ya kawaida?

1. Ndiyo
2. Hapana

Kama ndiyo, hatua gani ulichukua?

1. Kukaa nyumbani
2. Kwenda hospitali
3. Mwambie rafiki kwa ushauri
4. wengine.....

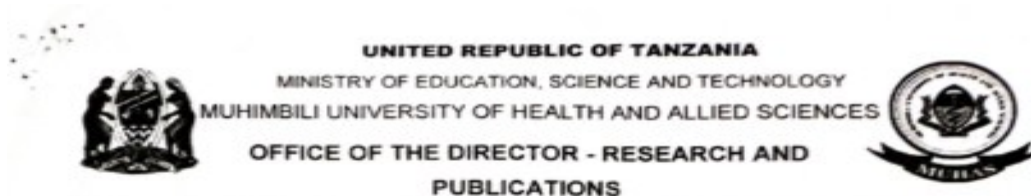
**Appendix 3A: In-depth interview guide (English version)**

1. Please tell me if this clinic provides cervical cancer screening services and if so how often and to how many women per month on the average?
2. What can you say about the staffing level of the clinic that provides cervical cancer screening services? Are there staff solely dedicated to this task?
3. What can you say about availability of equipment and related tests for providing cervical cancer screening services?
4. What limitations are there for the clinic to provide cervical cancer screening services?
5. Are there any specific times or specific groups of women that the clinic cannot provide cervical cancer screening services?
6. If so what times and which specific groups of women are these?
7. In your opinion, what factors may prevent women from screening for cervical cancer?

**Appendix 3B: Maswali ya Mahojiano (Kiswahili)**

1. Tafadhali niambie kama kliniki hii hutoa huduma za uchunguzi wa saratani ya kizazi na ikiwa ni mara ngapi na ni wanawake wangapi kwa mwezi kwa wastani?
2. Unaweza kusema nini kuhusu kiwango cha wafanyakazi wa kliniki ambayo inatoa huduma za uchunguzi wa saratani ya kizazi? Je, kuna wafanyakazi waliojitolea tu kwa kazi hii?
3. Unaweza kusema nini kuhusu upatikanaji wa vifaa na vipimo vinavyo husiana kwa kutoa huduma za uchunguzi wa saratani ya kizazi?
4. Kuna vikwazo gani kwenye kliniki hii katika kutoa huduma za uchunguzi wa saratani ya kizazi?
5. Je, kuna nyakati maalum au makundi maalum ya wanawake ambayo kliniki haiwezi kutoa huduma za uchunguzi wa saratani ya kizazi?
6. Na ikiwa ipo ninyakati gani na makundi gani maalum ya wanawake ambayo kliniki haiwezi kutoa huduma za uchunguzi wa saratani ya uzazi? Kwa maoni yako, ni mambo gani yanaweza kuzuia wanawake dhidi ya kufanya uchunguzi wa saratani ya shingo ya kizazi?

## Appendix 4: Ethical approval certificate



Ref. No. DA.282/298/01. C/

Date: 04/03/2021

**MUHAS-REC-03-2021-507**

Joyce Kivugo  
MSc. Applied Epidemiology,  
School of Public Health and Social Sciences  
**MUHAS**

**RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED:  
UPTAKE AND BARRIERS TO CERVICAL CANCER SCREENING AMONG  
WOMEN ATTENDING HEALTH CARE FACILITIES IN SIMANJIRO**

Reference is made to the above heading.

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 04/03/2021

EXPIRATION DATE OF APPROVAL: 03/03/2022

**STUDY DESCRIPTION:**

**Purpose:**

The purpose of this cross sectional study is to assess the uptake and barriers of cervical cancer screening among women attending different categories of clinics in health facilities Simanjiro Tanzania

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided:  
<https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%20293.pdf> and in the MUHAS archives.

**The PI is required to:**

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain data transfer agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain material transfer agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country.
8. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website <https://drp.muhas.ac.tz/>.



**Dr. Bruno Sunguya**  
**Chairman, MUHAS Research and Ethics Committee**




Cc: Director of Postgraduate studies

## Appendix 5: Introduction letter

**UNITED REPUBLIC OF TANZANIA**  
 MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY  
 MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES  
 OFFICE OF THE DIRECTOR – POSTGRADUATE  
 STUDIES

In reply quote;  
 Ref. No. HD/MUHT.814/2019



23<sup>rd</sup> March, 2021

The Regional Administrative Secretary,  
 P.O. Box 310,  
 MANYARA

**Re: INTRODUCTION LETTER**


The bearer of this letter is **Joyce Kivugo**, a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MSc. Applied Epidemiology.

As part of her studies she intends to do a study titled: *"Uptake and Barriers to Cervical Cancer Screening Among Women Attending Health Care Facilities in Simanjiro"*

The research has been approved by the Chairman of University Senate.

Kindly provide her the necessary assistance to facilitate the conduct of her research.

We thank you for your cooperation.

  
 Ms. Victoria Mwanambwa  
 For: **DIRECTOR, POSTGRADUATE STUDIES**

cc: Dean, School of Public Health and Social Sciences, MUHAS  
 cc: Joyce Kivugo

9 United Nations Road, Upanga West, P.O. Box 65001, Dar Es Salaam; Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line: +255-22-2151378; Telefax: +255-22-2150465; E-mail: dpgs@muhas.ac.tz; Web: <https://www.muhas.ac.tz>