UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN IN TAMALE METROPOLIS NORTHERN REGION, GHANA

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FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN IN TAMALE METROPOLIS NORTHERN REGION, GHANA

BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF GLOBAL AND INTERNATIONAL HEALTH OF THE SCHOOL OF PUBLIC HEALTH, UNIVERSITY FOR DEVELOPMENT STUDIES, IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR THE AWARD OF A MASTER DEGREE IN PUBLIC HEALTH.

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DECLARATION

I hereby declare that this thesis except for references to other people's study, which have been appropriately recognized, is the result of my research work carried out in the Department of Global and International Health, School of Public Health, University for Development Studies, supervised by Dr. Ruth Nimota Nukpezah and Ms Mary Rachael Kpordoxah.

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Last but not least, I would like to acknowledge the books and articles used as a reference materials during the write-up of this research work.

DEDICATION

I dedicate this work to the Almighty God and my family for their love and unwavering support and for inspiring me to achieve greater heights in life. I am extremely grateful.

ABSTRACT

Background: Even though cervical cancer may be avoided; it is the leading cause of death among women globally. It is the primary cause of cancer-related deaths among female patients in Africa. This study aimed to identify factors associated with cervical cancer screening uptake among women in the Tamale metropolis. Health Blief Model (HBM) framework was used.

Methodology: A facility-based descriptive cross-sectional study with a quantitative method was carried out in major healthcare facilities in Tamale. A sample size of four hundred and twenty-three (423) women were sampled across the facilities. The participants were chosen at each facility using systematic random sampling (balloting). Descriptive analysis was done on the participant's demographics, and inferential statistics using the chi-square test of association on the participant's knowledge and attitude toward cervical cancer screening. The data were examined using SPSS version 20.

Results: The study revealed that 31.8% of the respondents had screened for cervical cancer, 77.1% of them go for cervical cancer screening every year, indicating a positive attitude. Women who understand the disease were 7.18 times more likely to screen than those who did not [AOR=7.18 (CI: 4.19 - 12.29), p0.001]. Women with formal education were 15.91 times more likely to screen than women without education [AOR=15.91 (CI: 5.76 - 46.94), p0.001].

Conclusion: The study identified age, employment status, educational attainment, religion, marital status, number of births, family history of cervical cancer, and a general understanding of cervical cancer as crucial factors associated with screening uptake. Monitoring and evaluation of cervix cancer prevention and control programs on key program indicators should be done regularly. The Metropolitan Assembly must support female child education in the Metropolis.

KEYWORDS: cervical cancer, screening uptake, Tamale metropolis.

ABBREVIATION

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
CCS	Cervical Cancer Screening
COVID 19	Corona Virus Disease
DHA	District Health Administration
DHIMS	District Health Information System
DHS	District Health Service
FP	Family Planning
GDHS	Ghana Democratic Health Survey
GHS	Ghana Health Service
GMHS	Ghana Maternal Health Survey
GMICS	Ghana Multi-Indicator Cluster Survey
GSS	Ghana Statistical Survey
HIV	Human Immune Virus
MHC	Maternal Health Care
MMR	Maternal Mortality Ratio
NHIS	National Health Insurance Scheme
NR	Northern Region
PI	Principal Investigator
RA	Research Assistant
RCH	Reproductive and Child Health
STI	Sexual Transmitted Infections
UDS	University for Development Studies
UN	United Nations
UNICEF	United Nations International Children Emergency Fund
WHO	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.0 Background to The Study

Women's health is usually affected by cervical cancer around the world. The cervix or the area around the cervix's neck may develop abnormal cell tissues, which is referred to as this cancer (Arbyn et al., 2020). Each year, 266,000 women worldwide (50.4%) of cases died from cervix cancer. According to the World Health Organization, Human Papilloma Virus (HPV) vaccination, total access of screening, and programs for control and prevention that explicitly target at-risk women can avoid the bulk of these fatalities (WHO, 2014).

There were 311,000 death cases and 570,000 new cancer cases of cervix cancer in 2018. It was found to be the commonest disease among female patients. The calculated age-standardized cancer of the cervix incidence found to be 13.1/100 000 female worldwide. Most deaths from disease among female patients in western, eastern, southern, and middle Africa were caused by cancer of the cervix (Arbyn et al., 2020).

According to Laelago Ersado, (2021), cancer of the cervix is mostly caused by infections through sex with specific HPV kind and abnormal vaginal bleeding is a common symptom. HPV strains (16 and 18) are the two types of viruses that account for 70% of cancer of the cervix cases worldwide. The world's greatest incidence of cervical cancer and associated increase in death rate for female of their kind were found in the Sub-Saharan Africa (SSA) region (Ndikom & Ofi, 2012). There are numerous risk factors that can cause cervical cancer. Place of residence, multiple partners, sexually transmitted infections, use of health services, younger age at marriage, and educational status are some factors most related to cancer of the cervix, according to Laelago Ersado, (2021). Also,the risk of cervical cancer is influence by lack of access to

cervix screening, early sexual activity, smoking, and prolonged oral contraceptive use (Laelago Ersado, 2021).

According to Laelago Ersado, (2021), Several factors, including women's discomfort with the testing procedure, the fact that some religions only allow married women to participate in the testing process because extramarital affairs are not accepted, some people's reluctance to discuss their sexual lives with others, women's reluctance to take the cervical cancer screening test, women's feelings of shame about par, and so on, all contribute to the "sociocultural barrier" that stands as the primary obstacle to cancer of the cervix screening.The majority of poor nations, notably those in Africa, have an increased frequency of cancer of the disease (Mabelele et al., 2018b). According to Del Mistro et al., (2021), when high rates of the disease vaccination and screening are implemented beginning in 2020, the yearly average number of new incidence of the illness will decline dramatically to less than six per 100,000 persons by 2045–49 in very highly developed income nations, 2055–59 in highly developed income nations, 2065–69 in medium-income nations, and 2085–89 in low-income nations.

Even though, screening of cervix cancer was free among individuals who knew about screening programs, majority of them never used the opportunity to sign up for the service (192, 95.8%; P 0.001) (Mabelele et al., 2018b).

The study is therefore aimed to determine the factors associated with cervical cancer screening uptake among women in Tamale metropolis. The knowledge from this study may be essential in creating efficient cancer of the cervix control strategies and scaling up its programs to achieve this goal more swiftly.

1.1 Problem Statement

In industrialized nations, the occurrence and death rate of cervical cancer have significantly dropped due to efficient screening and treatment initiatives. Developing countries still faces this problem mostly as a result of the ineffectiveness of routine cervical cancer screening. This disparity's primary cause is the relative dearth of early diagnosis, treatment, and efficient preventative measures in low- and middle-income nations (WHO, 2022).

Understanding the factors that either encourage or discourage women from undergoing cancer of the cervix screening is crucial for improving preventative strategies and reducing the prevalence of invasive cancer of the cervix and its related mortality (Black et al., 2019a). As long as one uses the HPV vaccine, detect it early, and treated appropriately, cancer of the cervix is one of the most manageable and preventable types of cancer, according to the World Health Organization. (Calys-Tagoe et al., 2020). Number of studies have indicated that cervix cancer is completely avoidable, manageable, and even curable (Elit et al., 2020). We can make cancer of the cervix a thing of the past and eradicate it as a public health issue by expanding access to invasive cancer diagnosis and treatment (WHO, 2022).

According to research, initiatives for cancer of the cervix screening that was publicly funded and organized begun in 22 out of the 28 EU member states to eliminate the disease (Basu et al., 2018). However, inadequate population coverage and lower participation rates in cervical cancer screening (CCS) programs have been depressing since they began (Chrysostomou et al., 2018). The WHO's strategy to eradicate the cancer of the cervix by 2025 has goals of 70% screening coverage, 90% HPV vaccination coverage, and 90% access to related care (WHO, 2022). However, only 29.8% of Ghanaian women from the north-east region had access to the national cancer of the cervix screening program, according to Van Dyne et al., (2016).

Upper east recorded the lowest coverage of 10% and a maximum 45.2% in the western region. Furthermore, it was noted by Arbyn et al., (2020) that only 2.8% of women in Ghana have been screen for cancer of the cervix, with many of these taking place at the latest level of the cancer (Wemakor et al., 2020).

Despite these studies, the mechanisms linking the proportion of screened uptake through awareness and attitude towards cancer of the cervix as well as factors influencing the uptake have not been thoroughly examined. As a result, there are few data regarding women's uptake of CCS in northern Ghana. Consequently, the need for this study. The aimed of the study is to establish the percentage of female in Tamale metropolis who have screened before, as well as women's knowledge and attitudes regarding this disease. This study therefore not only establishes the number of participants who have screened before, but also identifies factors influencing screening participation for patients who seek medical treatment at the primary medical institutions in the Tamale Metropolitan Area.

1.2 Research Questions?

1. What is the proportion of cervical cancer screening uptake among women in Tamale metropolis?
2. What is the current knowledge of and attitude toward cervical cancer screening among women in Tamale metropolis?
3. What are the Factors Associated with Cervical Cancer Screening uptake among Women in Tamale metropolis?

1.3 Objectives of The Study

To assess Factors Associated with Cervical Cancer Screening Practice among Women in Tamale metropolis.

1.4.1 Specific Objectives

1. To determine the proportion of cervical cancer screening uptake among women in Tamale metropolis.
2. To determine the knowledge and attitude toward cervical cancer screening among women in Tamale metropolis.
3. To determine factors associated with cervical cancer screening uptake among women in Tamale metropolis.

1.4 Justification of The Study

There are so many researches done on cervical cancer screening, however, the mechanisms linking the proportion of cervical cancer screening uptake through knowledge and attitude towards cancer of the cervix as well as factors influencing the uptake have not been thoroughly examined. As a result, there are few data regarding women's uptake of CCS in northern Ghana. It is against this background that this study is necessary to determine the factors associated with cervical cancer screening uptake. The results of this study will help create women's awareness of risk factors, removing obstacles to testing, and promoting a favourable attitude toward screening, all of which will contribute to lowering the mortality rate. Additionally, it will assist health planners in removing service-related obstacles and in designing a successful intervention that can be used locally to entice and motivate women to have cancer of the cervix screening. Therefore, health authorities must have a better understanding about emotional and other factors influencing screening (Shamaun et al., 2022).

1.5 Conceptual framework

The Health Belief Model (HBM) is a framework for studies that explain how behaviour changes occurs, and the factors involve in the process of change and how to cause that change in behaviour as a health professional. From predetermined scales, such as susceptibility, perceived advantages, severity and barriers, it forecasts changes in behaviour. Screening can be explained to the understanding of the population using this HBM following the analysis of each component which is the best example to use. Women's Knowledge about how susceptible they are to cervical cancer, benefits of screening and the seriousness or threats of the disease will influence them to screen (Ba-break et al., 2015). There are six constructions of HBM's founding principles which includes:

1. Perceived susceptibility - people's perception, their expose to getting a sickness. The degree to which people feels personally vulnerable to sickness or disease varies.

2. Perceived severity - This is the degree to which a person considers acquiring a sickness or illness to be serious. People's thoughts about the seriousness, when determining the severity, they frequently take repercussions into account (e.g., family life, social relationships).

3. Advantages - an individual's evaluation of the effectiveness of actions offered to lessen the risk of illness or disease.

4. Barriers - This term describes obstacles to taking a suggested health intervention. Because barriers and impediments are seen differently by different people, analysing the necessary cost and benefit involved.

5. Action - driving force behind people's decisions to implement a recommended health measure.

6. Self-efficacy is a term describing confidence, their ability to carry out an action successfully. This element was most recently added to the model in the middle of 1980.

7. Provide services for cervical cancer prevention. Delivering cervical cancer prevention services involves screening, counseling, diagnosis, treatment, and follow-up for patients by medical professionals while taking into account variables like accessibility, acceptability, affordability, and quality that affect the likelihood that patients will undergo cervical cancer screenings.

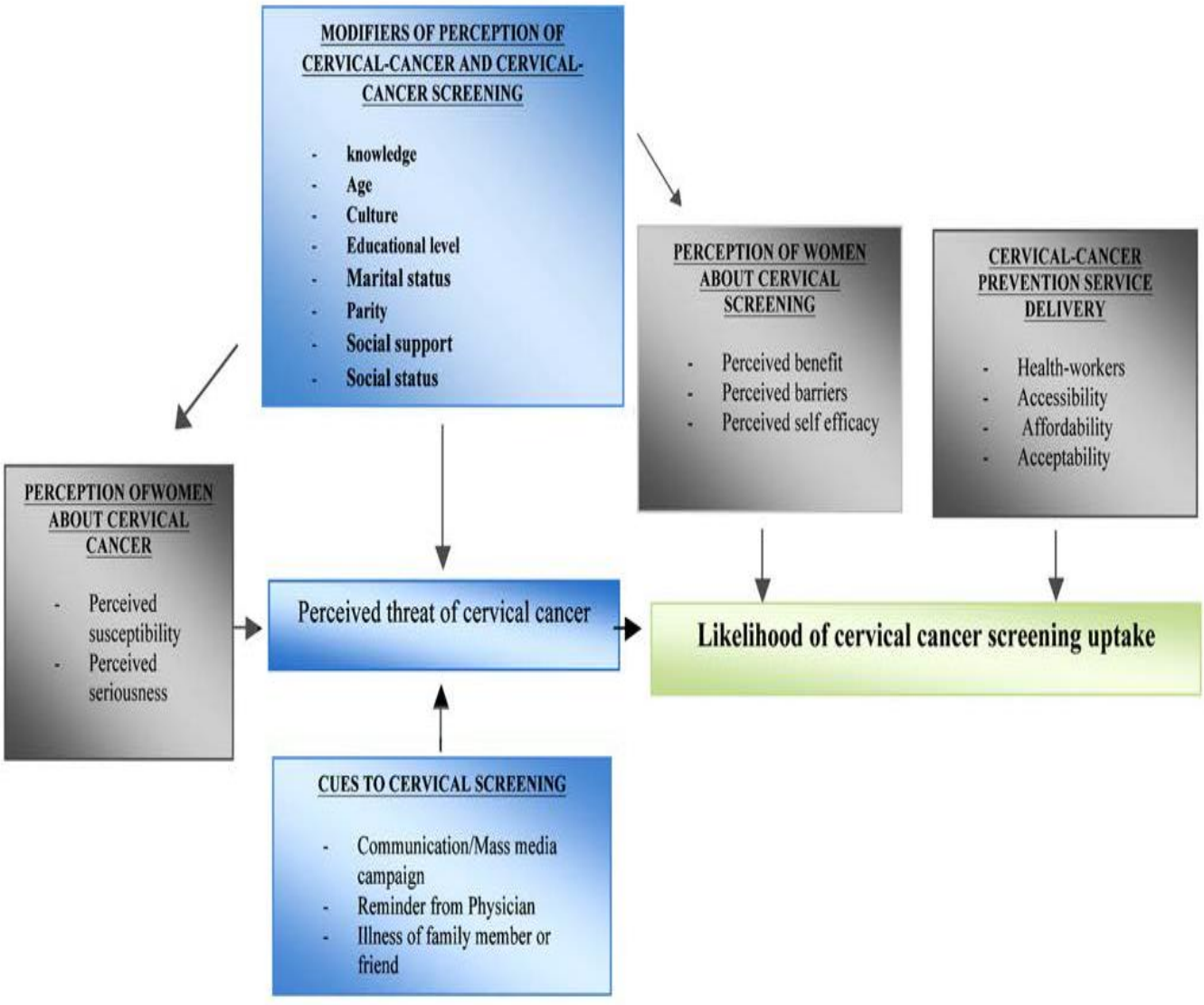

Figure 1: Conceptual Framework Source: Adapted from the work of (Ba-break et al., 2015).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Here, related research on the cancer of the cervix screening was examined in this chapter. It critically evaluates globally, quantitative research done, in Africa, and in Ghana, with much attention on cervical cancer, the demographics of participants in reproductive age, knowledge and current uptake prevalence, determinants, barriers, health system factors, family and community level factors that are associated with most women who screened before.

2.1.0 Natural History of Cervical Cancer

It is a tumor of the cervix uteri. Mostly bleeding from the vagina could be present, although symptoms might not appear until the cancer is established. Surgery is employed in the early phases of treatment, and later on, chemotherapy and radiotherapy are employed. Premalignant disease or cancer of the cervix if identified early by screening, can be checked and treated before it gets out of hand (Edmonds, 2007).

Invasive cervical malignancies have been shown to have two strains of the virus, HPV16 and HPV18, and it is thought that HPV is present in 99.7% of cancer of the cervix cases. The WHO has calculated how many tests women would need throughout their lives and how much protection they will obtain as a population from routine screening. Cervical cancer incidence can be decreased by 93.5% with annual screenings, according to Sreedevi et al., (2015).

2.1.1 Overview of Cervical Cancer Screening

Cancer is a condition which occurs when cells keep growing out of control. Cervical cancer is a kind of cancer that appears in the private part of the female, often known as neck of the uterus. Beyond the cervix, if cancer worsens, it may spread to other body organs (Education et al.,

2018). Cancer is one of the many disorders that can affect the cervix (Teame et al., 2019). Before cancer of the cervix occurs, pre-cancerous lesions constitute the initial step of transformation. Screening tests can find these lesions and efficiently treat them to stop cancer from forming (Education et al., 2018). About 70% of women in Pakistan arrived with the disease latest stage and the death rate is still extremely high despite being a preventable disease. This is because Pakistan lacks adequate screening, prevention, and immunization programs (Shamaun et al., 2022).Through immunization and timely screening, cervical cancer can be mostly avoided (Berkhof et al., 2021). As a secondary goal, screening may result in early cancer discovery, which could enable earlier treatment and lower the risk of dying (Berkhof et al., 2021). A research points out that early cancer detection and treatment can significantly lower the number of people who die from these diseases (*National Strategy For Cancer*, 2016).

Every year, around 275,000 fatalities among women in underdeveloped nations are brought on by cervix cancer (Achampong et al., 2018). The sexually transmitted Human Papilloma Virus (HPV), which has an 80% risk of infection throughout a lifetime cumulatively, is thought to be the root cause of almost all occurrences of cancer of the cervix, according to Achampong et al., (2018).

Screening Programs are set up to find abnormalities in the cervix, to identify lesions of cancer of the cervix in women as possible to reduce morbidity and save lives, however, screening uptake is low despite the availability of screening facilities and programs (Achampong et al., 2018).

In protection, Achampong et al., (2018)) found 22.5/100,000 women die and 34.8 new cases of cancer of the cervix are detected each year in Sub-Saharan Africa. Achampong et al., (2018) noted that, the proportion of screening is low among female in Africa as well as that the rates of screening among women in the UK is continuously dropping.

According to Marques et al. (2020) remedy for the disease involves figuring out and calling women who are eligible and at risk of developing the disease, performing a screening test to look for any wrong cells, giving diagnosis to those who have the disease and recommending treatment for those women. A healthcare provider must conduct a gynaecological examination and gather a cervical sample as part of the screening test protocol (Henke et al., 2021). Precancerous lesions treatment, vaccinating against the HPV, identified and treatment of invasive and palliative care are all components of comprehensive control of cancer of the cervix (Henke et al., 2021). Cancer that specifically affects the cell lining of the lower part of the womb and cervix always begins in the lining of a woman's vagina. The cervix's thin, flat cells, where squamous cell carcinoma starts, are discovered. Adenocarcinoma, which generates mucus and other fluids, is the precursor to cancer of the cervix cells (Bray et al., 2018).

It is thought that HPV is primarily responsible for the transformation areas of the abnormal cells that cause cervical cancer (Bray et al., 2018). Bray et al., (2018) mentioned that 150 different HPV viruses are connected; some of these generate papilloma, while others are known as warts. In contrast to blood or internal organs, the human papilloma virus typically affects cells close to the surface of the cervical skin and those found in the genitals, anus, and other organs. Sexual contact without a condom, through the vagina, anal, and even oral sex, is how this HPV is transmitted (Bray et al., 2018).

According to Black et al., (2019), the "see-and-treat" cervical cancer screening (CCS) method is used in Uganda, where female aged 25 and 49 are screened using a VIA and treated with cryotherapy per Uganda's screening recommendations. If all resources are available, Human papillomavirus DNA testing should be recommended as the most effective technique for primary screening, according to Dunyo et al., (2018). Sadly, cervical cancer is the biggest cause of

mortality for female in the poor nations. New technologies have recently been created to enable cervical cancer screening to be quicker, more affordable, and more accurate (Sakamoto et al., 2022).

Making primary healthcare services available in rural areas and bringing together a range of stakeholders, including proper screening technologies are two more strategies to increase cervical cancer screening (Sakamoto et al., 2022).

The task force recommended HPV testing screening every 5 years for those aged 30 to 65 (Idowu et al., 2016). The Society of Gynecologic Endoscopists (SGEM) did recommend a specific triage strategy for these women (Idowu et al., 2016). Screening should begin in immunocompetent, asymptomatic women at age 21. According to Rerucha et al., (2018), a recommended age for Screening is not for below age of 21 but above the age of 65 who have a sufficient history of negative screening findings. In 2018, there were 311,000 fatal cases and 570,000 new cancer cases of cervix cancer worldwide (Arbyn et al., 2020). If cancer of cervix is prevented with the Human Papillomavirus (HPV) vaccine, found quickly and adequately treated, it is one of the most treatable and preventable types of cancer. The greatest threat to women's lives, however, is cancer of the cervix, which claims one woman's life in every two minutes worldwide. The Human Papilloma Virus (HPV) 16 and 18 vaccines are approved by the WHO and are legal to use in many nations. Timely screening results in a 10% to 60% reduction in cancer of the cervix incidence and mortality worldwide (Marques et al., 2020). When VIA is used to screen women with HPV, both overtreatment and undertreatment may happen. While VIA can identify precancerous lesions with a high chance of progressing, there can be a lot of false positive results. Given the balance between benefits and risks, HPV testing alone is the

most effective screening tool now available for lowering the incidence and mortality linked to cervical cancer (Berkhof et al., 2021).

IARC, Research on Cancer International Agency, stated that promoting cervical cancer screening programs is a very good way to lower the occurrence of the disease (Marques et al., 2020). Premalignant lesions can also be found with Pap smears, VIA screening tests, and Papanicolaou testing. Additionally, each technique decreases morbidity and mortality through early presentation, diagnosis, and intervention of lesions (Dunyo et al., 2018). The Working Group examined and assessed the data regarding the effectiveness of screening using traditional cytology, nucleic acid testing, and cytology based on Romanovsky-Giemsa staining (Berkhof et al., 2021). Most women in underdeveloped nations delayed in getting screened for cancer of the cervix until it is already advanced, which might significantly reduce the likelihood that treatment will be successful (Abamecha et al., 2019).

Human Papilloma Virus HPV type 16 causes roughly almost all the abnormal cells. Cervical carcinomas of types 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, and 68 collectively account for 25% of cases. Additionally, various forms of Human Papilloma Virus HPV infections have been linked to malignancies of the oropharynx, anus, vulva, vagina, penis, and genital region (Sakamoto et al., 2022).The age of a woman determines when, how, and how frequently to screen for cervical cancer. Risk factors, past screening results, and accessible screening test options. The American Academy of Family Physicians, the U.S. Preventive Services Task Force, and other national organizations recommended diagnostic testing rather than screening for women with symptoms or evident cervical lesions on speculum inspection (Rerucha et al., 2018).As long as it is prevented with HPV vaccine, detected early, and properly managed, cancer of the cervix is one of the most preventable types of disease, according to the World Health Organization

(WHO,2020). Numerous studies have demonstrated that cervix cancer is completely avoidable, manageable, and even curable (Elit et al., 2020).

If detected early enough, growth of uterine cervix cells is treatable. When abnormal cells in the cervix's lining proliferate out of control, cervical cancer results. The lowest portion of the womb is called the cervix. It is the womb's entrance to the vagina. The primary sign of cervical cancer is atypical vaginal bleeding. Through screening, finding alterations in the cells can aid in preventing cancer occurrence (Access et al, 2019).

According to Nwabichie et al. (2018) the fact that the test is only administered to women in most African countries, like Ghana and Nigeria, where there is abnormal vaginal bleeding, may be responsible for the low proportion, even within their own countries .The fight against cancer of the cervix is still a problem in parts of Tanzania, because of funding limitations, different level of public health priorities with other challenges including malaria, TB, and HIV, education and awareness about the disease (Mabelele et al., 2018a). The HPV test should only be done if abnormal Pap test results are discovered in individuals of certain ages. Women between the ages of 30 and 65 should undergo an HPV and Pap test every five years (co-testing). Although Pap test screening every three years is still acceptable, this sort of screening is preferred (Tsikouras et al., 2016).

Blatt et al., (2015) in their study indicated that if HPV-only testing was used for cancer of the cervix screening, about 2400 cancer of the cervix cases (out of the 12,360 women predicted to be diagnosed with the disease each year by the American Cancer Society) may have been missed. According to Tiruneh et al. (2017), testing three times helps to detect early cancer of the cervix by the use of the Human Papilloma Virus HPV tests and is the best way for identifying early

stage of the disease alterations. Findings showed that very few African women were undergoing screening for cancer of the cervix (Nwabichie et al., 2018).

According to Nartey et al. (2018), For every 100,000 women in Sub-Saharan Africa, there are 22.5 new cases of cancer of the cervix detected each year. The gaps could be caused by a lack of access to cancer registries in the countries with the worst cases, a lack of access to healthcare leading to fewer reported diagnoses, and inadequate early identification and treatment screening.

The best method for avoiding cancer of the cervix is implementing an HPV vaccination program. Pre-existing Human Papilloma Virus HPV infections cannot be treated by vaccines. Researchers, and medical professionals suggest screening for cancer of the cervix programs to successfully observe decreased rates in the occurrence of cancer of the cervix. (Tiruneh et al., 2017). A significant majority of female in the underdeveloped nations are not helped by the Human Papilloma Virus HPV vaccine program because they are either too old to receive the vaccinations or have previously been exposed to the virus (Tiruneh et al., 2017). According to Abudukadeer et al.,(2015), the Uyghur population has a high occurrence rate of cancer of the cervix since there is a lack of knowledge about the condition. Reduction of death and occurrence rate of cancer of the cervix among Uyghur women could be enhanced if health education for all is provided to raise knowledge of the disease and HPV prophylactic vaccination. Marques et al. (2020) suggested that cancer of the cervix patients have a higher likelihood of being completely cured because early detection of the malignant lesions using preventative techniques leads to a good prognosis of the disease.

The likelihood of cancer of the cervix screening utilization can be largely increased by implementing a universal health insurance program that guarantees equity in access to healthcare for all (Tiruneh et al., 2017). Our three models' predictions were all consistent, indicating that

high HPV vaccination rates among girls can almost eliminate the cancer of the cervix in LMICs (Brisson et al., 2020). By expanding access to invasive cancer diagnosis and treatment, we can eradicate the cancer of the cervix as a public health issue and make it a thing of the past (WHO, 2020). Results of the work will help health planners in removing service-related obstacles and in designing a successful intervention that can be used locally to entice and motivate women to do screening (Brisson et al., 2020).

2.1.2 Ghana's Cervical Cancer Status

In relationship to Ghana's adoption of screening, Knowledge is a significant direct predictor of cancer of the cervix screening uptake despite moderating factors (Annan et al., 2019). According to a study by Annan et al., (2019) among female students in Ghana, barriers to screening may include poor attitude toward the disease, lack of awareness, knowledge about risk factors, negative perception of the disease, and beliefs that the pap test hurts and that getting screened for the disease means losing one's virginity. In addition to knowledge of cervix cancer, perceptions of advantages, risks, seriousness, and obstacles are also known to exist.

According to Annan et al., (2019), 303 respondents (83.9%) thought cancer of the cervix was a serious illness that could lead to death. The three most frequently mentioned signs of a life-threatening condition for cancer of the cervix are that it can be fatal cause of haemorrhage and anaemia and is difficult to treat. The participants gave several different explanations for not screening. These comprised; fear of the process, ignorance about screening locations, lack of screening instruction, lack of confidentiality, awareness of symptoms of the disease , and the costs involved (Annan et al., 2019). The majority of respondents in this study did not correctly identify the human papillomavirus (HPV), early sexual activity, lower abdominal pains, bleeding

from the vagina, pain in the private area during sexual activity as risk factors of the disease (Ampofo et al., 2020).

The main factors preventing the majority of Ghanaian women from undergoing cervical cancer screening, according to Ampofo et al., (2020), is poor healthcare system and service, socioeconomic considerations, and individual opinions and attitudes regarding screening. Even though screening for cervix cancer is proofing to reduce the prevalence and mortality rates, disease prevalence among women in impoverished nations has low screening coverage, particularly in Ghana. They indicated that efficient and effective screening programs can only be achieved if and only if the programmers can improve women's understanding and clarifications, change the negative perception of women's beliefs and myths, and reduce screening barriers (Ampofo et al., 2020). Except for the long waiting period, which in the current study did not show a statistically significant difference in zeal for screening, increasing awareness of the barriers, threat, benefit, and cues for cancer of the cervix screening were all positively influence the interest of women in participating in CC screening (Ampofo et al., 2020). Once more, Ampofo et al., (2020) noted in their study that cost involved , bad roads to the health facility, and hectic scheduled work could all have an impact on interest in screening, as well as the thinking they are not prone and lack of priority placed on screening.

Ampofo et al., (2020) indicated that the use of female health workers as screeners, incorporating the national health insurance program into screening, setting up mobile screening sites in the days of marketing to increase uptake for screening, and raising awareness of cancer cervix screening facilities are all examples of cues for action that will facilitate interest to take action to screen. Educating local women about the HPV testing is preferable to the hospital-based

approach in Ghana for boosting women's interest in cancer of the cervix screening (Awua et al., 2017).

2.1.3 Proportion of Cervical Cancer Screening Uptake

Despite the awareness that cervical cancer can be avoided by pap smear testing to identify the disease early, there is an incredibly low screening in Ghana. This low screening may be attributed to women's unsatisfaction with healthcare services, marital status, and their involvement in healthcare (Calys-Tagoe et al. 2019). There is low coverage of cancer of the cervix screening because most women are uninformed of the value of early disease detection and management of symptoms or indicators of the disease. (Black et al., 2019a). Variables like the study participants' poor socioeconomic position could be blame for low uptake of screening revealed according to Idowu et al., (2016). The low uptake may be a result of the Ilorin West LGA's limited availability of screening services and the general lack of public knowledge of the disease and its screening because they were unsure of where to find the services which resulted in 20% of participants not screened. This is because people's educational and occupational standing frequently impacts their awareness of a particular health condition and their ability to afford healthcare treatments (Idowu et al., 2016).Furthermore, tertiary health facilities are where the majority of cervical cancer screening services are offered, and they typically come at a high cost (Idowu et al., 2016).

Parity was also observed to be connected with the uptake of Pap smear (S. G. Id et al., 2019).

It has been demonstrated that cervical cancer death rates fall by 0.07 for every unit of increased screening coverage. Obtaining a coverage rate of 25% is linked to a decrease in life years loss of 21-25%, and with 100% coverage, the reduction in life years lost might be 84-99.9%, according to other studies (Di et al., 2015). A low self-reported screening practice (14.3%) of all

respondents has ever had cancer of the cervix checked, according to Tanzanian researchers Mabelele et al., (2018) where about 17.8% of women over 30 have ever undergone screening. Additional research done in Tanzania and elsewhere showing low rates of 6 to 21% have also been reported in some SSA regions. This may result from Tanzania and other SSA nations having low screening service coverage and utilization rates. To improve screening for cancer of the cervix, there is a need to identify and overcome barriers hindering screening cancer of the cervix, as early cancer diagnosis leads to a better prognosis (Mabelele et al., 2018a). Only 225 (8.3%) of the 2711 women polled in Ghana for a study on screening procedures had ever undergone a pelvic examination, and only 795 (29.34%) of them claimed to have ever had screen for cancer of the cervix (Calys-Tagoe et al., 2020).

A cross-sectional study on factors responsible for the uptake of screening in Ghana by Ampofo et al., (2020) reported that, more than half of the respondents (174; 87%) expressed interest in CC screening, but the majority said they had never undergone the procedure and a few of them indicated they had done it once or twice irregularly.

The poll discovered that just 3% of participants had ever screened for cervical cancer, despite the fact that the majority of women expressed a strong desire to take part (either a VIA or Pap test), (Ampofo et al., 2020). According to Tiruneh et al. (2017) Self-sampling and Human Papilloma Virus HPV DNA tests should be incorporated into screening programs to significantly enhance the uptake of the screening in SSA.

2.1.4 Knowledge and Attitude of Women Towards Cervical Cancer Screening

A researcher in Uganda to assess health workers' attitudes, knowledge and practices regarding cancer of the cervix prevention revealed that accurate knowledge of the age range recommended for screening for the disease as well as risk factors and signs and symptoms is crucial for

conveying to the patients and the community the right health education messages they deserve (Obol et al., 2021).

Most respondents in a survey on the complicity of screening for cancer of the cervix conducted by Malawian researchers (Kim et al., 2019), did not know what the cervix is, what cancer is, or how the cervix differs from the vagina. According to Abudukadeer et al., (2015), the general awareness of causes of the cancer of the cervix was low among the participants. Only a of few the participants of Xinjiang's reproductive-age women were aware of at least one cervical cancer risk factor. If resources are available, the WHO advises cervical screening every three years for women between the ages of 25 and 49 and every five years for those between 50 and 64 (Ajeel et al., 2019). To increase the total of Nigerians who receive screenings, it is urgently necessary to improve their knowledge and attitudes (Idowu et al., 2016).

According to study a by Gatachew et al., (2019), women in the adolescent age less likely than those in the older age groups to have ever had a Pap smear. Given that younger women are less likely than older ones to get cervical cancer, the underuse of screening among this age group may not be a serious public health concern (aged 30-50 years). In contrast to women who did not cite healthcare experts as a source of knowledge, the findings indicated that women who obtained information about the disease from healthcare professionals were more likely to undertake screening (Gatachew et al., 2019). This study also discovered a significant correlation between parity and screening for cervical cancer compared to women without children, those who had children were more likely to have ever had screening. This finding is encouraging because multiparity has been linked to an increased risk of cervical dysplasia and cancer (Gatachew et al., 2019).

According Chisale et al., (2021) women who participate in screening are older, more informed about cervical cancer and screening, less likely to see screening obstacles, and more likely to view cervical cancer as a serious illness. This demonstrates that change in personal behaviour communication tactics that changes women's views about the obstacles for screening and give more attention to the seriousness of cervical cancer should be the focus of public health interventions to enhance screening uptake. Healthcare professionals play a significant role in preventing cervical cancer by promoting Pap screening examinations and recommending HPV vaccination to the general public (Shamaun et al., 2022).

Other factors that affect women's cancer screening habits include the quality, accessibility, and availability of healthcare services, health insurance, preference for female healthcare providers, physician recommendations, and healthcare provider encouragement (Al-Amro et al., 2020). Factors including low perceived susceptibility, cognitive obstacles, false perceptions about the cost-effectiveness and discomfort, and dread of the outcomes significantly influenced older women's acceptance of routine cervical screening. However, environmental factors like ethnicity, social status, and educational attainment were also thought to have a major impact on this group's low cervical screening participation and lack of intention to get ongoing Pap smear examinations in the future (Garcés, 2006).

According to Mabelele et al., (2018a), treatment of cancer of the cervix has major economic and social repercussions for families, cancer patients, and nations as a whole, which eventually results in reduced quality of life, higher treatment costs, and decreased productivity. Women may not be able to affect other people's behaviour, regardless of their background, if they do not obtain adequate knowledge and comprehension to accept screening for cancer of the cervix. This study showed no discernible difference in knowledge and screening among women in urban and

rural settings (Obol et al., 2021). Knowledge of cancer of the cervix and screening was discovered in a study to have some relationship with screening, according to Abamecha et al., (2019). Even though it is insufficient, knowledge is significant and vital, particularly for making logical decisions about any health-related action. Compared to less aware women, women with knowledge were five times more likely to use the services than those with less knowledge (AOR 14 4.8; 95% CI:1.5- 15.5) (Belay et al. 2020).

The findings of Nartey et al., (2018) revealed a high percentage of respondents (77.1%) who screened for cancer of the cervix once a year, demonstrating a positive attitude toward the practice. The findings of this study show that those who took part in the screening understand the significance of cancer of the cervix, suggesting that more women will adopt a good attitude toward screening for cancer of the cervix if the other non-participants are also aware of its importance. Mukama et al. (2017) asserted the degree of knowledge and information a person has about a health service affects their attitudes about it, affecting how frequently they use the service. Numerous studies have characterized the attitude toward CCS as favourable since survey participants recognized that the condition was serious and that early detection and diagnosis could result in favourable results.

Report on research conducted by Fentie et al., (2020) revealed that most participants said that the inadequate knowledge regarding the availability of screening, eligibility requirements, screening locations, and reporting deadlines is the reason for most women not taking part in screening. Also Henke et al., (2021) noted that the degree of education and qualifications play a big role in the awareness and knowledge of CC and the screening. Men and women with greater levels of education and certifications are likely to have more knowledge than their counterparts with fewer qualifications, according to research from Italy, China, and Nigeria (Liu et al., 2017). Many of

the participants said they were unaware that immunization can prevent cervical cancer. Almost half (51%) of the participants were unaware that females can receive a cervical cancer vaccine Henke et al., (2021).The claim is in agreement with a study conducted by Abudukadeer et al., (2015), which revealed more illiterate women frequently had CC diagnoses, whereas women with better educational status had a greater awareness of CC and screening. These illiterate women may have poorer health outcomes due to their lower educational background and meagre financial sources. This makes it more likely that the men or partners of these women also have little awareness of CC and screening (Abudukadeer et al., 2015).It is consequently persuasive to conclude that people's knowledge levels are related to their academic position, even though this association isn't always true. According to Koç et al. (2019), the most efficient way to stop the majority of human papillomavirus (HPV) infections is to use more widely disseminated educational programs about the virus, HPV infections, and vaccines.

The findings of this study were contradicted by Heena et al., (2019) who concluded that most respondents had a negative attitude about screening for cervix cancer. In a cross-sectional study involving infection in Nigeria, those who are more educated were more likely to accept CCS than women with less education (Ezechi et al., 2013). As a result, men who are highly educated are more likely to have a good attitude toward CCS and other preventive health services. Therefore, women's adoption of CCS would be influenced by how men and women view it. It is especially true in societies where men are treated with the utmost respect, and sociocultural, traditional, and religious activities are highly cherished (Ezechi et al., 2013). Only 15% of respondents expressed a good attitude towards the screening for cancer of the cervix, and respondents generally responded negatively to the questionnaire. According to a different research which concurred with these, 187 (66%) health professionals had favourable opinions on

screening for cancer of the cervix, and some firmly agreed that they would be pleased to see their daughters or sisters receive HPV vaccination (Tekle et al., 2020). Contrary to the findings of a most recent study, Tilahun et al., (2019) found that only 44.1% of participants had a favourable opinion of screening.

Tilahun et al., (2019) added that older women have favorable attitudes and are 11.7 times more likely than younger women to screened for cervix cancer. Ghosh et al., (2021) noted that majority (> 90%) of the participating women displayed a favourable attitude toward the prevention of cancer of the cervix. It was also shown that older women have a favourable attitude 11.7 times more often than younger women, with some participants having a good relationship with screening compared to 286 (46.7%) respondents. Compared to younger generations, more inclined to favour screening (Ghosh et al., 2021).

2.1.5 Factors associated with Cervical Cancer Screening Uptake

Fentie et al., (2020) discovered that having positive VIA test results was substantially correlated with having several sexual partners and starting sexual activity early. It is known that both of these factors raise the possibility of becoming infected with the Human Papillomavirus (HPV).

Age, degree of education, marital status, employment status, and income level are the sociodemographic characteristics linked to the cervical cancer screening uptake. Many academics interested in promoting cancer screening have looked into how these factors affect women's screening practices (Al-Amro et al., 2020)

In a study by Dulla et al., (2017), their findings revealed that age, marital status, career, experience, degree of education, understanding of the results of cancer of the cervix, level of health institution, and employment in screening for cancer of the cervix facilities are the factors significantly impacting the cervical cancer screening uptake in Ethiopia.

Age, marital status, monthly income, knowledge, obstacles, acculturation, insurance status, regular HCP, and clinic accessibility are significant variables, according to Nwabichie et al., (2018) that may be associated with cervical cancer screening uptake. In the previous three years, Pap smear uptake was significantly predicted by marital status, with married women screening more than single women (Nwabichie et al., 2018). Early sexual contact with several partners, using contraceptives for long and lack of private hygiene are some risk factors for cancer of the cervix. These ailments, which are common in many low- and middle-income nations, serve as a medium for HPV and are the primary risk factor for cancer of the cervix (Sreedevi et al., 2015). Calys-Tagoe et al., (2020) found that the father's educational level, ethnicity, marital status, inability to care for himself, contentment with healthcare, and involvement in healthcare were all independently linked with having both a pelvic exam and a Pap screening test.

The cervical cancer screening uptake is correlated with nationality, marital status, wealth, education, , and location of the participant, with lower education, poverty, and single status being associated with lower screening uptake rates (Mugassa & Frumence, 2020).

At a Catholic hospital in Ghana, screening services for cervix cancer were made available to patients at a reasonable cost. Despite this, most of these women present to the hospital at the disease's most advanced stage, when treatment is challenging and the causes of that stage presentation remain unknown (Dunyo et al., 2018).

According to Dunyo et al., (2018), sociodemographic characteristics such as age, marital status, educational attainment, NHIS, place of residence, and employment status but distance were not linked to cancer of the cervix cases that were advanced when they were first diagnosed. The public's knowledge and uptake of HPV vaccination will rise as a result of the government and mass media's efforts to raise awareness about the screening and vaccination of young girls

(Henke et al., 2021).

Screening for cancer of the cervix is associated with a woman's age, religion, geography, level of education, employment, household wealth index, quantity of media exposure, attending a health facility, and health insurance, according to Tiruneh et al. (2017).

Henke et al., (2021) found that location, the use of old sanitary napkins, having many partners, sexually transmitted illnesses, accessing health services, being younger when getting married, and educational status are the factors most strongly linked to cancer of the cervix. Early sexual activity, smoking, using oral contraceptives long-term, and not having access to screening cancer of the cervix are all linked with a big chance of contracting the disease. Belay et al. (2020) mentioned that the cancer of the cervix is worsening because of low socioeconomic conditions, negative attitudes toward screening programs, late discovery of the majority of cases, and insufficient screening services for cancer of the cervix. Belay et al. (2020) found that Age, use of family planning, employment, attendance at private health facilities, visits to the gynaecology unit, and knowledge are all individually linked with screening services for cancer of the cervix.

Cancer of the cervix incidence rates have reportedly increased, which may be attributable to inadequate focus on women's health, lack of knowledge, and a dearth of effective screening programs that are overshadowed by other health concerns (such as AIDS, TB, and malaria) (Nartey et al., 2018).

According to Tiruneh et al. (2017), older women were 1.29 times more likely than younger women to attend any screening for cancer of the cervix. Additionally, research has demonstrated that various factors, such as age, education level, information source, health initiatives, and education, affect knowledge. (Liu et al., 2017).

The latest stage presentation was widespread, according to a recent study in two Ghanaian regions. This research has demonstrated that late screening for cancer of the cervix presentation is related to low socioeconomic level (Dunyo et al., 2018). Employed women receive any sort of screening for cancer of the cervix 1.21 times more frequently than jobless women, according to Tiruneh et al. (2017). According to Henke et al., (2021) in a study, predictors which significantly influence people's decision to screen include high levels of education, jobs that pay well at the end of the month, health insurance, and cervical cancer screenings service. The following factors were also significantly associated with screening for cervical cancer: employees' occupation from both governmental and private, number of birth, multiple sexual partners, knowledge about cancer of the cervix and attitude towards screening (Teame et al., 2019).

According to Bedell et al., (2020), accessibility for screening among women calls for an HPV testing technology that is quick and affordable. Women do not support pap and HPV co-testing because it is connected with increased expenditures. Some of the characteristics that affect the stage at which cancer patients present to the healthcare institution include educational background, financial standing, geography, and access to medical services. However, the degree of disease awareness and patient attitudes are the most important among these parameters (Nartey et al., 2018).

According to Dulla et al., (2017) some of the difficulties with cervical cancer screening include poor referral and follow-up, restricted access to laboratories and health services, the absence of programs for screening, and low knowledge among the general public and health professionals.

The capacity of the medical professional to accurately view the cervix and distinguish between cervical lesions is crucial for making an accurate cervical cancer diagnosis. Additionally,

healthcare professionals should be educated on some suggested practice to advance preventative measures for cervical cancer (Dulla et al., 2017).

According to Rosita et al., (2023) most people said that the pap smear procedure was uncomfortable, anxiety-inducing, and painful (35.2%, 33.6%, and 33.6%), respectively. The screening effort may be seriously hampered by the female nurses' general bad attitudes and negligence. The following were identified to be the main obstacles to nurses getting screened for cervical concerns; that is having to take off your clothes for the screening process. Additionally, 20% of respondents said they would rather not have male staff members present during the screening process (Rosita et al., 2023).

Assefa et al. (2019) indicated that, public health intervention known as cervical cancer screening (CCS) entails identifying and inviting women who are eligible and at risk of developing the disease, performing a screening test to look for any abnormal cervical cells, giving diagnostic tests to those who test positive, and recommending treatment for these women. A healthcare provider must conduct a gynaecological examination and gather a cervical sample as part of the screening test protocol, frequent contact with the healthcare system, family planning use, and a high rate of pregnancies all contributed to greater access to cervical cancer screening services (Henke et al. (2021).

Other studies, such as (Vahabi & Lofters, 2016), on screening for cancer of the cervix among Muslim women in the US and Canada have shown that it is time-consuming, uncomfortable, and interferes with women's privacy and modesty because there are no female health personnel. Community-based research of 30 immigrant Muslim women's opinions about cervical cancer screening, according to Vahabi & Lofters, (2016) indicated that the respondents said that even with an earlier appointment, the process was time-consuming. Assefa et al., (2019) came to a

conclusion in their report that there are ways to improve cervical cancer screening, including increasing access to screening facilities, especially in light of the implementation of VIA in many healthcare facilities, strengthening national advocacy efforts, media attention, community sensitization, and the expansion of urban health extension programs.

Positive influence on cervical cancer screening (CCS) participation is linked to social support from either spouse or husband or even from family or friends, according to Marques et al. (2020). Cervical cancer screening may be avoided or delayed if there is a of social support. Male partners' active support of their female partners during cervical cancer screening increases their understanding of the value of maternal healthcare services. It motivates women to get screened for the disease (Assefa et al., 2019).

According to Sayed et al., (2023) majority of the participants as a whole did not believe that pap smear was an effective method of diagnosis for cervical cancer, and another 69.4% did not believe that pap smear was an effective method of treatment for cervical cancer. Just under half (49.1%) of respondents claimed that a pap smear was utilized to find cervical cancer cell alterations.

2.1.6 Barriers to Cervical Cancer Screening

Many theoretical frameworks have been put out to explain how people behave when they are well and ill. The most well-known health belief model was created by Rosenstock and later improved by Becker and Maiman (Article, 1991).

According to recent research, the Health Blief Model (HBM) is useful for identifying the critical variables that may have an impact on women's uptake of cervical screening and for predicting the adoption and maintenance of this behavior.(Shamaun et al., 2022). To assess the efficacy and applicability of this behavioural framework in identifying the key elements that might encourage

or inhibit women from adopting the most effective preventive health behaviours regarding cervical cancer, it is decided to evaluate this specific health issue in light of the Health Belief Model's (HBM) constructs (Shamaun et al., 2022). About 38% of individuals recognized the disease's seriousness, while 82% acknowledged the value of screening. Additionally, 27% of the participants felt there were obstacles to getting a Pap smear (Aldohaian et al., 2019).

To forecast future behavior, the Health Belief Model (HBM) focuses on a person's health-related behavior (Aldohaian et al., 2019). Several factors affects people's decisions to participate in programs designed to prevent or detect disease are influenced by a variety of factors, according to this model, including perceived susceptibility to the health condition, awareness of the impact of the disease on their health (perceived severity), perceived benefits of undergoing screening, and perceived barriers and costs of the screening techniques (Aldohaian et al., 2019).

The perceived benefits of screening, the perceived obstacles to screening, a person's vulnerability to acquiring cervical cancer, and their opinion of the gravity of cervical cancer all affect their motivation to engage in cancer screening procedures. According to "perceived benefits of screening," women's expectations that cervical cancer screening will lead to early detection and treatment are known as these expectations (Gao et al., 2013).

2.2.1 Perceived Threat of Cervical Cancer

A study by Al-Amro et al., (2020) indicated that, more than one-third of women thought the sickness was serious. Similarly, one-third of participants in a Vietnamese-American study thought cervical cancer would disrupt their entire lives and endanger their connection with their partner/husband. Perceived seriousness regarding the severity of cervical cancer also influences a woman’s decision to be screened (Al-Amro et al., 2020). Compared to women who did not have

these attitudes, those who believed they were at risk or more likely than the average woman to get cervical cancer were more likely to have ever undergone a Pap test (Gao et al., 2013).

2.2.3 Perceived Benefits of Cervical Cancer Screening

Aldohaian et al., (2019) found that older women thought getting a Pap smear test was favorable, whereas women with less education thought they were more likely to get cervical cancer. Approximately 82% of the participants believed that having regular Pap smear tests would help to find changes to the cervix before cancer develops, that having regular Pap smear tests is the best way to diagnose cervical cancer at an early stage, and that cervical cancer treatment would be tolerable when it comes to perceived benefits of the Pap smear test (Aldohaian et al., 2019)

About 50% of the participants stated that Pap tests are the best way to identify cervical cancer, that cervical cancer may be effectively treated if discovered early, and that getting a Pap test is crucial for maintaining good health. Women who believed in these advantages were two to four times more likely than those who did not to have ever undergone a Pap test (Gao et al., 2013).

Study results indicated that among women, perceptions of the advantages and motivation for cervical cancer screening were high, whereas perceptions of barriers were low. Data revealed, however, that these hoped-for advantages and motivations did not materialize in practice, and only a small proportion of women performed the screening test (Aldohaian et al., 2019)

2.2.4 Perceived Barriers to Cervical Cancer Screening

The standard and availability of cervical cancer screening services in our facility have been impacted by the lack of qualified health personnel. Due to a lack of health professionals, the quality of the current service delivery is low, which discourages service receivers from taking advantage of our cervical cancer screening programs. Regular screenings are not provided for

individuals who need these services (Rerucha et al., 2018). Other explanations for the poor screening uptake among our respondents include husband rejection and concern about being labeled promiscuous. In most houses, the husbands are the main decision makers, especially in nations like Nigeria with strong cultural values and family bonds. In order to avoid being labeled as having poor morals by their spouses and other significant others, women are frequently cautious about the services they request from healthcare practitioners. Additionally, about 20.0% of the women who were interviewed were unable to undergo screening because they were afraid of receiving a positive result (Idowu et al., 2016).

The study also reveals barriers to cervical cancer screening, including a lack of knowledge about the services available for screening, the difficulty of accessing health facilities, the cost of the screening, and personal perceptions such as the belief that there are no symptoms or signs of the disease, fear of the uncomfortable procedure, reluctance to reveal one's privates, and worry about being found to have cervical cancer after the test (Idowu et al., 2016).

Being uncomfortable having a test performed by a stranger (41.0%), partner discomfort with a test performed by a male doctor (38.8%), not needing a test when feeling well (35.5%), believing a test will be painful or unpleasant (27.7%), and thinking a Pap test is embarrassing (15.1%) were the most frequently cited psychosocial/cultural barriers to getting Pap tests in our study (Gao et al., 2013). Especially if the doctor is a man, patients may feel uncomfortable displaying their private parts to a doctor during a physical examination. This result is consistent with a study of Egyptian women, whose Arabic and Islamic cultures were similar to those of Saudi women, which found that 76.9% of women preferred a female doctor to administer the Pap smear treatment (Aldohaian et al., 2019).

2.2.5 Cervical Cancer Prevention Service Delivery

In order to provide cervical cancer preventive services, health professionals must screen, counsel, diagnose, treat, and follow up with clients while considering factors such as accessibility, availability, price, acceptability, and quality that affect the likelihood of cervical cancer adoption of cancer screening (Ba-break et al., 2015).

2.2.6 Perceived self-efficacy

Perceived self-efficacy is the conviction or assurance that prompts women to get a cervical screening in order to stave off disease (Ba-break et al., 2015).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The procedures and methods deployed to conduct this study are discussed he. The scope of the study, the study type and design, the study population, the inclusion and exclusion criteria, the sample size calculation, the sampling techniques, the study's variables, the techniques and tools used to collect data, the plan for the analysis and presentation of the results, the quality management and control, the ethical consideration, the study's restrictions, and the dissemination strategy were some of these.

3.1 Study Area

The child welfare unit, reproductive health unit, ANC unit, and female wards in the three main hospitals of the metropolis; Tamale west hospital (TWH), Tamale central hospital (TCH), and Tamale teaching hospital were the study site where it was carried out. The Tamale Teaching Hospital, the only teaching hospital in northern Ghana, located in the Metropolis. One of Ghana's sixteen regions. The Northern Region is in the north of the country and has Tamale as its capital.

There are 14 districts in the Northern Region. The region was Ghana's largest before the North East and Savannah Regions were carved out of it in December 2018. In terms of land area, it is the second-largest region in Ghana (Ghana Districts.com) covering 70,384 square kilometers, or 31% of Ghana's total land area.

The city is the sole Metropolis in the Northern Region and one of the six Metropolitan Assemblies in the nation. It is located between longitudes 00.36 and 00.57 south and latitudes 9.16 and 9.34 north. The Tamale Metropolis is 180 meters above sea level. Along with Tolon-

Kumbugu to the west Savelugu Municipality to the north, Central Gonja to the southwest, East-Gonja to the south and Mion to the east, it borders five other districts. It is situated in the center of the northern area. The 2010 population and housing census indicated that Tamale has 1,544,946 residents, consisting 50.3% women and 49.7% men of the population. By 26 September 2020, Tamale is expected to have 1,948,900 residents (GSS, 2014).

In the metropolis, a bigger percentage of people live in urban regions (80.8%) than in rural ones (19.12%). (GSS, 2014). Dagombas are the majority in the Metropolis. Minority ethnic groups such the Akan, Dagaabas, Bulisa's Gonjas, Frafra, and Mampurisi are also represented. Most people living in the nearby villages, which are ethnically diverse but outside of Tamale Metropolis, are Dagombas. The Dagombas make up roughly 80% of the population, even in the Metropolis. Most of the metropolis residents are Muslims. Contrarily, non-Dagomba ethnic groups primarily practice Christianity (GSS, 2014).

The Tamale Metropolis takes up over 922 square kilometers of territory, or close to 13% of the entire geographical area, according to the 2010 population census.

Even though the city's status as a metropolitan region has been obtained, the geographical environment still includes a mix of typical rural towns integrated into the urban sections(Oberlin et al., 2018). Trading is the main source of income for women in the Tamale Metropolis. Numerous causes contribute to the high levels of poverty. These include unequal property and land inheritance, extensive subsistence farming, high family responsibilities, low capital levels, high rates of pregnancy, and high illiteracy rates in urban and peri-urban areas. Often, supper is when TuoZaafi (TZ) is consumed, while breakfast typically consists of a porridge made of maize or tea. Since lunch is not typically prepared at home in these places, a broad selection of foods

are available for people to pick. In rural places, Tuo Zaafi is typically for afternoon and dinner meals, with a breakfast porridge made of maize or guinea corn (Oberlin et al., 2018).

In comparison to the region's average density of 318.6 people per square kilometre, the metropolis's population density of people 25.9 per square kilometre, which is nearly 12 times greater. There is a significant disparity in population density in Tamale between urban and rural areas. This signifies a shift toward urban Tamale, supporting the idea that current employment is concentrated in a small number of facilities and opportunities (Fuseini et al, 2013).

3.2 Study Type and Design

This study adopted a quantitative method with a facility-based descriptive cross-sectional study design employed. This strategy is suitable for evaluating the prevalence of a condition and the strength of the evidence for relationships with exposures. The link between diseases (or other health-related disorders) and other factors of interest is examined in a cross-sectional study as they are present in a specified number (Babbie, 2015; Creswell, 2013; Moule, Aveyard, & Goodman, 2017; Parahoo, 2014).This involved conducting one-on-one interviews with the administration of structured open-ended and closed-ended questionnaires that were adapted from a study of Al-Amro et al., (2020). This study examines the rate at which women in the Tamale metropolitan have had their cervical cancer screenings performed and the contributing factors to that rate.

3.3 Study Population

Women in Tamale metropolitan living at the time of the study and at least 18 years old were the intended study population. This group of women visits Tamale Teaching Hospital, Tamale West Hospital, or Tamale Central Hospital for immunization, growth monitoring, vitamin 'A' supplementation, FP services, and other medical care, because these facilities are the main public

amenities in the area and are often used by customers, it was vital to choose participants who frequently visit these hospitals. According to the 2021 annual report estimate of the population of women who attended the selected Hospitals was: TTH= 99309, TWH= 90126 and TCH= 62262. Total = 251697. Therefore, 251697 women (2021 GHS annual report).

3.3.1 Study Units

The study considered women aged 18 years and above seeking healthcare services who consented to be part of the study.

3.3.2 Inclusion Criteria

All women who were 18 years and above who showed interest to partake in the study were qualified to take part in the study, and were therefore recruited.

3.3.3 Exclusion Criteria

Women seeking emergency and critical care services as well as non-residents of the Tamale metropolis, equally, women who failed to show interest and those below 18 years, were excluded from the study

3.3.4 Determination of The Sample Size

The target population is all women in the Tamale metropolis who seek medical attention in the three major hospitals. 5% margin of error was allowed, and the Yamane (1967) formula was used to calculate the appropriate sample size. This formula was adopted since the study used a known, finite population size.

Therefore' $n = N / (1+Ne2)$

Where n = desired sample size

N = (251697) finite population size (DHIMS 2021 REPORT)

e = margin of error

Thus, using the technique mentioned above, the study sample size was determined to be;

n = 251697 / (1 + 251697 (0.05 x 0.05) = 384.2

A human fraction of participants is impossible. Hence the sample size was rounded up to the nearest whole number, which resulted in 384. A contingency buffer of 10% was included to account for likely non-response, resulting in a final sample size of 423. A calculation of proportion to size was used to calculate the exact number of participants from each of the three (3) study sites. Convenience sampling where any eligible person seeking healthcare services consented and were recruited to participate in this study.

Using Sample fraction (f) = $\frac{sample\ size(n)}{targeted\ population(N)}$

As a result, the sample sizes for Tamale Teaching Hospital and Tamale West Hospital and Tamale central hospital are extrapolated to be 167, 151, and 105, respectively. This results in a total sample size of 423(Sreedevi et al., 2015)

Table 1: Sample Size of Each Facility

FACILITY	TOTAL NUMBER OF ATTENDANCE	PROPORTION (%)	SAMPLE SIZE
TTH	99309	39	167
TWH	90126	36	151
TCH	62262	25	105
TOTAL	251697	100	423

Three different types of sample procedures were used at various stages of the inquiry. A purposive selection method was used to pick the major hospitals in Tamale Metropolis for the study. The hospitals were Tamale Teaching Hospital (TTH), Tamale West Hospital (TWH), and Tamale Central Hospital (TCH). These hospitals were chosen since they serve the majority of the city's female residents and are the primary health facilities in the area.

Also, each Facility's sample size was calculated using quota sampling (Nukpezah et al., 2018). A non-probability sampling technique called quota sampling involves choosing facilities according to their known proportion in the population. The sample size for each facility was then estimated based on how proportional their population size it was. According to the GHS annual report for 2021, TTH = 99309, TWH = 90126, and TCH = 62262, which add up to the 251697-population size.

The facility-level participants chose a simple random probability sampling technique because it enables researchers to generalize findings to the population specified by the sampling frame (Nukpezah et al., 2018).

All of the competitors were chosen over five days. Simple random sampling (balloting) was employed in the investigation. Each day, a list of women who had signed up for weighting, immunization, vitamin 'A' supplementation, growth monitoring, family planning, and other health-related services was used as a sampling frame. These women were given identification (ID) numbers written on different pieces of paper and put into a bag. Votes were then drawn from the bag without being replaced after the papers had been jumbled. Every day, this activity was repeated.

3.4 Variables of Study

Questions about the percentage of participants who had been screened before and the percentage of respondents who never been screened before were used to analyze the dependent variable.

Questions about screening practices, screening knowledge, screening for cervical cancer, risk factors for cervical cancer, therapies for cervical cancer, and testing frequency were used to assess the relationships between the dependent and independent variables. The study took into account a number of independent variables. The variables that represent the respondents' backgrounds are known as independent variables. Questions about sociodemographic parameters such age, career, education level, religion, parity and marital status were used to evaluate this.

3.5 Data Collection Tools and Techniques

It made use of a structured questionnaire. The academic supervisors reviewed the prepared research proposal before approving it. After receiving their approval, the researcher applied to University for Development Studies for authorization to carry out the study and was successful. This was then presented to the medical directors of the three institutions (TTH, TCH, and TWH) to ask for their approval to carry out the study described in the appendices. Structured questionnaires were chosen because, in addition to being a reasonably quick technique of gathering data, they allow for the collecting of replies in a consistent manner and the gathering of the same data in all respondents in a pre-specified and comparable manner (Polit and Becker, 2010).

The questionnaires were programmed with the help of Kobo Collect data collection software into a tablet to interview the respondents who had visited one of these three hospitals to seek medical attention. They each answered the questions independently, maintaining their privacy by doing it in various places across the environment. To help with data collection by interviewing the

respondents with the help of questionnaire, four people with knowledge in the research were chosen to have two days of training to assist in the data collection. The questionnaire was translated for responders who didn't speak or understand English. Women were interviewed one-on-one, allowing the data collectors to better understand respondents' concerns and get the needed answers.

3.6 Plan for Analysis and Presentation of Results

A descriptive analysis using means, standard deviation, frequencies, and proportions were utilized to emphasize the traits of the research participants concerning cervical cancer screening. The Chi-Square Test of Difference was deployed to look into the statistical differences discovered in the observed data. Binary logistic regression was used to examine the factors related to respondents' use of cervical cancer screening. About 95% C.I and Odds ratios were derived in the logistic regression analysis to show the strength of the relationship between the dependent, intermediate, and independent variables. A p-value of 0.05 or less was assumed to be statistically significant in the study.

3.7 Quality Control and Data Management

The questionnaire was pretested in the same conditions as the study area, the Sagnarigu District Hospital, to ensure that we had high-quality data. This pretest was designed to ensure that the questionnaire was accurate, thorough, and appropriate, the replies were accurate, and the wording was clear and dependable so that it could be corrected as needed. We conducted verifications of the data's accuracy and consistency. Additionally, a week before the data collection commencement, the lead investigator educated four (4) research assistants to ensure that they had the necessary skills for collecting data.

The four (4) research assistants were closely watched by the principal investigator (PI) throughout the data collection procedure to ensure they followed the rules. For the lead investigator to check and make modifications as needed concerning the filling out of the questionnaire and verify that all information was accurately obtained, all four (4) trained research assistants reported daily the number of individuals they interviewed.

The questionnaire's strong levels of validity and reliability were indicated by the Cronbach alpha of 0.85 internal consistency, which was discovered after the investigator piloted it using a one-on-one interview with women.

3.8.0 Ethical Considerations

Permission to conduct the study was sought through application for ethical approval from Kwame Nkrumah University of Science and Technology, whose ethical review committee approved the application with the reference number CHRPE/AP/183/23. The Tamale Teaching Hospital and the Director of the Ghana Health Service in Tamale both gave their permission to carry out the research. All study participants provided their informed consent before the start of any interviews and acknowledged their right to leave and without incurring any costs.

3.8.1 Limitations of the Study

It is difficult to extrapolate the results to women in the community who do not frequent clinics and women using other levels of care in the district, such as community health centers and district hospitals because the participants were women using hospital services. The questionnaire used in this study was administered by an interviewer, which may have led to socially acceptable responses given the interviewer's presence (information bias). In contrast, a self-administered questionnaire may have led to inaccurate answers and may have been challenging for respondents who cannot read or write in English to complete.

Even in the largest health institutions, not all units were involved, and the researcher did not select individuals from all of the healthcare facilities in the city. Additionally, studying self-reported knowledge has its limitations because recollection bias and social desirability bias make it impossible to completely trust the information provided by the participants. By maintaining a regular sample size, there is a danger of drawing incorrect conclusions about the genuine population, which may have changed due to the entry or outflow of inhabitants with behavioural traits distinct from those of the local community.

Attrition is a potentially major source of bias because it embodies the combined sample issues caused by out-migration and non-migratory withdrawals of survey respondents. Numerous studies have been conducted on analyzing incomplete data, and new techniques are constantly being developed to deal with data when some observations are missing at random. However, it is well-recognized that some groups of people experience attrition more frequently than others. Particularly, individuals with lesser wealth, younger ages, and fewer trips tend to drop out more frequently, which is likely to cause an offset in statistical findings.

The estimates of the number of women who have had screening may have been based on self-reported screening, which may be biased. For instance, the percentage of women who have had screening is likely greater in the city than what was noted in the survey since some women may not have been properly informed about the screening or may not have felt comfortable reporting.

3.8.2 Plan for Dissemination of Results

The Tamale Teaching Hospital and the Metropolitan Health Directorate, where the research would be done, will each receive copies of the study's final report. The Directorate and TTH authorities would use this as a reference guide while creating strategies for a program to screen for cervical cancer. Once more, a copy would be added to the UDS library repository as staff and

student reference material. Additionally, my supervisor and I will talk about the possibilities of writing a manuscript that may be published in reputable publications. When necessary, the researcher will not be reluctant to present the research's consequences at seminars and other venues.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the research's findings. The study participants' background details and demographics were compiled using descriptive statistics. Then, associations and the strength of associations between the dependent and the independent factors were determined using inferential statistics.

4.1 Socio-Demographic Characteristics of Respondents

Table 2 below presents results on the socio-demographic features of the participants. The total number of questionnaires administered to the respondents was 423, with all of them providing responses giving a response of 100%. From the total of 423 face-to-face administered electronic questionnaires all data was adequate, with no missing values.

Descriptive statistics were used to determine the sociodemographic details of the women interviewed in this study. The results revealed that most of the respondents 54.6% (231) were between the ages of 25 and 39, while the least respondents 19.4% (82) fell within the age bracket of 40years and above. Regarding employment status, the majority of the respondents 77.1% (326) had some form of employment, whilst 22.9% (97) of the respondents did not have any form of employment. Concerning the respondents' educational status, 26.1% (110) of them had completed tertiary education, 25.9% (109) had no formal education, whilst 24.0% (101) of them had both basic or JHS-level education, respectively. The majority of the respondents 83.7% (353) were Muslims, while the least 16.6% were Christians. Of the respondents, 74.7% (316) were married, whilst 25.3% (107) were single. The majority of respondents 57.0% had one to three kids. Most of the respondents, 95.3% (405), had no history of the disease.

Table 2: Socio-demographic characteristics of respondents

Variable	Number (n=423)	Percentage (%)
Age		
<= 24yrs	110	26.0
25-39yrs	231	54.6
>40yrs	82	19.4
Employment status		
Not-working	97	22.9
Some-work	326	77.1
Education level		
No formal education	109	25.9
Basics	101	24.0
SHS	101	24.0
Tertiary	110	26.1
Religion		
Christian	70	16.6
muslims	353	83.4
Marital Status		
Married	316	74.7
Not-married	107	25.3
Number of births		
None	109	25.8
1-3	241	57.0
4 ++	73	17.2
Family History of Cervical Cancer		
Yes	18	4.3
No	405	95.7

Source: Field Survey, 2022.

4.2 Respondents' Awareness and Knowledge of Cervical Cancer

Table 3 below presents the results of the respondents' awareness and knowledge on cervical cancer. From the analysis, Sixty-eight one percent 68.1% (288) of those polled knew about the disease. The majority of the participants 36.9% (90) cited doctors/nurses as their primary knowledge sources, whereas the smallest percentage of respondents 1.6% (4) cited public gatherings as their source of knowledge. (252) respondents stated that cervical cancer is treatable when found early; (161) respondents stated that multiple sexual partners are the main causes of cervical cancer. Intermenstrual bleeding was mentioned by (162) 38.3% of the women as a sign of the disease. Regarding general awareness, (142) 33.5% of the participants had solid knowledge about cervical cancer, as opposed to (281) 66.4% of the respondents who lacked sufficient knowledge.

Table 3: Cervical cancer awareness and knowledge among respondents

Variable	Number (n=423)	Percentage (%)
Awareness of cervical cancer		
Yes	288	68.1
No	135	31.9
Sources of		
From a friend	28	11.5
From school personnel	31	12.7
From a family member	18	7.4
From a doctor/ nurse	90	36.9
From radio, TV, magazine	73	29.9
Public gathering	4	1.6
***Risks of Cervical cancer:**		
Cervical cancer is a sexually transmitted disease	175	41.4
Cervical cancer is preventable disease	246	58.2
Cervical cancer is preventable through vaccination	197	46.6
	252	59.6
***Cervical cancer causes:**		
Sexually transmitted virus	113	26.7
Multiple sexual partners	161	38.1
Smoking cigarettes	85	20.1
Multiple births		
***Signs of Cervical cancer:**		
Intermenstrual bleeding	162	38.3
Post-menopausal bleeding	29	6.9
Vagina bleeding	29	6.9
Vagina Discharge	64	15.1
Lower abdominal pain	146	34.5
Pain during sexual intercourse	124	29.3

Overall knowledge		
low/poor	281	66.4
High/Good	142	33.6

***Multiple response questions Source: Field Survey, 2022.**

RESPONDENTS OVERALL KNOWLEDGE OF CERVICAL CANCER

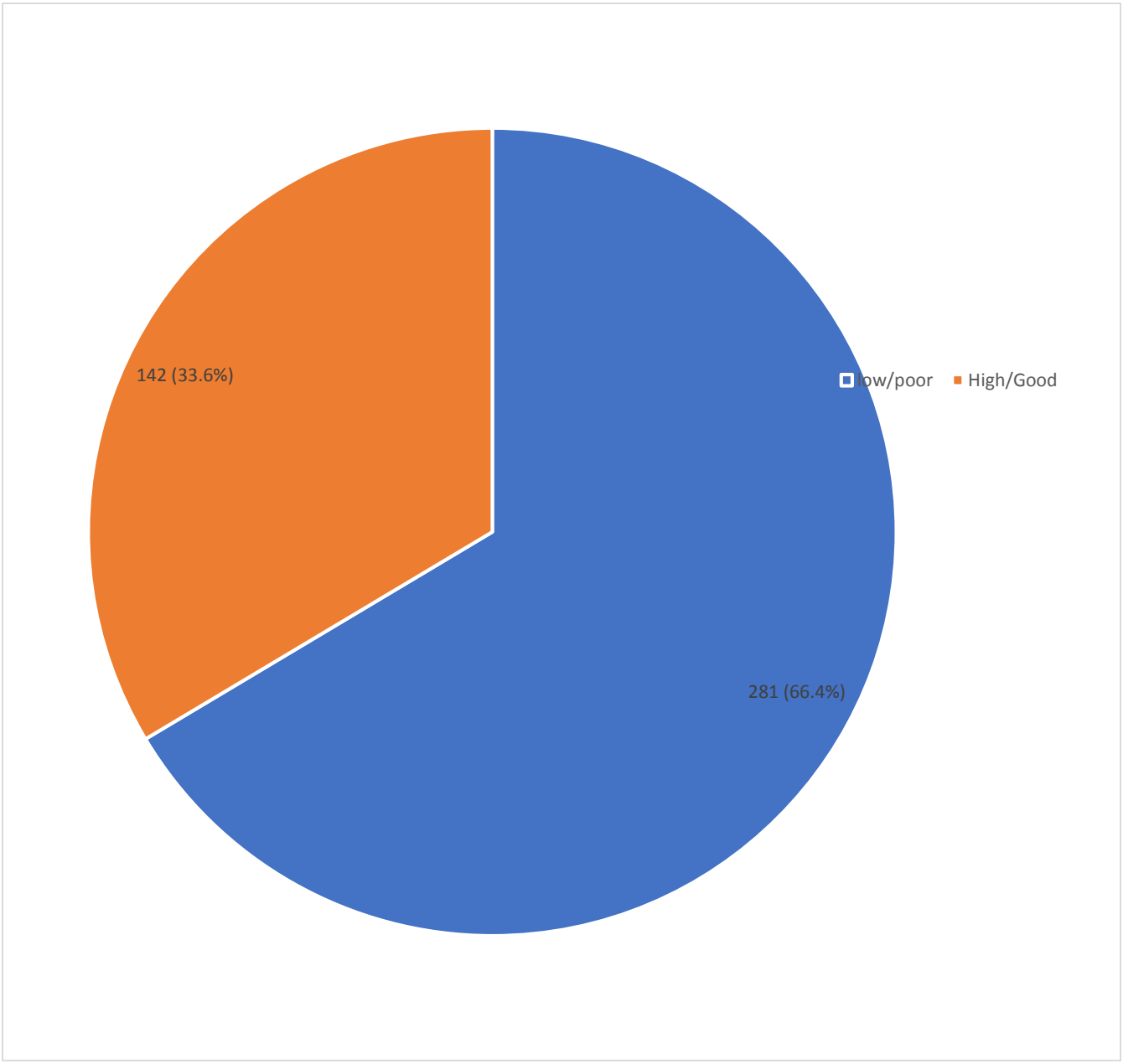

Figure 2: Overall Knowledge of Cervical Cancer

Source: Field Survey, 2022.

4.3 Proportion of Cervical Cancer Screening Uptake among respondents

The findings on participants' use of screening are shown below. The majority of respondents, or 68.1% (288), have never had a cervical cancer screening, whereas the minority, or 31.9% (135) have screened before.

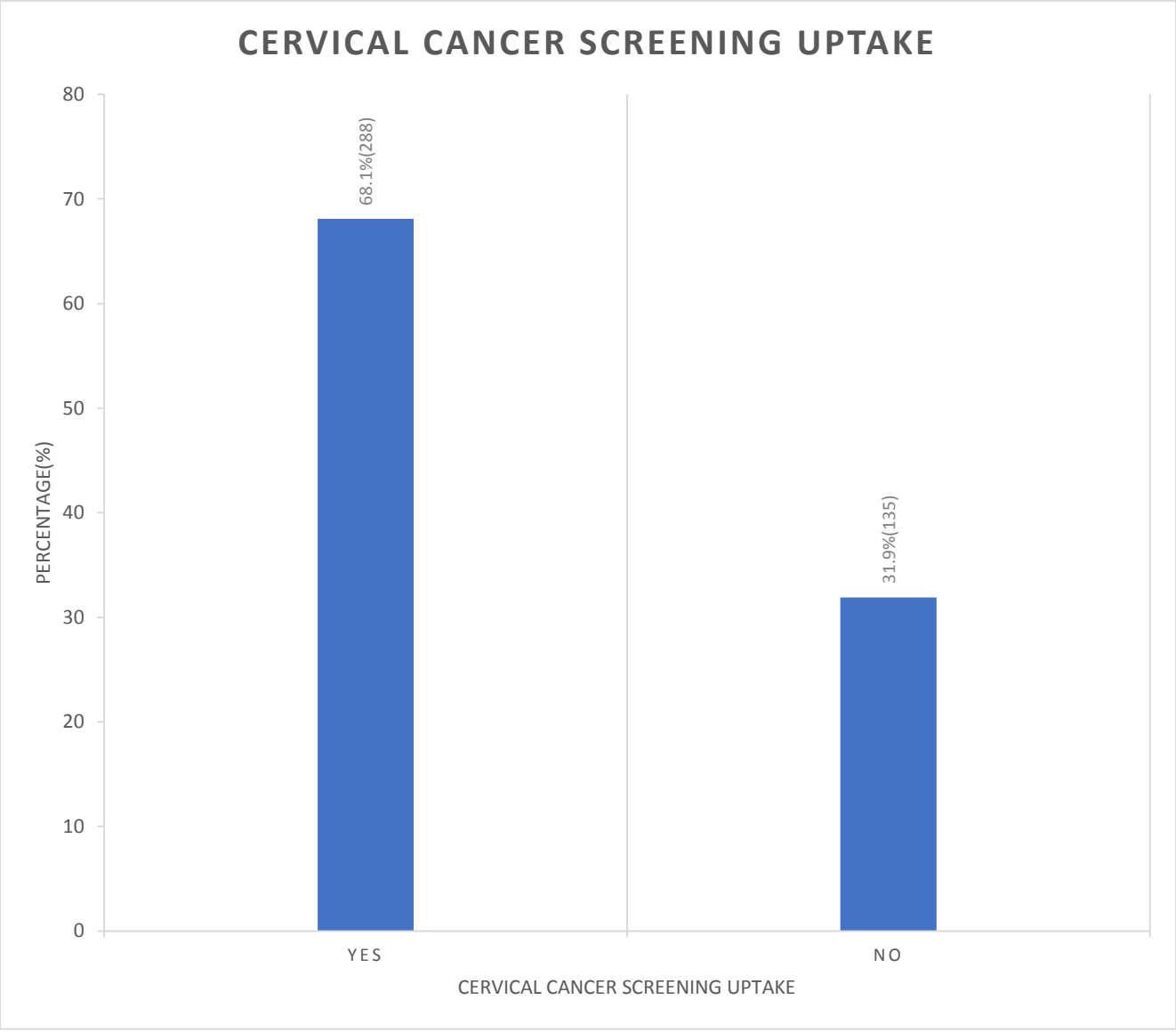

Figure 3: Respondents Cervical Cancer Screening Uptake

Source: Field Survey, 2022.

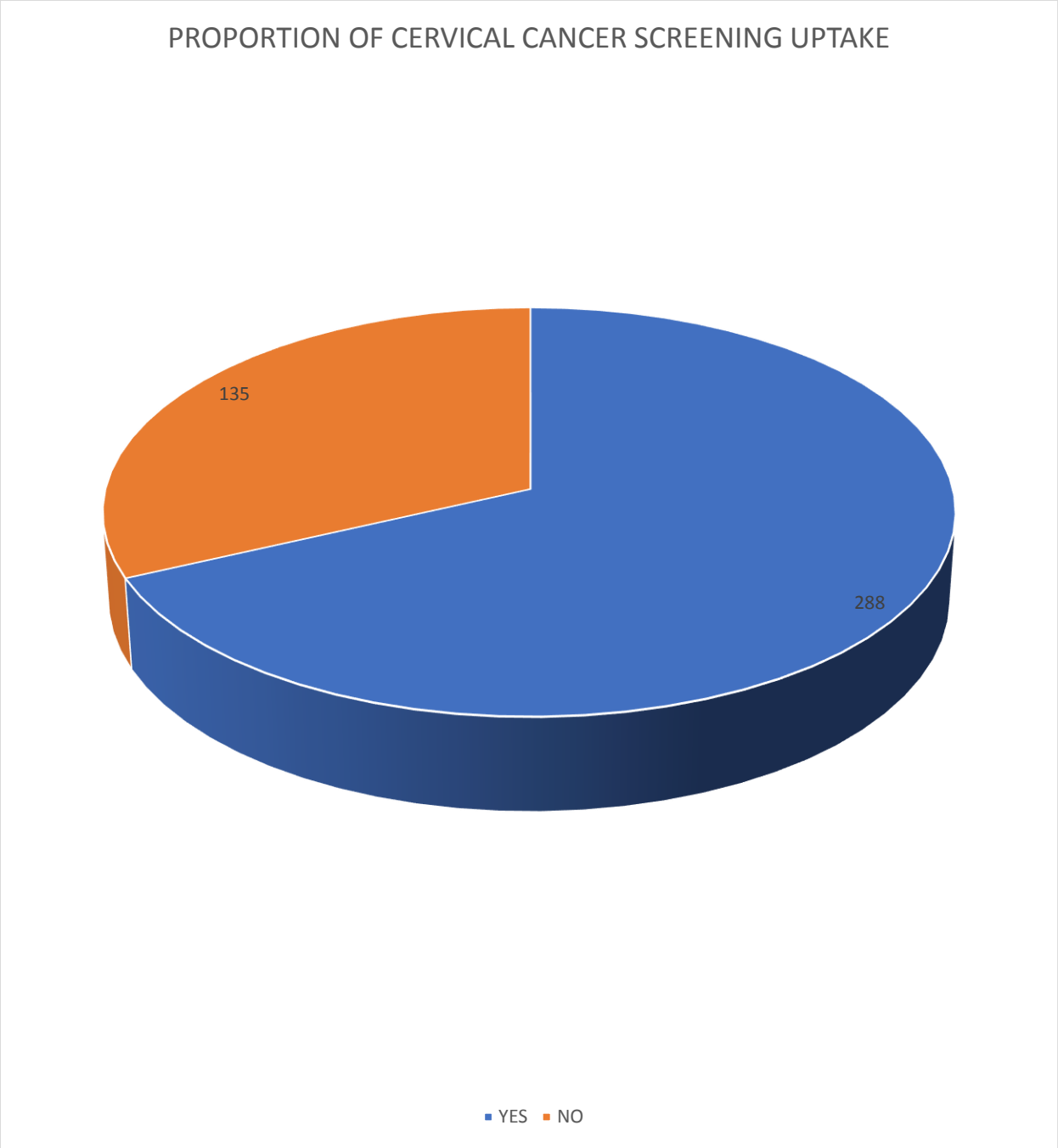

Figure 4: Proportion of Cervical Cancer Screening Uptake

Source: Field Survey, 2022.

4.4 Respondents Frequency of Cervical Cancer Screening

Majority of the participants who screened before 77.1% (96) said they go for cervical cancer screening every year. Followed by 15.7% (17) who had screening less frequently, thus more five years intervals and only 12.7% (21) of the respondents were screened every two to five years.

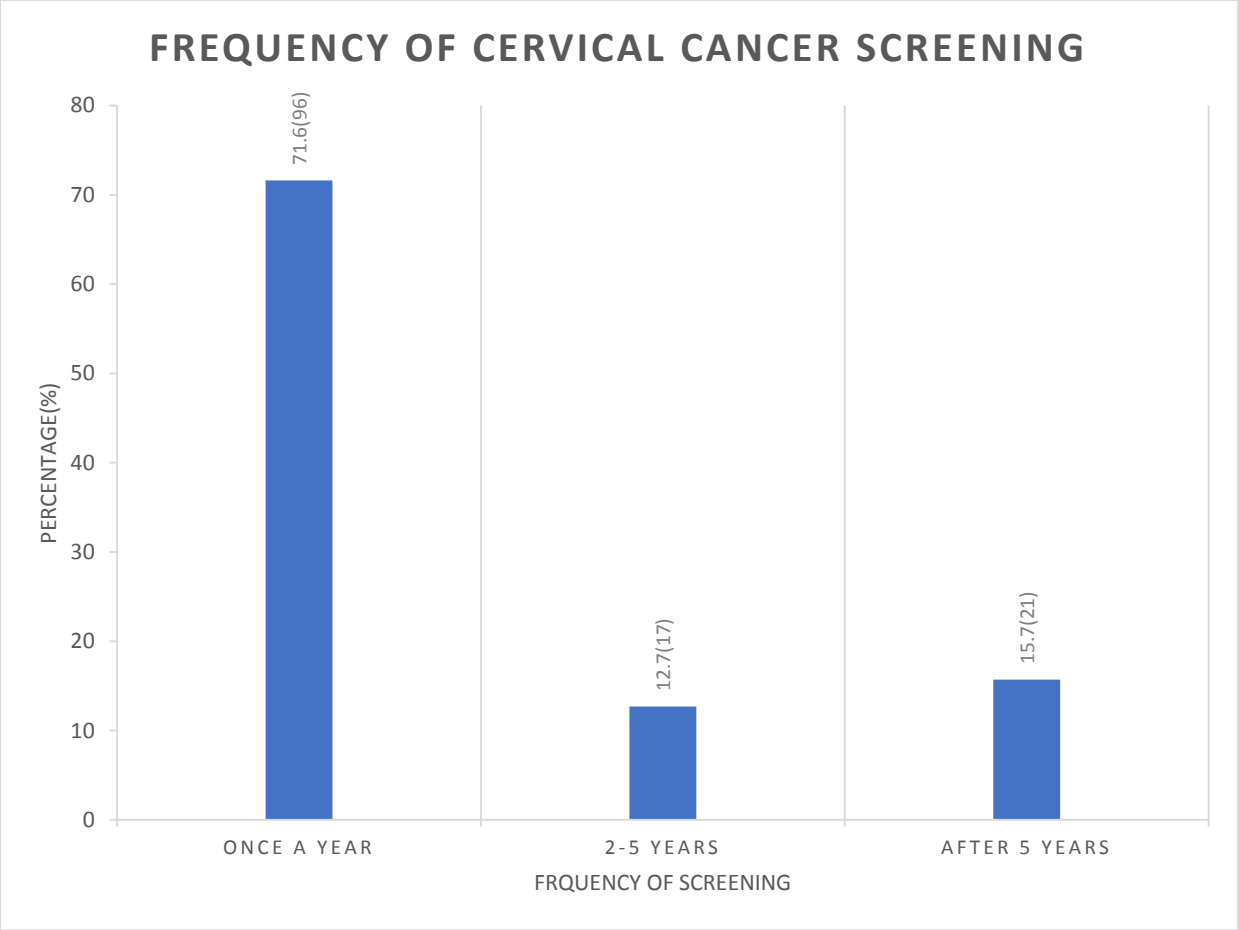

Figure 5: Respondents Frequency of Cervical Cancer Screening

Source: Field Survey, 2022.

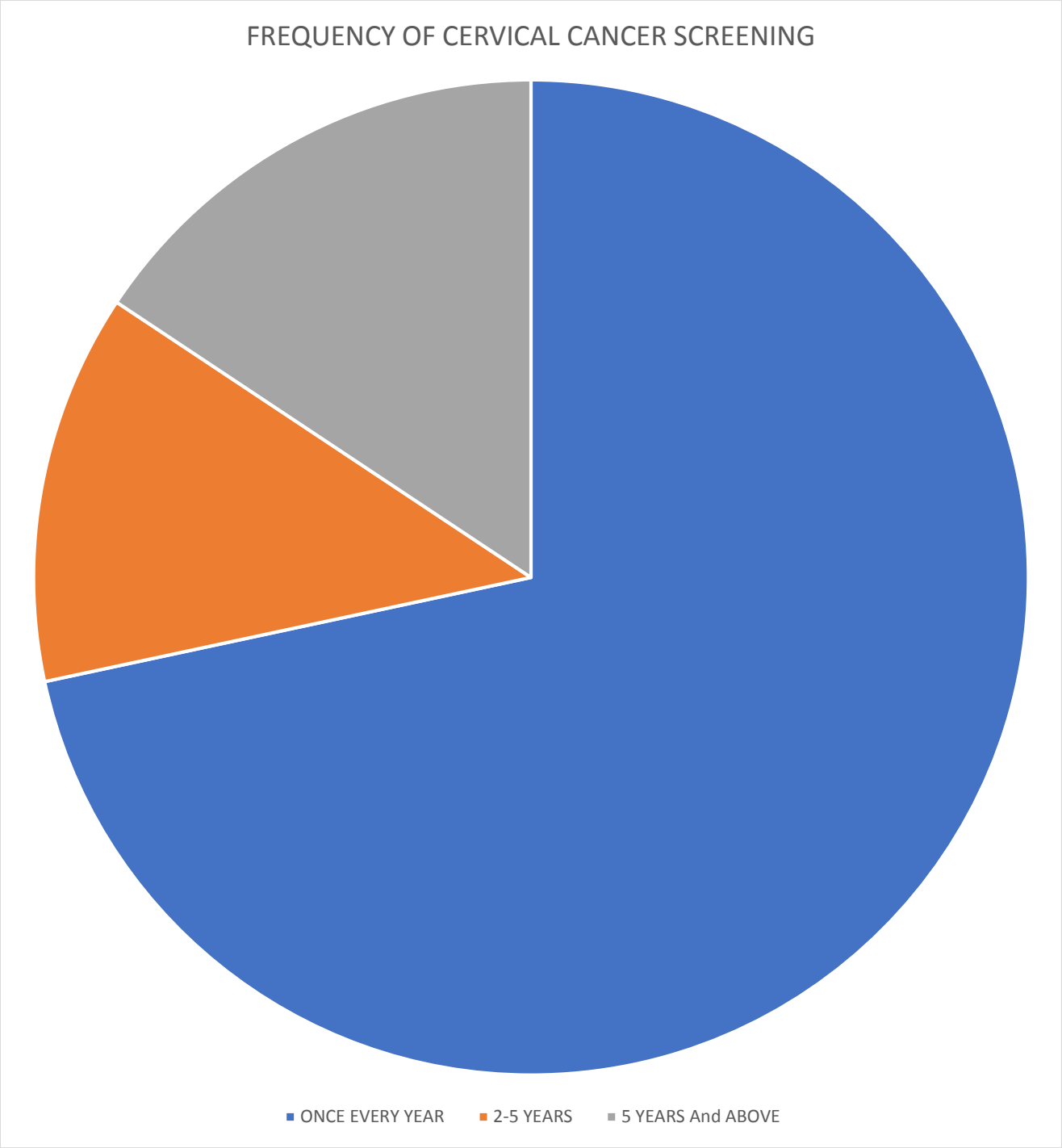

Figure 6: Frequency of Cervical Cancer Screening

Source: Field Survey, 2022.

4.5 Respondents' Perception of Cervical Cancer.

Below presents the conclusions on how respondents felt about cervical cancer. The results demonstrate that a large number of respondents, 97.6% (281) felt that cervical cancer screening was important, whereas 38.9% (176) said cancer cervix is not treatable and the rest 61.1% (176) responded cancer cervix is treatable. 57.6% (166) of the respondents, or little over half, stated no discomfort is associated with cervical cancer screening. A good number of the respondents 63.9% (184) aid that getting tested for cervical cancer is not embarrassing. Only 0.4% (1) of the respondents, or nearly all of the respondents 99.7%, claimed that cervical cancer is a curse. Almost all of the respondents 99.7% (287) said their culture did not prohibit the screening of cervical cancer. Two hundred and three respondents (203) 70.5% of respondents claimed to have reliable transportation to a medical facility. More than half of the respondents 65.6% (185) were at ease with men conducting cervical cancer screening. When asked if there is a long waiting period at the screening centres, 61.8% (178) of the respondents answered no whilst 38.3% (110) responded yes. The major 87.9% claimed that there is no communication barrier to ccs.

Table 4: Perceptions of cervical cancer among respondents

Variable	Number (n=288)	Percentage (%)
cervical cancer screening is importance		
Yes	281	97.6
No	7	2.4
cervical cancer can be cured		
Yes	176	61.1
No	112	38.9
cervical cancer screening is painful.		
Yes	122	42.4
No	166	57.6
cervical cancer screening embarrassing		
Yes	104	36.1
No	184	63.9
cervical cancer a curse		
Yes	1	0.4
No	287	99.7
culture forbid cervical cancer screening		
Yes	1	0.4
No	287	99.7
good transport to health facility		
Yes	203	70.5
No	85	29.5

time for screening		
Yes	211	73.3
No	77	26.7
Awareness of the facility performing screening		
Yes	200	69.4
No	88	30.6
Comfortable with male providers screening women		
Yes	189	65.6
No	99	34.4
Long waiting time		
Yes	110	38.2
No	178	61.8
Difficulty in communication		
Yes	35	12.2
No	253	87.9

Source: Field Survey, 2022.

4.6 Bivariate analysis of association between respondents' perceptions and cervical cancer screening uptake

Table 5 below presents the association between respondents' perceptions and cervical cancer screening uptake. To assess the relationship between factors, the sociodemographic characteristics and knowledge that were the subject of the analysis were contrasted with the uptake of screening for cancer of the cervix. Table 5 shows strong correlations between some perceptions such as the importance of screening, Can be cured, painful, cervical cancer screening is embarrassing, cervical cancer a curse, the culture forbids cervical cancer screening, have good transport to health facility, time for screening, Awareness of facility performing screening, Comfortable with male providers screening, Long waiting time, Difficulty in communication and cervical cancer screening uptake. In each case, the significance level is (χ^2= 6.330, p=0.016), (χ^2=5.295, p=0.021), (χ^2=165.368, p<0.001), (χ^2=14.055, p<0.001), (χ^2=0.885, p=0.531), (χ^2=0.885, p=0.531), (χ^2=0.228, p=0.633), (χ^2=56.182 p<0.001), (χ^2=111.812, p<0.001), (χ^2=0.122, p=0.727), (χ^2=6.435, p=0.011) and (χ^2=1.515, p=0.218) respectively.

Table 5: Bivariate analysis of association between respondents' perceptions and cervical cancer screening uptake

Variable	Screening Uptake		X^2-p-value
	No	Yes	
cervical cancer screening importance			
Yes	146 (95.4)	135 (100.0)	
No	7 (4.6)	0 (0.0)	6.330 (0.016)
cervical cancer can be cured			
Yes	84 (54.9)	92 (68.2)	
No	69 (45.1)	43 (31.8)	5.295 (0.021)
cervical cancer screening is painful			
Yes	11 (7.2)	111 (82.2)	
No	142 (92.8)	24 (17.8)	165.368 (<0.001)
cervical cancer screening is embarrassing	40 (26.1)	64 (47.4)	
Yes			
No	113 (73.9)	71 (52.6)	14.055 (<0.001)
cervical cancer is a curse			
Yes	1 (0.7)	0 (0.0)	
No	152 (99.3)	135 (100.0)	0.885 (0.531)
culture forbid cervical cancer screening			
Yes	1 (0.7)	0 (0.0)	
No	152 (99.3)	135 (100.0)	0.885 (0.531)
good transport to health facility			
Yes	106 (69.3)	97 (71.9)	

No	47 (30.7)	38 (28.1)	0.228 (0.633)
time for screening			
Yes	84 (54.9)	127 (94.1)	
No	69 (45.1)	8 (5.9)	56.182 (<0.001)
Awareness of facility performing screening	65 (42.5)	135 (100.0)	
Yes			
No	88 (57.5)	0 (0.0)	111.812 (<0.001)
Comfortable with male providers screening women			
Yes	99 (64.7)	90 (66.7)	
No	54 (35.3)	45 (33.3)	0.122 (0.727)
Long waiting time			
Yes	48 (31.4)	62 (45.9)	
No	105 (68.6)	73 (54.1)	6.435 (0.011)
Difficulty in communication			
Yes	22 (14.4)	13 (9.6)	
No	131 (85.6)	122 (90.7)	1.515 (0.218)

Source: Field Survey, 2022.

4.7 Factors Associated with Cervical Cancer Screening Uptake

Table 6 below presents factors responsible for Screening. To assess the relationship between factors, the sociodemographic characteristics and knowledge that were the subject of the analysis were contrasted with the uptake of screening for cervix cancer. Table 6 shows strong correlations between age, employment status, education level, religion, marital status, number of births, family history of the disease, and its general knowledge. In each case, the significance level is (χ^2=10.00, p=0.005) (χ^2=3.89, p=0.048), (χ^2=50.47, p<0.001), (χ^2=10.7, p=0.001), (χ^2=5.93, p=0.015), (χ^2=10.16, p=0.006), (χ^2=7.37, p=0.007) and (χ^2=80.73, p<0.001) respectively.

Table 6: Bivariate analyses of the factors associated cervical cancer screening uptake.

	Screening Uptake		X^2-p-value
	No	**Yes**	
Age			
<= 24yrs	82 (28.5)	28 (20.7)	
25-39yrs	142 (49.3)	89 (65.9)	
>40yrs	64 (22.2)	18 (13.3)	10.00 (0.005)
Employment status			
Not-working	74 (25.7)	23 (17.0)	
Some-work	214 (74.3)	112 (83.0)	3.89 (0.048)
Education level			
No formal education	104 (36.2)	5 (3.7)	
Basics	77 (26.8)	24 (17.9)	
SHS	64 (22.3)	37 (27.6)	
Tertiary	42 (14.6)	68 (50.7)	50.47 (0.000)
Religion			
Christian	35 (12.2)	34 (25.2)	
Muslim	252 (87.8)	101 (74.8)	10.7 (0.001)
Marital Status			
Married	205 (71.2)	111 (82.2)	
Not-married	83 (28.8)	24 (17.8)	5.93 (0.015)
Number of births			
None	84 (29.2)	25 (18.5)	
1-3	149 (51.7)	92 (68.1)	
4 ++	55 (19.1)	18 (13.3)	10.16 (0.006)
Family History of Cervical Cancer			
Yes	7 (2.4)	11 (8.1)	
No	281 (97.6)	124 (91.9)	7.37 (0.007)
Overall knowledge			
low/poor	237 (80.6)	49 (36.3)	
High/Good	56 (19.4)	99 (63.7)	80.73 (<0.001)

Source: Field Survey, 2022.

4.8 Multivariate analysis associated with Cervical Cancer Screening Uptake

Table 7 below presents results on the analysis on the factors predicting screening uptake among the respondents. The findings on the occupational status of the respondents revealed that respondents who had jobs were 2.27 times more likely to screen than those without jobs [AOR=2.27 (CI: 1.07 - 4.83), p=0.021). The findings further show that respondents with some formal educations were 15.91 times more likely to get tested than those without any formal education [AOR=15.91 (CI: 5.76 - 46.94), p0.001]. The analysis also indicated that women were 7.18 times more likely to undergo screening if they had a thorough understanding of cervix cancer than without. AOR=7.18 (CI: 4.19 - 12.29), p0.001].

Table 7: Factors predicting cervical cancer screening uptake among respondents

Variables	cOR (95 % C.I) p-value	aOR (95 % C.I) p-value
Age		
<= 24yrs		
25-39 yrs	1.84 (1.11, 3.04) 0.018	1.21 (0.57, 2.56) 0.621
>40 yrs	0.82 (0.42, 1.62) 0.574	0.96 (0.32, 2.89) 0.946
Employment status		
Not-working		
Some-work	**1.68 (1.00, 2.83) 0.050**	**2.27 (1.07, 4.83) 0.033**
Education level		
Some-formal education	**14.70 (5.83, 37.06) <0.001**	**15.91 (5.76, 43.94) <0.001**
Religion		
Christian		
Muslim	0.41 (0.24, 0.70) 0.001	0.63 (0.33, 1.21) 0.165
Marital Status		
Married		
Not-married	0.53 (0.32, 0.89) 0.016	1.06 (0.35, 3.24) 0.918
Number of births		
None		
1-3	2.07 (1.24, 3.48) 0.006	2.63 (0.85, 8.14) 0.094
4 ++	1.10 (0.55, 2.20) 0.789	2.67 (0.66, 10.87) 0.170
Family History of Cervical Cancer		
No		
Yes	3.56 (1.35, 9.40) 0.010	2.85 (0.81, 10.09) 0.104
Overall knowledge		
low/poor		
High/Good	**7.27 (4.61, 11.48) <0.001**	**7.18 (4.19, 12.29 <0.001**

Source: Field Survey, 2022.

4.9 Bivariate analysis of association between respondents' knowledge and demographic characteristics.

Table 8 below presents the association between respondents' knowledge and demographic characteristics. To assess the relationship between factors, the sociodemographic characteristics and knowledge that were the subject of the analysis were contrasted with the uptake of screening for cervix cancer. Table 7 shows strong correlations between demographic characteristics such as employment status, educational level, religion, family history and respondents' knowledge of screening. In each case, the significance level is (χ^2=6.5346, p=0.011), (χ^2=25.84, p=0.000), (χ^2=10.15, p<0.001), and (χ^2=6.4, p=0.011) respectively.

Table 8: Bivariate analysis of association between respondent's knowledge and demographic characteristics

Variable	Knowledge level		X^2p-value
	Low	High	
Age			
<= 24yrs	68(24.2)	42(29.6)	
25-39yrs	152(54.1)	79(55.6)	
>40yrs	61(21.7)	21(14.5)	3.42 (0.181)
Employment status			
Not-working	54(19.2)	43(30.28)	
Some-work	227(80.8)	99(69.7)	6.5346(0.011)
Education level			
No formal education	94(33.5)	15(10.6)	
Some formal education	187(66.6)	127(89.4)	25.84(0.000)
Religion			
Christian	35(12.5)	35(24.7)	
Muslim	246(87.5)	107(75.35)	10.15(0.001)
Marital Status			
Married	216(76.9)	100(70.4)	
Not-married	65(23.1)	42(29.6)	2.1(0.2)
Number of births			
None	65(23.1)	44(30.9)	
1-3	166(59.1)	75(52.8)	
4 ++	50(17.8)	23(16.2)	3.05(0.22)
Family History of Cervical Cancer			
Yes	7(2.5)	11(7.8)	
No	274(97.5)	131(92.3)	6.4(0.011)

Source: Field Survey, 2022.

4.10 Bivariate analysis of association between respondents' knowledge and perception of cervical cancer screening.

Table 9 below presents the association between respondents' knowledge and perception of cervical cancer screening. To assess the relationship between factors, the respondent's knowledge and perception of cervical screening, that was the subject of the analysis, were contrasted with the uptake of screening for cervix cancer. Table 9 shows strong correlations between some perceptions such as Can be cured, and screening is painful, cervical cancer screening embarrassing, time for screening, Awareness of facility performing screening, Difficulty in communication and cervical cancer screening uptake. In each case, the significance level is (χ^2=6.10, p=0.013), (χ^2=18.12, p<0.001), (χ^2=9.74, p<0.002), (χ^2=8.53, p=0.003), (χ^2=13.55, p<0.001) and (χ^2=6.85, p=0.009) respectively.

Table 9: Bivariate analysis of association between respondents' knowledge and perception of cervical cancer screening

Variable	Knowledge level		X^2-p-value
	low/poor	High/Good	
Cervical cancer screening important			
Yes	140(95.9)	141(99.3)	
No	6(4.1)	1(0.7)	3.52(0.121)
Cervical cancer can be cured			
Yes	79(54.1)	97(68.3)	
No	67(45.9)	45(31.69)	6.10 (0.013)
Cervical cancer screening is painful			
Yes	44(30.1)	78(54.93)	
No	102(69.9)	64(45.1)	18.12(<0.001)
Cervical cancer screening is embarrassing			
Yes	40(27.4)	64(45.1)	
No	106(72.6)	78(54.9)	9.74(0.002)
Cervical cancer a curse			
Yes	0(0.0)	1(0.7)	
No	146(100.0)	141(99.3)	1.03(0.493)
culture forbid cervical cancer screening			
Yes			
No	1(0.7)	0.(0.00)	
There is good transport to the health facility	145(99.3)	142(100)	0.98(1.000)
Yes			
No	104(71.2)	99(69.72)	
time for screening	42(28.8)	43(30.3)	0.08(0.778)
Yes			

No	96(65.8)	115(80.9)	
Awareness of the facility performing screening	50(34.3)	27(19.1)	8.53(0.003)
Yes			
No	87(59.6)	113(79.59)	
Comfortable with male providers screening women	59(40.4)	29(20.4)	13.55(<0.001)
Yes			
No	90(61.6)	99(69.7)	
Long waiting time	56(38.36)	43(30.28)	2.08(0.149)
Yes			
No	49(33.6)	61(42.9)	
Difficulty in communication	97(66.4)	81(57.0)	2.7(0.101)
Yes			
No	25(17.1)	10(7.1)	
	121(82.9)	132(92.9)	6.85(0.009)

Source: Field Survey, 2022.

CHAPTER FIVE

DISCUSSION OF THE RESULTS

5.0 Introduction

This study sought to determine the factors associated with cervical cancer screening uptake among women in the Tamale Metropolis of the Northern Region of Ghana. Having established lower proportion and poor knowledge of screening, good attitude towards screening as well as age, employment status, educational level, religion, marital status, number of births, and family history of the disease were some of the factors influencing uptake of screening in the previous chapter, this chapter discusses the results to the key objectives and variables of interest. In so doing, the key findings were compared with previous investigations, and noting whether such findings are in agreement with or disagree with the findings of other studies, theories and established literature taking into consideration the importance, meaning and relevance of the results to demonstrate the contribution of the research.

The discussion is divided into subsections including; uptake prevalence of cervical cancer screening, knowledge and attitude of women towards screening and factors associated with screening uptake.

5.1 Uptake of Cervical Cancer Screening

Even though most respondents know more about cervical cancer, 31.8% of them and 68.2% said they had "never" been screened for the disease. These findings imply that the respondents may face obstacles to cervical cancer screening. Even though 31.8% of respondents reported ever having their cervical cancer tested, this figure is greater than the uptake prevalence discovered by Tanzanian researchers Mabelele et al., (2018), who found that just 14.3% of respondents reported ever having their cervical cancer examined.

The disparities may be brought about by the unavailability of effective screening for early diagnosis and treatment, a lack of adequate healthcare access resulting in a decline in reported diagnoses, and a lack of precise data due to inadequate registries for cancer in the affected nations (Mabelele et al., 2018). The findings of the current study are also comparable with a study done in Ghana to evaluate women's cervical cancer screening habits, which found that out of 2711 women surveyed, only 795 (29.34%) had ever undergone a Pap smear test, and that only 225 (8.3%) had ever had a pelvic examination (Mabelele et al., 2018)

According to the data, very few African women were undergoing cervical cancer screenings (Nwabichie et al., 2018). Women in developing nations have reported low screening acceptance, particularly in Ghana, despite screening being found to lower the incidence and death rates of the disease prevalent among women (Calys-Tagoe et al., 2020). Due to a variety of reasons, such as the women's marital status, level of satisfaction with healthcare, and involvement in healthcare, there is often low patronage of cervical cancer screening among African women (Calys-Tagoe et al., 2020).

Because most women are unaware of the importance of screening in detecting and managing early disease many thought screening was unnecessary in the absence of cervical cancer symptoms or signs, and that is the more reason why there is low coverage of cervical cancer screening (Black et al., 2019a).

5.2 Knowledge of Women on Cervical Cancer

The poll results showed that 142 (33.5%) respondents had a thorough understanding of cervical cancer, compared to 281 (66.4%) who did not. As a result, a lack of understanding of the condition is to blame for the low uptake of cervical cancer screening. The frequency of screenings for cancer of the cervix is consistent with a study by Abudukadeer et al., (2015), who

discovered that most reproductive-age women in Xinjiang knew little to nothing about the risk factors for cervical cancer. Only 900 women (18.0%) knew about at least one risk factor for cervical cancer. A second study supports this current finding; Obol et al., (2021) found that regardless of the women's backgrounds if they do not receive adequate education to improve their functional knowledge, understanding, and acceptance of routine screenings for cancer cervix, they might not be able to influence behaviour change in others.

This was further supported by a study by Abamecha et al. (2019), who discovered that intention to undergo screenings for cancer of the cervix was strongly and favourably related to knowledge of cancer of the cervix. Even though it is insufficient, knowledge is significant and vital, particularly for making logical decisions about any health-related action. Therefore, additional educational programs about cervical cancer should be offered to women generally to enhance the uptake of screenings.

5.3 Knowledge and Attitude of Women Towards Cervical Cancer Screening

The current study found that a high percentage of those who screened before (77.1%) said they screened for cervical cancer once a year, demonstrating a positive attitude toward the practice. The findings of this study show that those who took part in the screening understand the significance of screening, suggesting that more women will adopt if the other non-participants are also aware of the significance of cervical cancer screening. They will have a good attitude regarding it. This investigation concurs with several studies that have described the attitude towards screenings for cancer of the cervix as positive because most participants regarded screenings for cancer of the cervix as important in the survey, hence the need for early screening and diagnoses could lead to good outcome (Mukama et al., 2017). In a study that included 1,137 women between the ages of 30 and 49, the authors also noted that participants with a higher

tertiary form of education level usually had the zeal and were more likely to have a favourable opinion of screenings for cancer of the cervix according to Heena et al., (2019). This study's results contradict the study by Heena et al., (2019) which revealed that most of the participants had a negative attitude about screenings for cancer of the cervix. In a cross-sectional study involving 1,517 HIV-infected women in Nigeria, those with tertiary education were more likely to accept CCS than those with less education. (Ezechi et al., 2013). As a result, men with high education are more likely to have a good attitude toward CCS and other preventive health services. Therefore, women's adoption of CCS would be influenced by how men and women view it. It is especially true in societies where men are treated with the utmost respect and socio-cultural, traditional, and religious rituals are highly cherished.

Only 15% of respondents expressed a good attitude about cervical cancer screening, and respondents generally responded negatively to the questionnaire. 187 (66%) health professionals had favourable thoughts on cervical cancer screening, and 250 (88%) participants firmly agreed that they would be happy to have their daughters or sisters receive the HPV vaccine, according to a separate researcher who agreed with the results of this study (Tekle et al., 2020). Contrary to the findings of the most recent study, Tilahun et al., (2019) found that only 44.1% of participants in the study had a favourable opinion of cervical cancer screening.

Ghosh et al., (2021) observed that older women have a favourable attitude 11.7 times more often than younger women, with 326 (53.3%) respondents with a good attitude for screenings for cancer of the cervix compared to 286 (46.7%) respondents. It was also noted that the majority (> 90%) of the participating women displayed a favourable attitude toward screenings for cancer of the cervix for prevention.

The results of the current survey showed that 68.1% of the women are aware of screenings for cancer of the cervix and thought it was a good idea. Therefore, one would anticipate a high rate of cervical cancer screening in the city; yet, the Tamale metropolitan region has a low prevalence of screenings for cancer of the cervix. This is consistent with another study carried out by Ghosh et al., (2021) that health service are influenced by their level of knowledge and information, which also has an impact on how frequently they use the service. Contrary to this assertion, a study by Swapnajaswanth et al., (2014) found that while 89.6% of nurses and midwives did not participate in CCS, they had a favourable attitude of CC and its screening. Numerous studies have characterized the attitude toward CCS as favorable because survey participants recognized that the condition was severe and that early detection and diagnosis could result in favorable outcomes (Mukama et al., 2017).

Nattembo, (2018) assert that majority of the men claimed they were uninformed that men can carry the HPV virus and said that women should be in responsibility of educating themselves about CC. The men in the study were misinformed, uninterested about the health of their women when intercourse-related topics were brought up, according to a qualitative study in Korea that examined men's comprehension of CC (Black et al., 2019a). This proves that men do not give their spouses' or other female coworkers' reproductive health a higher priority.

5.4 Factors Associated with Cervical Cancer Screening Uptake

Age, employment status, educational level, religion, marital status, number of births, family history of cervical cancer, and general knowledge of cervical cancer were found to be important factors associated screenings for cancer of the cervix among the respondents, according to the study's investigation into the factors influencing the uptake of screenings for cancer of the cervix among the respondents. Raising any of these respondent-related norms has been shown to

improve screenings for cancer of the cervix in the Tamale metropolitan region, according to empirical study.

Findings of this current study is consistent with a study by Nwabichie et al., (2018) who discovered a connection between the uptake of screenings for cancer of the cervix and significant factors like age, marital status, monthly income, knowledge, challenges, acculturation, insurance status, regular health care provider, and clinic accessibility. Marital status was found to be a significant predictor of Pap smear uptake over the previous three years, with married women having a higher uptake than single women (Nwabichie et al., 2018).

According to research, a woman's age, religion, region, level of education, employment, amount of media exposure, household wealth index, attendance at a medical facility, and health insurance can all have an impact on her chances of getting a screenings for cancer of the cervix (Tiruneh et al.,2017) .

Furthermore, a study conducted by Id et al. to determine the factors associated with the use of screenings for cancer of the cervix discovered that having a current job as a government or private employee, having given birth in the past, having had multiple partners, having good knowledge of cervical cancer, and having a favorable attitude toward screenings for cancer of the cervix were all found to be significantly associated with the use of screenings for cancer of the cervix (H. T. Id et al., 2019).

In their study, (Dulla et al., 2017) stated that age, marital status, career, experience, degree of education, understanding of the results of cervical cancer, type of health institution, and employment in screenings for cancer of the cervix facilities are the factors significantly impacting the uptake of screenings for cancer of the cervix in Ethiopia.

A number of researchers, including Annan et al., (2019), Black et al., (2019a), Marques et al. (2020), and Liu et al., (2017) agree with the study's findings that significant barriers to cervical cancer, such as a lack of access to facilities for screening, as well as major facilitators, such as awareness of cervical cancer screening, perceptions of one's own risk of CC, and advice to attend a screening, were statistically significant factors.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The study's key goals were to determine the percentage of screening uptake, degree of awareness, attitudes, and other factors related to women in the Tamale Metropolitan area adopting screening. The research's conclusions are as follows:

Even though most women know about screenings for cancer of the cervix, the percentage of women who had ever undergone screening for the disease was rather low; this demonstrates the need for strong support for screenings for cancer of the cervix. Only 31.8% of respondents reported they had ever undergone a cervical cancer screening, even though 68.1% of those polled claimed to be aware of the disease. Despite their low (33.6%) knowledge of the problem, most respondents (77.1%) stated they had been screened for the disease once a year. This shows a positive attitude toward cervical cancer screening. Age, employment status, educational level, religion, marital status, number of births, family history of the cancer, and general awareness of cervical cancer were also found in the study as important factors that promote cervical cancer screening.

6.2 Recommendation

It is important to recognize the importance of cervical cancer screening uptake and its impact on reproductive health. Based on the study's findings, the following suggestions were made:

1. In collaboration with the Ministry of Health and Ghana's Health Service, the government should promote cervical cancer screening through various media, particularly at the antenatal clinic (ANC) and postnatal clinic (PNC). Service providers should be able to convince the audience when necessary and direct interested women toward the

appropriate facilities. It is crucial to recognise the significance of cervical cancer screening uptake and its effects on reproductive health.

2. Educational level is positively correlated with cervical cancer screening uptake, the Metropolitan Assembly must step up its push for female child education in the Metropolis about cervical cancer.
3. Husbands have an impact on their wives, therefore, healthcare providers should create ways to involve them concerning the reproductive health of their wives and daughters.
4. Female student the opportunity to learn about their reproductive health, the government should work with the ministry of education and the Ghana Education Service to incorporate reproductive health lessons in both junior high and senior high schools.
5. Further investigation should be conducted on the effects of health education interventions on senior high school (SHS) girls' knowledge, attitudes, and use of cervical cancer preventative practices.
6. Cervical cancer prevention can be improved through culturally and linguistically appropriate health campaigns to raise public awareness of the value of screening, better support for our healthcare workforce to lower burnout and increase the accessibility of primary care medical services, and technological advancements like HPV self -sampling.

6.3 Implication for Policy Intervention

The results of this study will help health planners remove service-related barriers and create a viable local intervention to encourage and motivate women to undergo cervical cancer screening. The results of this study may serve as a guide for developing educational and promotional programs for screening to increase screening uptake among asymptomatic women and speed up diagnosis for women with symptoms.

The findings of this study will assist health planners in removing service-related obstacles and in designing a successful intervention that can be used locally to entice and motivate women to undergo cervical cancer screening. In order to boost screening uptake among asymptomatic women and prompt diagnosis for women with cervical cancer symptoms, the findings of this study may serve as a guide for creating promotional and instructional programs for screening.

This study examined the factors linked to women's uptake of screening, and stakeholders in the Tamale Metropolis should use the results to plan how to raise the rate. According to the study's findings, most respondents had never undergone screening, which may have been due to a barrier like a protracted wait for cervical cancer that discouraged some of them from going. The data can be used by significant stakeholders, such as the Tamale Metropolitan Health Directorate, hospitals, and other healthcare organizations, to develop evidence-based interventions for this group of respondents to remove the barriers preventing the uptake of cervical cancer screening in their service areas.

Others can also influence a person's decision to screen for cervical cancer or not in the social network, whose views and impressions are frequently more influential than their own. Therefore, using this study as a reference, policymakers might develop cervical cancer screening campaigns that consider those who have influence over decisions as well as the individual woman.

The survey results show a significant relationship between the utilization of cervical cancer screening and a person's age, job situation, educational attainment, religion, marital status, number of children born, family history of cervical cancer, and general level of knowledge. The key players in reproductive health may find this article helpful in developing policies to address the sociodemographic characteristics affecting the uptake of cervical cancer screening in the city.

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APPENDIX 1

CONSENT FOR PARTICIPATION FOR RESPONDENTS

We created this form to investigate the Factors Associated with Cervical Cancer Screening uptake among Women of reproductive age in Tamale metropolitan assembly. This form collects data on the cervical cancer uptake among women in Tamale metropolitan assembly, knowledge and attitude towards cervical cancer screening, and Predisposing factors associated with Cervical Cancer Screening uptake among women.

The findings of this study will be useful in increasing women's knowledge and awareness of risk factors, overcoming barriers to having the test, and encouraging a positive attitude toward screening, all of which will help to reduce the mortality rate. It will also encourage and develop the quality of health care provided to you. You can refuse to participate in and withdraw from the study at any time. Kindly note that all of your personal information collected will be kept confidential and that no one will look for it other than the researcher. It will also be used for scientific research. Kindly do not include your name. Participation in this study will not expose you to personal, emotional, or ethical risks. Thanks for participating in the study:

Student Name: MUSTAPHA SHA-ABAN

SUPERVISORS:

DR. RUTH NIMOTA NUKPEZAH

MERRY RACHAEL KPORDOXAH

APPENDIX 2

QUESTIONNAIRE ON THE ASSESSMENT OF FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN IN TAMALE METROPOLIS:

SOCIO-DEMOGRAPHIC

1. Your age in years: _____years
2. Occupation ……..
3. Educational background :
    - Illiterate
    - Primary
    - JHS
    - SHS
    - Tertiary
4. Religion :
    - Christian
    - Muslim
    - Traditional
5. Marital status :
    - Married
    - Single
    - Divorce
    - Widow
    - Informal union

6. Number of children …….
7. Family history of cervical cancer
    - Yes
    - No

AWARENESS AND KNOWLEDGE OF CERVICAL CANCER

8. Have you heard of cervical cancer before
    - Yes
    - No
9. Where did you first hear about cervical cancer
    - From friends
    - From school personnel
    - I don't remember
    - From family members
    - From doctor /nurse
    - From radio
    - Other sources
10. Cervical cancer is sexually transmitted disease
    - Yes
    - No
    - I don't know
11. Cervical cancer is preventable
    - Yes
    - No

- I don't know

12. Cervical cancer is preventable through vaccination of young girls .
    - Yes
    - No
    - I don't know
13. Cervical cancer is curable in hospital when diagnosed early
    - Yes
    - No
    - I don't know
14. Please tick the risk factors of cervical cancer .
    - Early onset of sexual activity
    - Infections with a sexually transmitted germ /virus(HPV)
    - Multiple male sexual partners
    - Smoking cigarettes /tobacco
    - Grand multiparity
15. Please tick the symptoms of Cervical cancer
    - Intermenstrual vaginal bleeding
    - Post-menopausal bleeding
    - Post-coital vaginal bleeding
    - Excessive vaginal discharge, often with offensive smell
    - Lower abdominal pain
    - Pain in the genital during sexual intercourse

PROPORTION OF CERVICAL CANCER SCREENING

16. Have you been screen of Cervical cancer before ?
    - Yes
    - No

ATTITUDE TOWARDS CERVICAL CANCER SCREENING

17. How often do you go for screening
    - Once a year
    - Every 2-5 years
    - Less often than 5 years
    - I don't know

PERCEIVED THREAT OF CERVICAL CANCER

18. Does the thought of cancer scares you
    - Yes
    - No
    - I don't know
19. Do you think you are susceptible to Cervical cancer
    - Yes
    - No
    - I don't know
20. Are you afraid of bad diagnosis
    - Yes
    - No

- I don't know

PERCEIVED BENEFITS OF CERVICAL CANCER SCREENING

21. Do you think Cervical cancer is important
    - Yes
    - No
    - I don't know
22. Do you believe Cervical cancer can be cured
    - Yes
    - No
    - I don't know

PERCEIVED BARRIERS TO CERVICAL CANCER SCREENING

23. Do you think Cervical cancer painful
    - Yes
    - No
    - I don't know
24. Do you find Cervical cancer embarrassing
    - Yes
    - No
    - I don't know
25. Do you believe Cervical cancer is a curse from God
    - Yes
    - No

- I don't know

26. Does your religion has anything against Cervical cancer screening
    - Yes
    - No
    - I don't know
27. Does your culture forbid Cervical cancer screening
    - Yes
    - No
    - I don't know

SOCIOECONOMIC BARRIERS TO CERVICAL CANCER SCREENING

28. Is the transportation system to the health facility good
    - Yes
    - No
    - I don't know
29. Do you have time for Cervical cancer screening
    - Yes
    - No
    - I don't know

HEALTHCARE SYSTEM BARRIERS TO CERVICAL CANCER SCREENING

30. Do you know any health facility offering Cervical cancer screening service
    - Yes
    - No

- I don’t know

31. Do you feel comfortable with a male health personnel rendering Cervical cancer screening

- Yes
- No
- I don’t know

32. Are there long waiting time at the health facility for Cervical cancer screening

- Yes
- No
- I don’t know

33. Is it difficult to communicate with health personel

- Yes
- No
- I don’t know

Kwame Nkrumah
University of Science
and Technology, Kumasi

College of Health Sciences
SCHOOL OF MEDICINE AND DENTISTRY

COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS

Our Ref: CHRPE/AP/183/23

24th March 2023.

Mr. Sha-Aban Mustapha
Department of Global and International Health
School of Public Health
University for Development Studies
TAMALE.

Dear Sir,

LETTER OF APPROVAL

Protocol Title: ***"Factors Associated with Cervical Cancer Screening Uptake among Women in Tamale Metropolis."***

Proposed Site: ***Tamale Teaching Hospital, Tamale West Hospital and Tamale Central Hospital.***

Sponsor: ***Self-Sponsored.***

Your submission to the Committee on Human Research, Publications, and Ethics on the above-named protocol refer.

The Committee reviewed the following documents:

- A notification letter of 22nd June 2022 from the Tamale Teaching Hospital (study site) indicating approval for the conduct of the study at the Hospital.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning **24th March 2023** to **23rd March 2024** renewable thereafter. The Committee may, however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you for your application.

Yours faithfully,

Rev. Prof. John Appiah-Poku.
Honorary Secretary
FOR: CHAIRMAN

Room 7, Block L, School of Medicine and Dentistry, KNUST, University Post Office, Kumasi, Ghana
Tel: +233 (0) 3220 63248 **Mobile:** +233 (0) 20 5453785 **Email:** chrpe.knust.kath@gmail.com/chrpe@knust.edu.gh

PPENDIX 4

UNIVERSITY FOR DEVELOPMENT STUDIES
(School of Public Health)

P.O. Box 1883
Tamale, Ghana

Our Ref: UDS/MPH/0041/20

Your Ref:

February 28, 2022

Department of Global and International Health

To whom it may concern

Dear Sir/Madam,

INTRODUCTION: MASTER OF PUBLIC HEALTH STUDENT: EPIDEMIOLOGY TRACK

I write to introduce to you **Shu-Aban Mustapha (UDS/MPH/0041/20)**, a final year Master of Public Health student of the Department of Global and International Health, School of Public Health.

As part of the requirements for graduation, the student is undertaking a study titled **"Factors Associated with the uptake of Cervical Cancer Screening among Reproductive age Women in Tamale Metropolitan Assembly".**

The school will be very grateful if you could grant him the necessary support to facilitate the research process.

Thank you for the cooperation.

Yours Faithfully,

Dr. Abdulai Abubakari
(Head of Department)

HEAD OF DEP'T
DEP. OF GLOBAL & INTERNATIONAL HEATH
SCHOOL OF PUBLIC HEALTH
UDS - TAMALE

UNIVERSITY FOR DEVELOPMENT STUDIES

(School of Public Health)

P.O. Box 1883
Tamale, Ghana

Our Ref: UDS/MPH/0041/20

Your Ref:

February 28, 2022

Department of Global and International Health

To whom it may concern

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Thank you for the cooperation.

Yours Faithfully,

Dr. Abdulai Abubakari

(Head of Department)

HEAD OF DEP'T
DEP. OF GLOBAL & INTERNATIONAL HEATH
SCHOOL OF PUBLIC HEALTH
UDS - TAMALE

Department of Research &Development
Tamale Teaching Hospital

Tel: 03720- 00180
Our Ref: TTH/R&D/SR/165
Your Ref:

Box TL 16, Tamale
West Africa-Ghana
GPS: NT-0101-5330

22nd June, 2022.

To whom it may concern

CERTIFICATE OF AUTHORIZATION TO CONDUCT RESEARCH IN TAMALE TEACHING HOSPITAL

I hereby introduce to you **Mr. Sha-Aban Mustapha,** a Master of Public Health student from the University for Development Studies.

Mr. Sha-Aban has been duly authorized to conduct a study titled **"Factors Associated with Cervical Cancer Screening Uptake among Women in Tamale Metropolis.**

Please accord him the necessary assistance to enable him complete the study. If in doubt, kindly contact the Research Unit on the second floor of the administration block or on Telephone 0209281020. In addition, kindly report any misconduct of the Researcher(s) to the Research Unit for necessary action.

Upon completion, you are required to submit a copy of the final study to the Hospital.

Please note that this approval is given for a period of six months, beginning from 22th June 2022 to 22th December, 2022.

Thank You.

AMOAH JOYCELYN
(PRINCIPAL HEALTH RESEARCH OFFICER)
for DEPUTY DIRECTOR AND HEAD, RESEARCH & DEVELOPMENT

GHANA HEALTH SERVICE

Regional Health Directorate
Ghana Health Service
P O BOX 99
Tamale

Tel (233) (03720) 22912 22710
22146
Fax (233) (03720) 22941
Email rdhs.nr@ghsmail.org

OUR CORE VALUES
1. People-Centered
2. Professionalism
3. Team work
4. Innovation
5. Discipline
6. Integrity

My Ref No: GHS/NR/15-0165

Your Ref No:

14 March 2022

SHA-ABAN MUSTAPHA
SCHOOL OF PUBLIC HEALTH
UNIVERSITY FOR DEVELOPMENT STUDIES

RE: APPLICATION FOR PERMISSION LETTER TO CONDUCT A STUDY IN CENTRAL AND WEST HOSPITAL, TAMALE

I write to acknowledge the receipt of your letter dated 28th February, 2022. The office has granted you permission to undertake your study in the region. This permission is however subject to you getting approval from the Ghana Health Service Ethics Review Committee on the research topic **"Factors Associated with Cervical Cancer Screening Uptake Among Reproductive Age Women in Tamale Metropolis".**

You will be given an introductory letter to the specified facilities upon your submission of the ethical clearance approval letter from the Ghana Health Service Ethics Review Committee to this office.

DR. JOHN BERTSON ELEEZA
REG. DIRECTOR OF HEALTH SERVICE
NORTHERN REGION

UNIVERSITY FOR DEVELOPMENT STUDIES

School of public health

Department of global and international Health

P.O. Box 1883

Tamale, Ghana

Tel: +233(243210357)

February 18, 2022

Email: nimotaruth@uds.edu.gh

Our Ref: MDW/18/02/2022

Your Ref:……..

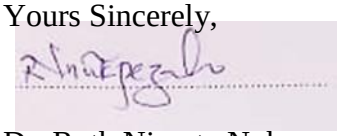
To whom it may concern

Dear Sir/Madam,

INTRODUCTION: MASTER OF PUBLIC HEALTH (MPH) STUDENT

I write to introduce to you SHA-ABAN MUSTAPHA (UDS/MPH/0041/20) a final year master of public health student of the Department of Global and International health, School of Public Health. As part of the requirements for graduation, this student is undertaking a study titled "**Factors Associated with Cervical Cancer Screening uptake among Women in Tamale metropolis**". We would be grateful if you could grant him the necessary courses to facilitate his research process.

Thank you for the cooperation.
Yours Sincerely,



Dr. Ruth Nimota Nukpezah

(Head of Department Preventive Nursing)