

THESIS ABSTRACT

Master of Public Health

Adventist University of Africa

School of Postgraduate Studies

Title: RELATIONSHIP BETWEEN CHANNELS OF COMMUNICATION, KNOWLEDGE, AND UTILIZATION OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN IN CHILEKA, RURAL BLANTYRE DISTRICT, MALAWI

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The alarmingly high prevalence of cervical cancer and deaths due to it among women in Malawi implores a solution to reduce the disease. In their efforts towards the same, the Malawi government and other stakeholders provide free screening services and also have strived to increase the knowledge of the disease among women in the country which other studies have suggested positively affects the utilization of the services. Despite these efforts, the level of utilization of the services is still low. The purpose of this study, therefore, was to assess the moderating effect of channels of communication on the relationship between knowledge of cervical cancer and the utilization of the services among women in Traditional Authority (T/A) Kuntaja, rural Blantyre district, Malawi.

This analytical cross-sectional study collected quantitative data using a questionnaire translated in Chichewa with closed-ended questions from 428 women

aged between 30-49 years selected from 19 villages from T/A Kuntaja using multistage sampling. Data were analyzed using descriptive statistics, one-way analysis of variance, Pearson product-moment correlation coefficient, and moderated regression analysis.

Findings revealed that the level of overall knowledge of cervical cancer among the women in the study area was 29% (very poor). The level of knowledge of the description and causes of the disease was average (79%) and above average (81%), respectively, whereas the level of knowledge of risk factors, symptoms, prevention, treatment, and side-effects of its treatment was very poor, ranging from 13% to 43%.

In general, channels of communication did not make a significant difference in women's knowledge of cervical cancer but it made a difference in their utilization of screening services. Knowledge of cervical cancer has a significant positive relationship with utilization of screening services but channels of communication have no significant moderating effect on this relationship.

The level of knowledge of cervical cancer among the women in the study area could be increased when effective communication channels, uniquely designed and taking into consideration women's specific socio-demographic characteristics. In addition, the information about cervical cancer communicated through these channels could enhance knowledge that can influence the utilization of screening services.

Keywords: channels of communication, knowledge of cervical cancer, utilization of cervical cancer screening services

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A thesis

presented in partial fulfillment
of the requirements for the degree
Master of Public Health

by

Charles Fatsani Gunsaru

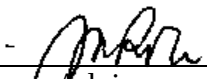
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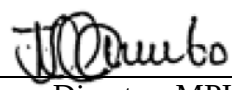
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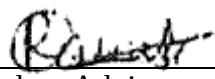
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Dedicated to my caring parents, loving wife, and wonderful children for believing in
me and being by my side. All the way through to this end.

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LIST OF ABBREVIATIONS

ACS	American Cancer Society
ASCO	American Society of Clinical Oncology
CCS	Canadian Cancer Society
CC	Cervical Cancer
CDC	Centers for Disease Control and Prevention
CECAP	Cervical Cancer Control Program
HPV	Human Papilloma Virus
NSO	National Statistical Office
NCI	National Cancer Institute
STIs	Sexually Transmitted Infections
T/A	Traditional Authority
VIA	Visual Inspection with Acetic Acid
WHO	World Health Organization

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CHAPTER 1

INTRODUCTION

Background of the Study

Among the cancers that are most common around the globe in women, cervical cancer (CC), which affects the entrance to the uterus from the vagina (cervix), is ranked as the fourth (WHO, 2018). Evidence seems to suggest that the incidences and the rate of mortality from it is increasing annually. In 2018, the World Health Organization (WHO) estimated that nearly 570,000 women around the world were diagnosed with the disease, with 311 000 women dying from it that year (WHO, 2018). In 2020, the number of new cases increased by approximately 6% to 604,000 whereas the number of deaths increased by about 10% to 342,000 (WHO, 2022a).

The incidence of CC is higher in countries with low- and middle-incomes (LMICs) and it keeps increasing than in developed countries. In fact, in LMICs, the cancer that is second most common is CC. In 2018, WHO estimated that over 264,350 of the 311,000 deaths (85%) from the CC that year occurred in LMICs (WHO, 2018). This estimation was increased in 2020 to 90% (WHO, 2022a). This means that 307,800 out of 342,000 deaths were in the less developed countries.

Among the LMICs, the incidence of CC and the number of deaths from it is higher in countries of the sub-Saharan Africa region than in those from other regions. CC causes more deaths in this region than any other type of cancer. In 2018, among all the deaths from cancer, CC caused over a fifth (21.7%) of them (Jedy-Agba et al., 2020).

Despite so many women dying from the disease, CC can be effectively controlled through screening (Kileo, Michael, Neke, and Moshiro, 2015). This is because when diagnosed early, CC is curable. In the developed countries, women are provided with screening programs that are population-wide hence 40% to 90% of the women in these countries utilize CC screening services (Jedy-Agba et al., 2020; Kileo et al., 2015). This is the reason why the number of deaths from the disease is less in these developed countries as women stand an increased chance of getting cured of it when it is diagnosed early.

On the other hand, under 5% of women in the countries that are less developed utilize screening services for CC (Kileo et al., 2015). In general, the low levels of utilization of the screening services in the less developed countries can be attributed to the unavailability of population-wide screening programs. The minimal utilization of screening services is also attributed to little or no knowledge of the prevention of the disease among the women (Jedy-Agba et al., 2020). In addition, coming from LMICs means that the women are mostly poor and experience inequitable access to health services. In these less developed countries, particularly in sub-Saharan Africa, more than 80% of the women mostly from rural areas seek screening services and medical care late usually after developing symptoms or signs of the disease (Assefa, Astawesegn, and Eshetu, 2019). This is the reason why the burden of CC is more pronounced in this region and other less developed countries.

Malawi has 84% of its population residing in rural areas, the majority of which are poor (Pittalis, Panteli, Schouten, Magongwa, and Gajewski, 2020). Being in sub-Saharan Africa and also being one of the least developed countries in the world, it is not spared from the burden of CC. In fact, in 2016, Malawi had the highest prevalence of deaths from the disease in the world (Msyamboza, Phiri, Sichali, Kwenda, and

Kachale, 2016). According to Bruni et al. (2021), it was estimated that in 2020, 4,145 women were diagnosed with CC in the country. Apart from being the most prevalent cancer among Malawian women in general, it is particularly most common in those between ages of 15 and 44.

Notwithstanding the fact that in Malawi some public health facilities offer the services for the screening of CC free-of-charge, the utilization of these services is relatively minimal (Hami, Ehlers, and Wal, 2014). In 2015, only 27.3% of women were able to utilize them which was less than the targeted 80% (Pittalis et al., 2020). This is the most probable reason why the country has the highest number of new cases of the disease and deaths from it in the world.

The focus of this study was to determine the women's knowledge of cervical cancer and its screening, the channels through which these are communicated, and their utilization of CC screening services, as well as the relationship between knowledge and utilization. In particular, the study assessed the moderating effect of channels of communication on this relationship. Ultimately, the study findings will inform recommendations regarding the most effective channel of communication that can increase the knowledge of CC and at the same time promote increased use of the screening services by the women in Traditional Authority (T/A) Kuntaja, in the rural Blantyre district, Malawi.

Statement of the Problem

The high prevalence of CC and its mortality rate among women in Malawi is alarming. The situation begs for a solution to reduce the disease, possibly eliminate it. Despite efforts of the Malawi government and other stakeholders towards the same by raising awareness and providing free screening services, there is little evidence to suggest that this is being achieved (Hami et al., 2014). As noted by Maseko, Chirwa,

and Muula (2015), this could be due to a lack of knowledge of CC and the importance of utilizing screening services among women.

Compounding the above is the fact that the disease is most prevalent among poor women. T/A Kuntaja's area which is part of the rural Blantyre district has 43.9% of its population regarded as poor and over half of this population (52%) are women. It was the aim of this study, therefore, to assess why despite such efforts there has been little progress. In particular, the study concentrated on the role of channels of communication in ensuring that the women have the necessary knowledge of CC which would influence their utilization of the free screening services that are available in Malawi.

Research Objectives

The main aim of the study was to assess the relationship between knowledge of CC and utilization of CC screening services and the moderating effect of channels of communication on this relationship among women aged 30- 49 years of T/A Kuntaja, in rural Blantyre, Malawi.

Specifically, the objectives include:

1. To identify the channels of communication through which knowledge of cervical cancer and its screening is communicated to the women of T/A Kuntaja, in rural Blantyre, Malawi.
2. To assess the level of knowledge of cervical cancer and its screening among the women of T/A Kuntaja, in rural Blantyre, Malawi.
3. To assess the level of utilization of cervical cancer screening services among the women of T/A Kuntaja, in rural Blantyre, Malawi.
4. To determine whether the channels of communication through which knowledge of cervical cancer and its screening is communicated makes a difference in the level of knowledge of cervical cancer and its screening by the women of T/A Kuntaja, in rural Blantyre, Malawi.
5. To determine whether the channels of communication through which knowledge of cervical cancer and its screening is communicated makes a difference in the

level of utilization of screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi.

6. To assess the relationship between the level of knowledge of cervical cancer and the utilization of screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi.
7. To assess the moderating effect of channels of communication on the relationship between the level of knowledge and utilization of screening services among the women of T/A Kuntaja in rural Blantyre, Malawi.

Hypotheses

The study tested the following null hypotheses:

Null Hypothesis 1

The channels of communication through which knowledge of cervical cancer and its screening is communicated makes no significant difference in the level of knowledge of cervical cancer and its screening acquired by the women of T/A Kuntaja, in rural Blantyre, Malawi.

Null Hypothesis 2

The channels of communication through which knowledge of cervical cancer and its screening is communicated makes no significant difference in the level of utilization of screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi.

Null Hypothesis 3

There is no significant relationship between the level of knowledge of cervical cancer and the utilization of screening services by the women of T/A Kuntaja in rural Blantyre, Malawi.

Null Hypothesis 4

Channels of communication have no significant moderating effect on the relationship between the level of knowledge and utilization of screening services among the women of T/A Kuntaja in rural Blantyre, Malawi.

Theoretical Framework

According to Rural Health Information Hub (2018), the Health Belief Model is commonly used in explaining health behavioral changes in individuals. As a theory, the general principle of it is that behavioral change happens as a result of acquiring knowledge (Rural Health Information Hub, 2018). Six main components form the foundation of the Health Belief Model. These include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Schiavo, 2013).

The perceived severity is a person's impression of how serious a particular sickness or health issue could permanently damage physical or mental functions. It could also how it could be life-threatening and hence deserving of consideration. Perceived benefits are the benefits that an individual believes will result from taking advised steps to eventually lower their chance of developing a disease's severity, morbidity, and death. The person's assessment of the costs of and barriers to implementing the suggested activities are called the perceived barriers. Cues to action are social or public events that might highlight the urgency of taking action. The person's belief in his or her capacity to carry out and maintain the advised behavior with little or no assistance from others is called self-efficacy.

In particular, the Health Belief Model postulates that for target audiences to adopt healthy habits, they must be aware of their risk of developing serious or life-threatening illnesses and believe that the advantages of changing their behavior

outweigh any potential drawbacks or other disadvantages (Schiavo, 2013). The perceived susceptibility, severity, benefits, and barriers are envisaged from acquiring knowledge of a particular disease or health issue. This knowledge is communicated to the target audience in form of messages using different channels of communication (Rural Health Information Hub, 2018).

The Health Belief Model suits this study perfectly. The women's acquired knowledge of cervical cancer according to the model should bring change in the utilization of its screening by women. This is consistent with the considerable evidence that the knowledge of cervical cancer that women acquire is directly related to their utilization of screening services for the disease (Kassie et al., 2020; Mengesha, Messele, and Beletew, 2020). According to Geremew, Gelagay, and Azale (2018), knowledge of cervical cancer includes the description, risk factors, symptoms, prevention, treatment, and associated side effects of the disease. From such knowledge, women should be able to develop the six components of the model which in turn would influence their utilization of the screening services.

Conceptual Framework

The conceptual framework for this research was made up of three types of variables (independent, dependent, and moderating) as presented in figure 1.

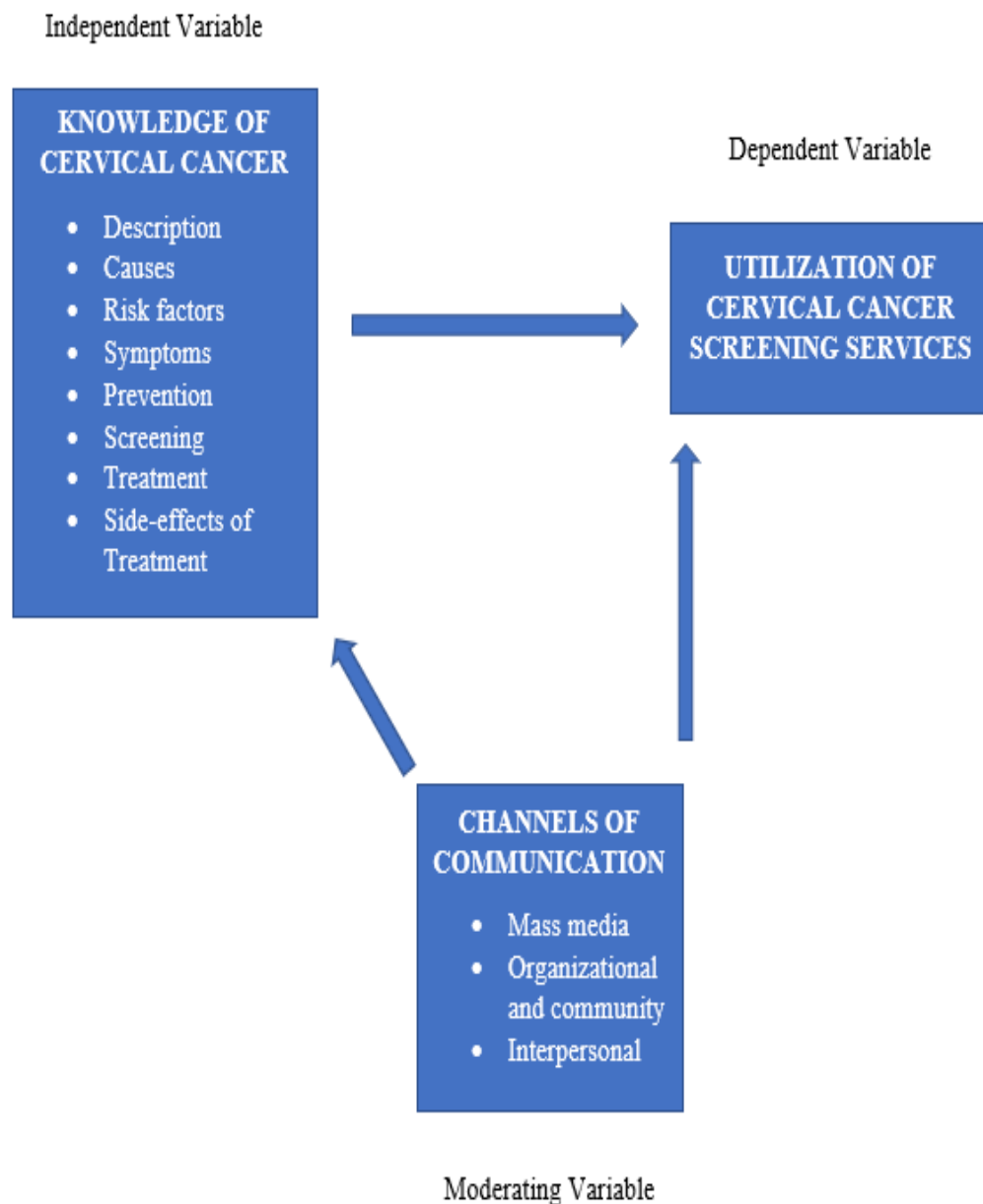


Figure 1. Conceptual Framework
Source: Author, 2022.

Significance of the Study

It is important that women have the knowledge of CC and know the importance of utilizing the screening services that are there for the disease. These are some of the crucial components of CC prevention and control (Maseko et al., 2015). It

is therefore equally important that the channels of communication through which such knowledge is imparted to the women be effective and efficient. Communication channels that are effective and efficient, ensure that the women targeted with the knowledge of CC and that of its screening services get the information as intended and the objective for imparting that information is achieved, which in this case is utilizing the screening services.

By assessing the channels of communication that are currently being used in Malawi, the study wanted to determine whether they are indeed effective and efficient or they require improvement. It recommends that channels that have been deemed to be effective and efficient for use in the fight against the menace that is CC. For those that were found lacking, ways of improvement are recommended. These findings are significant in ensuring that more women are utilizing screening which creates an opportunity for diagnosing the disease early where possible hence increasing the likelihood of curing it or preventing it in cases where the diagnosis is negative.

The first beneficiary of the study could be the Malawi government, particularly the Ministry of Health which is at the forefront of the fight against CC by providing free screening services. By using the findings of the study, the government will be able to increase the awareness of CC, which in turn would allow for more women to be screened and ultimately decrease the burden of the disease on the country. The Malawi government will adopt the most effective channels of communication according to the study in disseminating the information about the disease and the importance of utilization of screening services as intended and that their goals are achieved.

Apart from the Malawi government, other institutions that are involved in health promotion and the well-being of rural Malawi women will be able to apply the

findings of this study. They will adopt the channels that are effective in raising knowledge levels and disseminating health information.

Scope and Limitations of the Study

Though rural Malawi is expansive, the study was conducted in T/A Kuntaja, rural Blantyre district which is a representative sample of rural Malawi. Just as in any typical rural area in Malawi, in this study area, poor women are the majority of its population. The study targeted these women, in particular those aged between 30 to 49 years old, which according to the National Cervical Cancer Control Strategy 2016-2020, is also the age group that is targeted by the screen-and-treat program that is being implemented by the Malawi government as a secondary prevention intervention combating CC (Government of Malawi, 2017). The study focused on the level of CC knowledge that the women have, the channels through which they got the knowledge, and their utilization of CC screening services. The aim was to assess the role of the channels in imparting the knowledge to the women which in turn influences their utilization of the services. The study gathered quantitative data through a questionnaire with closed questions that was translated into Chichewa which is the local language in the area of study.

This study was constrained to some extent by the unwillingness of women to discuss issues related to CC as they considered it a taboo. This is because the disease develops in the cervix (the entrance to the uterus from the vagina) of the woman. To counter such unwillingness, the researcher engaged female research assistants with whom the participants were able to easily relate and openly discuss the subject.

The study was also constrained by the likelihood of interviewer bias. Considering that the study area is rural and the women in the area are generally poor with low levels of education, the questionnaire was translated into Chichewa. Since it

had scientific content that could not be translated precisely into Chichewa word for word, the research assistants for the study were likely to distort the questions and the responses from the participants. In the mitigation of such bias, the research assistants were trained on how to avoid distortion of responses from participants and manage their expectations or opinions in order to maintain the objectivity of the study.

Operational Definition of Terms

There some are terms that are central to this study. Though they might be defined differently in other literature, in the context of this study they are defined as below:

Cancer: A group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body

Cervical cancer: A type of cancer that occurs in the cells of the cervix — the lower part of the uterus that connects to the vagina.

Channel of communication: a system or method that is used for sharing information amongst people.

Health promotion: a behavioral social science that draws from the biological, environmental, psychological, physical, and medical sciences to promote health and prevent disease, disability, and premature death through education-driven voluntary behavior change activities.

Human papillomavirus (HPV): A sexually transmitted infection, various strains of which play a role in causing most cervical cancer.

Knowledge of cervical cancer: Comprehensive knowledge of cervical cancer includes knowing risk factors, prevention, treatment, and anything about the disease.

Knowledge of cervical cancer screening services: Comprehensive knowledge of cervical cancer screening which includes knowing what the screening

involves, the different types of tests used, the importance of screening, side effects, where to access the services, costs, and anything about the services.

Low- and middle-income countries (LMICs): These are countries having low-income or middle-income economies with their Gross National Income (GNI) per capita of \$1,085 or less in 2021.

Screening services: tests available to all women at risk of cervical cancer, most of whom will be without symptoms to detect precancerous changes, which, if not treated, may lead to cancer.

Utilization of cervical cancer services: getting tested for the risk factors of cervical cancer and having access to any associated services.

CHAPTER 2

REVIEW OF LITERATURE

This chapter reviews the literature related to this study. Articles from scientific publications and journals dealing with CC in general and the relationship between knowledge of it among women and their utilization of its screening services are reviewed. Regarding the latter, the focus was on rural women in sub-Saharan Africa, narrowed down to Malawi. The chapter discusses the channels of communication and the nature of CC which includes a description of the disease, its risk factors, symptoms, prevention, and treatment. It also discusses the level of cervical cancer knowledge among women and the screening of the disease. The chapter then concludes with a discussion on the influence of knowledge of CC on the utilization of screening services as moderated by the channels of communication.

Channels of Communication

There are several definitions of health communication available in the literature. Bernhardt (2004) defined it as the practice of educating, persuading, and inspiring individuals, groups, and the general public about significant health issues. Feeley and Chen (2013) described the skill and means of enlightening, prompting, and encouraging individuals and communities to make decisions that promote health as health communication. For Dlima (2021), health communication is the scientific creation and deliberate transmission of pertinent, correct, intelligible, and accessible health information to and from intended audiences in order to improve public health. Common in these definitions is that health communication involves the well-thought

transmission of well-crafted health messages to the public with the aim of positively their improving health. In regards to this study, health communication entails informing the women about CC to promote their utilization of its screening services

Health communication has three main components including the health message to be communicated, the channel of communication to be used, and the target audience for the message. The information transmitted to the audience can be oral or written (Rural Health Information Hub, 2018). The means through which health communication sends messages to the intended audiences to achieve the intended health outcomes are called communication channels (Schiavo, 2013). These channels include health talks, health visits, public service announcements, health fairs, mass media campaigns, and newsletters (Rural Health Information Hub, 2018). When used effectively, health messages communicated through the channels will mobilize communities and their leaders to tackle health issues by embracing health behaviors and practices (Schiavo, 2013). In addition, channels of communication can be used in advocating for governments and non-governmental organizations to act on a particular health issue like Cervical Cancer.

According to WHO (2017), the channels of communication can be categorized into three. The categories are mass media, organizational and community, and interpersonal. Mass media channels of communication include television, radio, newspapers, magazines, outdoor and transit advertising, social media, direct mail, and websites. This category of channels has a wider reach to audiences and can increase awareness of particular health issues. Organizational and community channels include health fairs, health talks and visits, and community meetings. These channels are aimed at communities or groups of people that have some common denominator like location or interest. Interpersonal channels are those that involve one-on-one

conversations. These are most useful in changing attitudes and broader adoption of behaviors of health.

Several considerations should be made when choosing communication channels to achieve effective health communication (WHO, 2017). Effective, in this case, means successfully sending the right message to the right audience and achieving the intended change in health behavior. It is recommended that channels used in communicating the information be chosen in consideration of their ability to reach as many people as possible. Another consideration should be the ability of the channel to help the audience remember the information easily. In addition, channels of communication should be chosen because they will enhance action.

In Malawi, mass media particularly radio, television and newspapers, is used to some extent in communicating cancer-related messages to the public (Ngwira, Zuo, Mkandawire, and Kondowe, 2020). However, in their study, Ngwira et al. (2020) found out that CC was less reported than breast cancer despite CC having more morbidity and mortality rates in the country.

Since Malawi has electricity challenges, the radio which is not limited to being powered by it can play a crucial role in communicating CC knowledge to the public, particularly rural women. Radio has also added advantage compared to newspapers as it even caters to those who cannot read which would usually be the case with the majority of rural women (National Statistical Office, 2019).

Knowledge of Cervical Cancer

Acquiring comprehensive knowledge of CC entails knowing the nature of the disease (Geremew et al., 2018). The nature of CC includes its risk factors, symptoms, prevention, treatment, and associated side effects. According to American Society of Clinical Oncology (2022a), risk factors are issues or conditions that increases the

probability of being infected by a disease. Symptoms and signs are the body's means of notifying the person that they have an infection (American Society of Clinical Oncology, 2022c). The WHO Regional Office for the Eastern Mediterranean defines disease prevention as ways of reducing the burden caused by the disease and decreasing the likelihood of a person getting the disease (American Society of Clinical Oncology, 2022c). These ways can be through the effort of either the whole population or the individual. They also can be targeted at ensuring that the disease does not appear in the first place or diagnosing it early to ensure that it is dealt with in time which increase the chances of curing the disease.

The treatment of a disease involves the use of medication or procedures to deal with a disease in order to stop its symptoms and signs and where possible erase the disease completely. Sometimes these medications and procedures can cause negative reactions in the body. These negative reactions are called side-effects of the treatment.

Thus, only when a person knows all these aspects of the nature of CC, then they would be said to have comprehensive knowledge of it. By possessing such comprehensive knowledge of the disease, a person or a population would have the necessary arsenal to deal with a disease. It would be a matter of choice whether to use the arsenal effectively or not,

Description of Cervical Cancer

According to the National Cancer Institute (2021), the uncontrollable growth of cells in a body is called cancer. This growth becomes uncontrollable due to genetic mutations that affect cell functioning particularly cell growth and division. These mutations, also called cancer drivers, mainly occur to DNA repair genes, tumor suppressor genes, and proto-oncogenes (National Cancer Institute, 2021). DNA repair

genes mutations result in changes of other genes like replications and obliterations of parts of their chromosomes which in turn could make cells cancerous. When tumor suppressor genes mutate, they may cause uncontrollable division of cells. Cells that are suppose die or not to grow will survive and grow when there are mutations to proto-oncogenes.

Cancers are generally named depending on the tissue or part of the body from which they have developed. Cervical cancer as the name suggests is when the cells in the tissues of cervix grow uncontrollably (National Cancer Institute, 2021). It particularly affects the entrance to the uterus from the vagina. According to the Centers for Disease Control and Prevention (2022), the human papilloma virus (HPV) is the main cause of almost all cervical cancers particularly when an infection of the HPV is long-lasting. HPV is commonly transmitted from one person to another through sex. While the risk for CC is present in all, the disease is usually common in women aged above 30 (Centers for Disease Control and Prevention, 2022).

The WHO (2018) acknowledges that globally among women, the fourth most common cancer is CC. In Malawi, according to Gerstl et al. (2022), out of every 100,000 individuals, there are 67.9 who have CC per year. This is the second highest rate of CC incidences globally. The number of deaths in the country per year from the disease is 51.5 per 100,000 individuals. This rate of mortality is second to none worldwide. Apart from HPV, women in Malawi are more likely to get CC due to the high prevalence of HIV in the country.

Risk Factors of Cervical Cancer

The recognized risk factors that increase the likelihood of developing the disease include HPV infection, low socio-economic status, smoking, early marriage (before age 18 years), first intercourse at young age, poor personal hygiene, genetics,

age, multiple sexual partners or spouse, use of oral contraceptives, genital herpes, using diethylstilbestrol (DES) during pregnancy, immune system deficiency, history of sexually transmitted infections (STIs) and multiple childbirths (American Society of Clinical Oncology, 2022a; Kashyap, Krishnan, Kaur, and Ghai, 2019; Taneja et al., 2021).

The American Society of Clinical Oncology (2022a) identifies HPV as the primary risk factor of CC. A person is more likely to be infected by HPV when they engage in sexual intercourse with many partners or start it early in their life. People with low socio-economic status are most likely not to have access to screening services for CC and healthcare in general. According to Su et al. (2018) smoking increases the chance of being infected by HPV by weakening the immune system. When a person has genes associated with getting rid of an HPV infection which have mutations that were inherited, they are more likely to have HPV infection frequently which render them more susceptible to developing CC (Su et al., 2018).

Women aged above 30, particularly those between 35 and 44 are more likely to develop CC than those that are aged below 20 (American Society of Clinical Oncology, 2022a). Though studies indicate an increase probability developing CC in women who take pills to control birth, American Society of Clinical Oncology (2022a) recommends for more studies to establish the exact connection between the two. Women born from mothers who used diethylstilbestrol during pregnancy to ensure they did not miscarry, have a high risk of developing CC (American Society of Clinical Oncology, 2022a).

In Malawi, most of these risk factors are prevalent. For example, a study by Rudd et al. (2017) found that 29% of women that participated in it had more than three sexual partners. In addition, 15% of the women had contracted STIs before and

52% had multiple childbirths. Furthermore, high prevalence of HIV/AIDS in the country is also a risk factor (Gerstl et al., 2022; Pittalis et al., 2020). 4.8% of women in Malawi are infected with HPV hence they are at risk of contracting CC (Gerstl et al., 2022).

Symptoms of Cervical Cancer

According to WHO (2021) and the National Cancer Institute (2021), CC in its early stages usually does not display any symptoms which makes it difficult to detect CC during these stages. However, the symptoms start to manifest when the disease spreads to other areas (American Society of Clinical Oncology, 2022c). The first symptom of CC that is generally captured during screening is the existence of precancerous lesion (WHO, 2021).

When they start to show up, the other early symptoms include bleeding in the vagina that is not normal which happens between periods, after sex or after menopause; discharge from the vaginal that is continuous; and longer than usual periods that are heavy (WHO, 2021). The National Cancer Institute (2022) also identifies pain in the pelvis and when having sex as early symptoms of CC.

There are several known general signs and symptoms of CC that women experience when CC has progressed or is advanced. According to The National Cancer Institute (2021), some of these advanced CC symptoms are similar to those of the early stages. These include pain in the lower abdomen, post-coital bleeding, post-menopausal bleeding, urinary urgency, abnormal vaginal discharge, foul smelling discharge, weight loss, intermenstrual bleeding, and bleeding in the vagina (Taneja et al., 2021). In addition, a woman may also experience pain during intercourse (American Society of Clinical Oncology, 2022c; WHO, 2021). The National Cancer Institute (2021) further identifies movements of the bowel that are painful, urinating

blood or feeling pain when urinating, backache that is dull, legs swelling abdominal pain and tiredness as some of the symptoms of advanced CC.

Stages of Cervical Cancer

The level to which the cervical cancer has developed and spread to other parts in the body is referred to as a stage (Lee, 2022; National Cancer Institute, 2022b). According to a staging system by the International Federation of Gynecology and Obstetrics (FIGO), CC has four stages (Lee, 2022; National Cancer Institute, 2022b). These include stage I, II, III and IV. However, there is also stage 0 even though the FIGO system does not recognize it (Lee, 2022).

Stage 0 of CC is when the cells of the cervix are mutating such that the probability of them evolving into cancer increases (Lee, 2022). These cervix conditions are called precancerous because the cancer is not developed yet though the likelihood of developing is high. If these conditions are ignored and left untreated, then CC develops.

When CC has developed but is only present and limited to the cervix, it said in stage I (National Cancer Institute, 2022b). Stage I is characterized by the microscopic size the tumor (Lee, 2022). Depending on how big the tumor and its depth, stage I is further categorized as stage IA and IB (National Cancer Institute, 2022b). According to Lee (2022), stage IA is further categorized into sub-stages 1A1 and 1A2 with the depth of a stage IA tumor is equal to or less than 3 millimeter and its width is equal to or less than 7 millimeter while for stage IA2 the depth is between 3 and 5 millimeters and width is equal to or less than 7 millimeters. Stage IB is characterized by a tumor that is larger than those of stage 1A. This stage is also further categorized into sub-stages. However, the National Cancer Institute (2022a) identifies three sub-stages while CCS (2022) identifies two. According to the National Cancer Institute (2022a),

the three sub-stages include stage IB1 which has a tumor with width equal to or less than 2 centimeters and above 5 millimeters depth; stage IB2 characterized by a tumor that is has width between 2 and 4 centimeters; and stage IB3 with a tumor that is more than 4 centimeters wide. On contrast, the sub-stages of stage IB, according to Lee (2022), include stage IB1 which combines stages IB1 and IB2 of the NCI stages with its tumor having a width that is equal to or less than 4 centimeters; and stage IB2 which is the same as stage IB3 of the NCI stages that has a tumor with a width more than 4 centimeters.

Stage II of CC is when the disease is no longer limited to cervix only but rather it has metastasized particularly to upper part of vagina or uterus tissues (National Cancer Institute, 2022b). The stage is also further categorized into stage IIA and IIB. The distinction between these stages is in that stage IIB the disease has metastasized as far as the uterus tissues while in stage IIA it is limited to the upper part of vagina (Lee, 2022; National Cancer Institute, 2022b). Stage IIA is also split into sub-stages IIA1 and IIA2 with the former having a tumor that is equal to or less than 4 centimeter while the later has a more than 4 centimeters wide tumor.

When CC has metastasized to the lower part of the vagina or the wall of the pelvis or has affected the kidneys or lymph nodes, it said to be in its stage III (Lee, 2022; National Cancer Institute, 2022b). The National Cancer Institute (2022a) differs from Lee (2022) in their further categorization of this stage. The NCI identifies three sub-stages which are stage IIIA, IIIB, and IIIC while CCS only has stage IIIA and IIIB. For both the NCI and CCS, stage IIIA is when the disease has metastasized to lower part of the vagina but not the walls of pelvis. Stage IIIB for CCS is when the CC has metastasized to the walls of the pelvis and may also have affected the kidneys or the lymph nodes (Lee, 2022). On the other hand, the NCI characterizes stage IIIB

as when the CC has metastasized to as far as the walls of pelvis but may only affect the kidneys (National Cancer Institute, 2022b). According to National Cancer Institute (2022a), stage IIIC which is when the disease is not only present in the walls of the pelvis but also affects the lymph nodes. Stage IIIC is further categorized in stage IIIC1 and IIIC2 with the former stage being when the cancer affects not only the walls of the pelvis but also its lymph nodes while in the later stage the lymph nodes affected are close to the aorta in the abdomen (National Cancer Institute, 2022b).

Stage IV of CC is characterized by the disease metastasizing to the rectum, bladder or other body parts (Lee, 2022; National Cancer Institute, 2022b). Both National Cancer Institute (2022a) and Lee (2022) further split the stage into stages IVA and IVB. In stage IVA the disease is metastasized beyond the pelvis up to the rectum or the bladder while stage IVB the metastasis has reached other parts of the body such as bones, lungs or liver.

In more general terms, the stages of CC are also sometimes categorized into three broad stages. These stages include early stage, locally advanced stage, and advanced stage (Lee, 2022). The early stage encompasses all the sub-stages of stage I and stage IIA. In other words, the early stage of CC is when the disease is limited to the cervix and the upper vagina. The locally advanced stage encompasses stage IIB, all the sub-stages of stage III, and stage IVA. In this stage the disease has metastasized to the uterus tissues, lower part of the vagina, the wall of the pelvis, bladder, rectum, and has even affected the kidneys or lymph nodes. The advanced stage is the same as stage IVB where the disease has metastasized to other parts of the body such as bones, lungs or liver.

Prevention of Cervical Cancer

Cervical Cancer is a disease that be prevented and it can be cured when detected in its early stages (National Cancer Institute, 2022a). Prevention of CC as recommended by World Health Organization is effective when done using an approach that is comprehensive (WHO, 2022a). Such a comprehensive approach to CC prevention covers many disciplines. These disciplines include educating and mobilizing the society on CC, HPV vaccination, screening for the disease, treating it and provision of palliative care (WHO, 2022a).

The preventive measures for CC are categorized into three categories. These categories are primary, secondary and tertiary prevention (WHO, 2022a). According to the American Society of Clinical Oncology (2022a), the primary means of preventing CC is HPV vaccination of girls aged 9 to 14 years but it also be used by those aged up to 26 years. HPV vaccination an effective measure which is commended as safe. The WHO (2022b) also identifies other primary prevention measures which include provision of information on health, comprehensive education on sex that is specially tailored to the culture and age of the targeted audience (girls and boys), promoting use of condoms, and promotion of circumcision for males.

Apart from these primary means, the reduction of the risk factors will also enhance the prevention of the disease. Some of the measures that can reduce the risk factors include delaying the first sexual intercourse until 18 years or later, having only a single sex partner, using condoms during sexual intercourse, having sexual intercourse with men who do not have multiple sexual partners, never indulging in sexual intercourse with men infected with warts in their genitals, and stopping smoking (American Society of Clinical Oncology, 2022c).

The secondary prevention measures for CC include regular screening for the disease and treatment when it is detected (WHO, 2022b). These measures are generally targeted at women aged 30 years and above. The only exception is for women living with HIV who are screened from 25 years onwards. The principal tertiary prevention measure for CC is treatment of its aggressive forms. This is targeted at all those that have invasive CC and need the treatment.

In Malawi, as part of efforts to prevent CC, the Government through the Ministry of Health introduced an HPV vaccination pilot project in 2016 Government of Malawi (2017). The project was piloted in Rumphi and Zomba districts targeting girls that were aged between 9 and 13 years. It demonstrated that HPV vaccination is achievable in Malawi as there was coverage of over 90% in both of the pilot districts.

Treatment of Cervical Cancer

Cervical cancer can be treated differently depending on three factors. These factors include the stage of development of the disease, the underlying health conditions of the patient, and the preference of treatment by the patient (Mayo Clinic, 2021). According to American Cancer Society (2012), the factor that is paramount and comes first in considering treatment options is the stage of development of the disease. The American Society of Clinical Oncology (2022c) identifies five common types of treatment for CC. These are surgery, radiation therapy, chemotherapy, targeted therapy, and immunotherapy.

Surgery is mostly used to treat CC in its early stage of development (Mayo Clinic, 2021). Three procedures can be used to perform this treatment. Surgery can involve cutting away cancer, removing the cervix, or removing the cervix and uterus. When the cancer is small, does not affect the cervix, and the patient intends to become pregnant in the future, then cutting away the cancer is the preferred procedure.

Cervical cancer affects the cervix and tissue surrounding it and yet if the patient has plans of becoming pregnant in the future, then trachelectomy (removal of the cervix) is the option. In the case where the cervix and the uterus are both affected and hence have to be removed then a hysterectomy procedure is used.

The killing of cancer cells or inhibiting their growth using beams of energy that are high-powered like x-rays, is called radiation therapy. This therapy, according to the National Cancer Institute (2022d), can be provided in two forms to treat cancers that have advanced locally. These are external and internal radiation therapy. External radiation therapy targets the area affected by cancer with beams of radiation from outside the body while internal radiation therapy places radioactive materials close to the affected area inside the body.

The use of chemicals in medical drugs to kill cancerous cells is called chemotherapy. The means of administering these chemicals can be either by injection or oral in form of pills (National Cancer Institute, 2022d). Chemotherapy is used to treat advanced cancers. The doses of the chemical will increase with the advancement of cancer (Mayo Clinic, 2021). Sometimes chemotherapy is also used together with radiation therapy.

In advanced stages, cancer can also be treated by killing the cancerous cells using drugs that specifically targeted them. The drug focus on specific aspects of cells that affect their survival and growth (American Cancer Society, 2012b). These aspects could be in the genes, proteins, or the tissue environment of the cells. By targeting specific cells, this type of treatment reduces the likelihood of damaging the unaffected cells. Both the American Society of Clinical Oncology (2022c) and Mayo Clinic (2021) acknowledge that targeted therapy can be used together with chemotherapy.

Immunotherapy as a cancer treatment involves revitalizing the immune system of a patient to combat cancer. The treatment is also known as biologic therapy (American Society of Clinical Oncology, 2022d; National Cancer Institute, 2022a). According to Mayo Clinic (2021), this treatment is suitable for CC that is advanced or resistant to other types of treatment. The revitalization of the immune system uses substances that are body made or laboratory-made.

As part of the Cervical Cancer Control Program (CECAP), in Malawi, women who have been screened for CC and have tested positive are treated using cryotherapy (Pittalis et al., 2020). Cryotherapy is a type of surgery that involves freezing the cancerous cell from the cervix before removing them. According to the Government of Malawi (2017), in 2015, 32 facilities had functional cryotherapy in the country. In that year, only 41.2% (896) of all the women (2,177) that tested positive for CC through visual inspection with acetic acid (VIA) tests, were provided cryotherapy.

Side effects of treatment of cervical cancer. The treatment for CC has some notable side effects depending on the type of treatment which can either be short or long term. In the case of surgery for the disease, the severity of side effects depends on the type of procedure and the extent of it (American Society of Clinical Oncology, 2022d). Some of the commonest of these include bleeding, infection, and damage to the bladder and colon. When the surgery involves hysterectomy (the removal of the uterus), it can cause infertility (American Society of Clinical Oncology, 2022d).

The American Cancer Society (2021) recognizes tiredness, stomach upset, diarrhea, nausea, vomiting, changes to the skin, irritation to the bladder, pain in the vagina, changes in the menstrual cycle, and anemia as some of the short-term side effects of treating CC using radiation therapy. The long-term side effects of this treatment include pain when having sexual intercourse, dryness in the vagina,

bleeding and narrowing of the rectum, fistula, weakening of the bones, and severe swelling of the legs (American Cancer Society, 2021d).

Chemotherapy for CC has short-term side effects that include sores in the mouth, fatigue, losing hair, appetite loss, nausea, vomiting, increased infection risk, diarrhea, shortage of white blood cells and blood platelets, and anemia (American Cancer Society, 2021d, 2021b). The long-term side effects of the use of chemicals to kill CC cells are changes in the menstrual cycle and peripheral neuropathy (American Cancer Society, 2021d). The changes to the menstrual cycle could in some instances cause premature menopause and infertility. In rare cases, chemotherapy could also cause kidney damage and loss of hearing (American Society of Clinical Oncology, 2022c).

Targeted therapy has hypertension, fatigue, and nausea as some of the side effects that are common when it is used to treat CC (American Cancer Society, 2021b). There also are other rare side effects nevertheless being more serious. These according to the (American Cancer Society, 2021b), include bleeding problems, clotting of blood, problems in the healing of wounds, heart failure, and fistula.

Just as the other four types of treatments, immunotherapy for CC have side effects which are common that include reactions on the skin, diarrhea, nausea, fever, tiredness, pain in the joints or muscles, appetite loss, changes in body weight, and constipation (American Society of Clinical Oncology, 2022c; National Cancer Institute, 2022d). The rare but serious side effects are a result of malfunctioning of the immune system induced by the drugs used in the treatment. These include problems in organs like the liver, intestines, lungs, kidneys, and hormonal glands (American Cancer Society, 2021a).

Level of Knowledge of Cervical Cancer among Women in Malawi

In general, women in low- and medium-income countries have low levels of knowledge of CC than women in developed countries (Campbell, Cubie, and Weller, 2019). In particular, countries in sub-Saharan Africa, when compared with other regions of the world, appear to have significantly low levels of knowledge (Wakwoya, Gemechu, and Dasa, 2020). (Weng, Jiang, Haji, Nondo, and Zhou, 2020) in their study, identified educational levels and family income as some of the factors that influences the level of knowledge of CC among women. Women with low levels of education were found to have low levels of knowledge of CC. Similarly, women with the level of family income had low level of knowledge of CC. This probably explains the high levels of knowledge of CC in developed countries where generally the women have higher levels of education and families have higher income as compared to LMICs where the level of education among women and family income is lower.

According to Chadza et al. (2012), in Malawi also women had limited comprehensive knowledge of CC. However, Gerstl et al. (2022) noted that the majority of women have heard of CC as a disease yet their knowledge about its symptoms and screening of it was low among them. In addition, women knew less about HPV vaccination as a means of preventing CC (Rudd et al., 2017). Bula et al. (2022) also pointed out that knowledge of CC screening was particularly low among women in rural Malawi. Just as other LMICs, low level of education and family income is also a contributing factor to such low levels of knowledge of CC in Malawi.

Cervical Cancer Screening

Screening for CC involves searching for cancer in the cervix of a woman before she is displaying any signs or symptoms of the disease (National Cancer

Institute, 2021). The reason for searching for CC before there are symptoms is that if it is found then, it would be in its early stages of development. Since CC in its early stages of development is curable, screening then provides the best possible chance of preventing and controlling the disease (Kileo et al., 2015).

American Society of Clinical Oncology (2022b) identifies three tests and procedures that are used for screening for CC. These include Pap test, HPV test, and Visual inspection with acetic acid (VIA). The most commonly used test among these is the Pap test which is also known as a Pap smear. It is commonly used because it assesses cells from the cervix if any early changes in them could indicate the development of CC. The HPV test, as the name suggests, searches for the presence of the HPV which is recognized to be the cause of CC. The tests are done on cells collected from the cervix or the vagina. The Pap and HPV tests are sometimes done concurrently (American Cancer Society, 2021c). VIA screening involves manually inspecting the cervix for abnormalities. This test uses vinegar which is applied to the cervix. After applying the vinegar, abnormalities in the cervix will turn white.

According to the guidelines by the ACS on the prevention and early detection of CC at the age of 25, every woman who has not had her cervix removed must start having regular screening for the disease (American Cancer Society, 2021c). These guidelines also prescribe that women aged between 25 and 65 need to have either an HPV test every 5 years or a Pap test every 3 years. After reaching 65, women can only continue screening for CC if they were not doing so in the past 10 years or if the results were not normal during this period.

Since 2004, Malawi has had a program for screening CC in women between the ages of 30 to 45 years which provides the service for free (Msyamboza et al., 2016). This program is called the CECAP. The primary means of testing for the

program was VIA. Initially, the program was only in one district Mulanje. According to the Government of Malawi (2017), there were 129 functional facilities in the country that were providing CC screening using VIA tests in 2015. Out of the 391 CC screening providers that were there in 2015, 69.6% (272) of them were active. As a means of ensuring the improvement of the program, the Malawi government developed a new strategy called the National Cervical Cancer Control Strategy 2016 2020, in which the age of the targeted women was recommended to increase to 30 -49 years (Government of Malawi, 2017).

Utilization of Cervical Cancer Screening Services

The utilization of screening services for CC by women is higher in developed countries than in low-and medium-income countries. 63% of women in developed countries utilize the services while in low-and medium-income countries only 19% of women utilize them (Yimer et al., 2021). In sub-Saharan Africa, the utilization of such services by women was even lower (12.87%) (Yimer et al., 2021). In 2004, Malawi Government through the National Cervical Cancer Program targeted 80% of all women that are aged between 30 to 45 years for screening for CC using VIA (Pittalis et al., 2020; Talama et al., 2020). By 2017, this target was still not achieved even though there has been some increase in the number of women undergoing screening for the disease. Notably, in 2011, 9.3% of women utilized the screening services but in 2017, this increased to 47% (Msyamboza et al., 2016; Talama et al., 2020). While from 2011 to 2012 the increment was relatively small (9.3% to 14%), by 2015 however the increment was significant (14% to 27.3%), and continued to grow to 47% in 2017.

Relationship Between Knowledge of Cervical Cancer and Utilization of Cervical Cancer Screening Services

There is considerable evidence present in the literature that identifies a relationship between knowledge of CC among women and their utilization of the screening services for the disease. For example, Yimer et al. (2021) pointed out that the utilization of screening services for CC is different among women depending on the knowledge of the disease that they possess. This is collaborated by Wakwoya et al. (2020), who also noted that the utilization of the services was more among women with comprehensive knowledge of the disease than among those whose knowledge of it was low. Such influence of knowledge of CC on utilization of the screening services can be attributed to the understanding by women of the risk factors, symptoms, and prevention which include benefits of screening services, treatments, and their side effects, which at the end of the day allows them to favorably consider the utilization of the services (Geremew et al., 2018).

While there is consensus on women with comprehensive knowledge of CC utilize the screening services more than those with low knowledge, there are different estimations of the likelihood of women with comprehensive knowledge utilizing the service more than those with low knowledge. Yimer et al. (2021) estimated that the likelihood of women with comprehensive knowledge utilizing the screening services is 5 times more than those with low knowledge. On the other hand, Geremew et al. (2018) projected that the likelihood was 3 times more.

In Malawi, this trend is also prevalent. It has been found that for rural women, lack of knowledge of CC was the most common reason for them not utilizing the screening services (Maree and Kampinda-Banda, 2020). According to Chadza et al. (2012), the women who mostly had limited knowledge of the disease were delayed in

going for screening services because they did not know the symptoms of it, hence they never associate them with CC. The rural women, in particular, linked the symptoms to superstitions and hence preferred traditional medicines over screening and getting treated at health facilities (Chadza et al., 2012).

Moderating Role of Channels of Communication on the Relationship Between Knowledge and Utilization of Cervical Cancer Screening

Knowledge of CC is imparted to women through different channels of communication (Kisiangani, 2021). These channels of communication will determine the comprehensiveness and potentially increase CC knowledge among women which in turn increases their utilization of CC screening services (Ciceron et al., 2022). Kisiangani (2021) agree with this assertion by pointing out that ultimately the channels of communication enhance the utilization of CC screening. However, channels of communication are effective at increasing the knowledge of CC when the background of a particular location and audience is considered beforehand (Abiodun, Olu-Abiodun, Sotunsa, and Oluwole, 2014). In other words, the channels and the knowledge they communicate will be tailor-made to consider the unique settings and characteristics of the targeted women.

T/A Kuntaja, the location of this study, is a rural area where health facilities are few and far apart. The road network is substandard, hence traveling to health facilities is difficult in the rainy season. The women in the area are mostly poor and have low levels of education (National Statistical Office, 2021). Such a profile, demands channels of communication that overcome these geographical and socioeconomic barriers. According to Mkandawire, Ngwira, and Maseko (2020), the majority (53%) of women who have knowledge of CC in Blantyre district where T/A

Kuntaja is found, acquired it through health personnel from health facilities (organizational channel of communication). Considering the geography of the area of this study, relying only on such an organizational communication channel would mean less knowledge of CC among the women since they are less likely to visit the health facilities frequently. In addition, the low levels of education in the area would also determine the channel of communication, taking into account their likelihood of not being able to read and understand messages about CC that is complex.

CHAPTER 3

METHODOLOGY

This chapter presents the research methodology used for this study. It first discusses research design. The chapter then describes the population of the study, detailing how the sample for it was calculated and the sampling technique used. It also presents the instrument used in the study to collect data, explaining how the validity and reliability of the instrument was assessed. The chapter further discusses the procedure used in the study to collect data and how that data was analyzed. The last section of the chapter describes the ethical considerations for the study.

Research Design

Research design is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. The design is determined by the nature of the research problem and the objectives studied. This study was focused on assessing the role of channels of communication as a moderator of the relationship between knowledge and utilization of CC screening services among women of T/A Kuntaja, rural Blantyre, Malawi. The study strived to establish a relationship between knowledge of CC screening and the utilization of the screening services among these women as moderated by channels of communication. In this regard, it was a cross-sectional study employing a correlational research design with a moderating variable.

“In correlation studies, the moderating variable is defined as a third variable Z that affects the correlation between two variables X and Y. A statistically significant moderating variable can amplify or weaken the correlation between X and Y” (Glen,

2022, para. 3). This study wanted to determine if channels of communication affect the correlation between knowledge and utilization of CC screening services. As with any other correlational study, it collected quantifiable data from which generalizations were made, hence it was quantitative.

Population and Sampling Procedure

There were two determinants of the target population. These were the location and ages of the women. T/A Kuntaja in rural Blantyre was the focus because as observed earlier in the background of the study, women in rural areas are supposedly more susceptible to CC. The women aged between 30-49 were targeted because their age range covers the primary target of the free CC screening services that are offered in Malawi (Pittalis et al., 2020; Talama et al., 2020). The 30-49 age range population of women in the area is given in the Malawi Population and Housing Census Report - 2018. The population of women aged 30-49 years in T/A Kuntaja is 8,937 (National Statistical Office, 2019).

Sampling Size Determination

The size of the sample was determined using Yamane's Formula. This is because the population of women aged 30 -49 years in T/A Kuntanja, as noted above is finite and known (8,937). According to this formula,

$$n = N / 1 + N (e)^2$$

Where: **n** = the sample size

N = the population size **e** = the level of precision (0.05)

In this study, N (the population size) is 8,937. Therefore, the sample size was 383. This sample size did not take into account non-response. To compensate for nonresponse, the study used the non-response rate of 30% which most studies use

(Duntoye, 2015). Thus, the sample size for the study that accounts for non-response was 498.

Sampling Technique

This study employed a multistage sampling technique as a means of selecting the elements of the sample. In the area of T/A Kuntaja, there are about 30 group villages which are further divided into over 140 villages. Out of these villages, 19 villages were randomly selected. This sample size of 19 villages was determined by using the 10% condition in calculating the sample size (14 villages) and then adding at least 30% of 14 (4.2, which was rounded to 5) as non-response adjustment. From each of these 19 villages, at least 26 women aged 30-49 years were then selected using a simple random sampling technique.

The random sampling of the village involved assigning a number to each of the villages and writing them on a piece of paper. The papers were then folded and placed in a box. 19 papers were picked from the box to determine the villages from which the sample was to be selected. Each time a paper was picked, the box was shaken, and the papers stirred and mixed to ensure an equal probability of a paper being picked.

A similar sampling process to the one used for villages was used for sampling the women from each of the villages. With the help of village heads, the names of the individual women aged between 30 – 49 years from each of the villages were written on a piece of paper. The papers were then folded and placed in a box. At least 26 papers were picked from the box to determine the names of the women for each of the villages who were selected. Each time a paper was picked, the box was shaken, the papers stirred and mixed to ensure an equal probability of a paper being picked

Instrument for Data Collection

For this study, a questionnaire was developed to specifically collect quantitative data. In the questionnaire there was an introductory page where the interviewer was introduced and the interviewee was requested for consent to participate in the study. The items in the questionnaire were formulated to measure each variable of the study in relation to its objectives. The data collected was hence on participants' sociodemographic, channels of communication used, knowledge of CC, and utilization of screening services among the participants. The questions were closed ended.

The content of the questionnaire was developed by proper conceptualization of the variables through review of literature. The literature reviewed was used as a guide in formulating the questions in each section of the questionnaire. The questions on channels of communication elicited from women about which channel did they get their knowledge of CC. The questions on women's knowledge of CC and screening were formulated to assess if they had particular knowledge of the nature of the disease which included description, causes, risk factors, symptoms, prevention, screening, treatment, and side-effects of the treatment of cervical cancer. In regards to utilization of screening services, the questions were aimed at knowing if the women utilize the services and the reasons for utilization and non-utilization.

The questionnaire was then translated into Chichewa (the local language in the area of study) for easy administration for the interviewer and easy understanding for the interviewee. A back translation (translating the questionnaire from Chichewa back to English) was performed by a translator who was not involved in the original translation into the target language. By comparing the back translation to the original text, the quality and accuracy of the translation into another language can be

confirmed. The quality of the questionnaire was assessed before it is administered to the sample of the study. This involved determining its validity and reliability.

Validity of the Questionnaire

The validity of the questionnaire refers to its ability to measure exactly that which it was developed to measure (Elmusharaf, 2016). While there are several measures of validity which include content, criterion, and construct, the validity of the questionnaire for this study was measured mainly in terms of content. Content validation focuses on the content of the questionnaire to determine the extent to which it deals with the variables and objectives of the study (Elmusharaf, 2016).

In the case of this study, the content validation was done through expert judgement. This involved sending the questionnaire to other public health experts who made an opinion of it based on their expertise on whether the questions cover the content of the study (Fernández-Gómez et al., 2020). In particular, three experts provided face validity of the questionnaire. This was the assessment of the experts in regards to the questionnaire's content on the face of it, judging whether it seemed to measure the variables and the objectives of the study (Johnson, Gallagher, and Vagnozzi, 2021).

Reliability of the Questionnaire

Reliability is defined as the consistency of a measure. This consistency can be over time (test-retest reliability), across items (internal consistency), and across different researchers (inter-rater reliability) (Chiang, Jhangiani, and Price, 2015). In this study, the internal consistency of the questionnaire was established.

Internal consistency measures the consistency of the outcomes across variables with the questionnaire (Elmusharaf, 2016). This is commonly measured using Cronbach's alpha. The Cronbach's alpha for the questionnaire was determined

by pre-testing it on thirty (30) women aged 30-49 years from Singano and Nkonthiwa Villages which were not part of the selected villages for the study but from the same study area. Particularly, the eight items tested for reliability, were on the level of knowledge of CC and its screening among the women. The responses from each the 30 women for each of these items were rated on a Likert scale of 1 to 4 where 1 was Above Average, 2 was Average, 3 was Poor, and 4 was Very Poor. Using *IBM SPSS Statistics 20*, the Cronbach's reliability coefficient for the study's questionnaire was found to be 0.68 which is slightly below 0.7. The 0.68 the Cronbach's reliability coefficient could be attributed to the few numbers of items and responses that were used in its calculation. However, the coefficient is very close to 0.7 as such it indicates some level of reliability (Nawi, Tambi, Samat, and Mustapha, 2020).

When the questionnaire was tested it was found that the women had challenges in understanding some of the words that were translated into the local language. In particular the local words for bacteria, virus and HPV were more less meaning the same thing. To counter this, it was decided that the English words for these be used in the final translated questionnaire. However, the research assistants were advised to make an effort to further explain the difference between a virus in general and HPV.

Data Collection Procedure

The translated questionnaire was coded and uploaded on KOBO collect. This was done to allow the research assistants to collect the data electronically using tablet phones. All the completed questionnaires were sent to a secure server where it was stored waiting for analysis.

The collection of data was preceded by a visit to the Traditional Authority (T/A) of the area where the research was conducted, in this case, T/A Kuntanja. This

was necessary to seek permission from and inform the chief of the study, its purpose, and how it would benefit the area. After the visit to the T/A, the village heads of each of the selected villages for the study were also informed of the study and permission asked from them to collect data in their villages.

When permission was granted, the questionnaire was administered to the selected women in the villages by research assistants who were trained by the researcher. Since the participants are from rural areas, the administering was necessary as not everybody could be assumed to be literate. The questions therefore were read to the participants in their local language; hence the assistants were using a translated version of the questionnaire.

Methods of Data Analysis

The data collected from the participants through the questionnaires was reviewed by the researcher. This allowed for the elimination of mistakes in recording the data before it is coded and entered into the SPSS and EXCEL software packages. In particular, data related to channels of communication through which knowledge of CC and its screening is communicated to the women of T/A Kuntaja, in rural Blantyre, Malawi was analyzed using frequencies and percentages. Data on the knowledge of CC including its screening and the utilization of CC screening services among the women in the location of the study was analyzed through means and percentages.

One-way analysis of variance was used to compare the level of knowledge and utilization of screening services among women across channels of communication. Correlation analysis was done to determine the relationship between knowledge of CC and utilization of screening services. Moderated regression analysis was the method to be used to analyze data on moderating effect of channels of communication

on the relationship between the knowledge of CC and the utilization of screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi. The findings thereof are presented in tables, charts, and graphs.

Ethical Considerations

The Ethical and Institutional Review Board of the University of Eastern Africa, Baraton was approached for ethical clearance of the study. This was done upon the approval of the proposal. After the board granted the clearance, also obtained ethical approval to conduct the research from the Blantyre District Health Office and the National Health Sciences Research Committee of the Ministry of Health.

The researcher strived to ensure that the privacy and dignity of the participants of the study are guaranteed. This was done through a request for their consent to participate and assuring them of the confidentiality of their responses and names. As the request for participation was sought, they were also told the purpose of the study. Since the study was conducted in rural areas, where the illiteracy level is high, the questionnaires were translated into Chichewa (the local language) and it was read out to them by trained research assistants. To ensure that no material in the report was plagiarized, it went through Turnitin software. Where material from other studies has been used, it has been acknowledged. In data collection and analysis, the researcher strived for honesty and no manipulation of data was entertained.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter presents the data collected through the research questionnaire on the relationship between channels of communication, knowledge, and utilization of CC screening services among women in Chileka, rural Blantyre district, Malawi. The data is presented in a sequence related to that of the specific objectives of the study. The chapter also analyzes and interprets the data presented.

Study Area Setting

Traditional Authority Kuntaja's area is a rural setting in Blantyre district in the southern region of Malawi. The area has 30 group villages which are further divided into over 140 villages. The women in the area are mostly poor and have low levels of education (National Statistical Office, 2021). Of these 140 villages, the study sampled 19 villages within 10 group villages. The names of group villages and the villages are listed in Table 1.

Being a rural setting, health facilities in T/A Kuntaja's area are few and far apart. There are seven public and two private health facilities. The road network is substandard (not tarmacked) which makes traveling to health facilities difficult in the rainy season.

Response Rate

The population of the study was 8,937 women aged 30-49 years (National Statistical Office, 2019). The sample size taking into account non-response was 498. At least 26 women aged 30-49 years were targeted in each of the sampled 19 villages.

428 women consented to participate in the study and the research questionnaire was administered to them. This represents 85.9% response rate, adequate to draw conclusions from the data collected from the research questionnaire.

Table 1. List of Group Villages and Villages Where the Study was Conducted

Name of Group Village	Name of Village
Botamani	Botamani
Chimkango	Chimkango
	Chaola
Chintumbira	Chintumbira
	Maneya
Magombo	Magombo
	Master
Malizani	Malizani
	Kapitawo
	Mijala
Malora	Malora
	Mapemba
Mpasuka	Mpasuka
Mtefula	Pambaza
Nkata	Nkata
	Gopani
Solomon	Ntantha
	Solomon
	Jelan
10 Group Villages	19 Villages

Demographic Characteristics of the Respondents

The respondents of this study had different age ranges, marital statuses, education levels, religions, ethnic groups, and employment statuses. Table 2 presents the frequency distribution for the different categories of these demographic characteristics of the respondents.

From table 2, over a third (43.46%) of the participants were relatively young aged between 30 -34 years. As the ages increased, the number of participants in the

higher age ranges decreased. This trend is consistent with that of population of Malawi where the number of people decreases with increased ages as displayed in the population pyramid of Malawi (National Statistical Office, 2019). 302 (70.56%) participants were married while the remaining 126 had varying marital statuses.

Table 2 also shows that 404 (94.39%) respondents have some sort of formal education with over half (227) of the participants having primary school education. This correlates with the results of the 2018 Malawi population and housing census main report which indicated that 75% of the population in Blantyre district were literate (NSO, 2019). The table also illustrates that 98.36% (421) of the participants were Christians just as the majority (77.3%) of Malawians (National Statistical Office, 2019). 229 (53.50%) participants were from the Ngoni while the rest were from Mang'anja, Lomwe, Chikunda or Yao tribes. In addition, the majority (328) of the participants were unemployed which is an indication of the high poverty level among this population.

Table 2. Socio-demographic Characteristics of the Respondents

Characteristics	Category	Frequency	Percentage
Age	30-34	186	43.46
	35-39	110	25.70
	40-44	58	13.55
	45-49	74	17.29
	Total	428	100.00
Marital Status	Divorced	25	5.84
	Married	302	70.56
	Separated	50	11.68
	Separated Married	1	0.23
	Single	23	5.37
	Widowed	27	6.31
	Total	428	100.00
Education Level	J.C.E.	97	22.66
	M.S.C.E.	72	16.82
	No formal education	24	5.61
	Primary	227	53.04
	Tertiary	8	1.87
	Total	428	100.00
Religion	Christian	421	98.36
	Muslim	6	1.40
	Non-Religious	1	0.23
	Total	428	100.00
Ethnic group	Mang'anja	37	8.64
	Lomwe	59	13.79
		44	10.28
	Ngoni	229	53.50
	Chikunda	35	8.18
	Yao	24	5.61
	Total	428	100.00
Employment Status	Civil servant	11	2.57
	Self-employed	85	19.86
	Student	4	0.93
	Unemployed	328	76.64
	Total	428	100.00

Results and Discussions Based on the Research Objectives (RO)

RO1: The Channels of Communication through which Knowledge of Cervical Cancer and its Screening is Communicated to the Women

The study identified the channels of communication through which knowledge of CC and its screening is communicated to the women of T/A Kuntaja, in rural Blantyre, Malawi. The respondents had to choose from three given responses which included interpersonal, mass media, and organizational/community channels of communication. The frequency distribution of the results of the responses are presented using a graph in Figure 2.

From figure 2, out of 428 respondents of the study, the means through which knowledge of CC and its screening was communicated to 255 (59.6%) of them was organizational and community channels of communication. These channels included health talks at public health facilities and community meetings. Mass media channels of communication reached 124 (29.0%) of the respondents. The mass media channels included radio, TV and outdoor posters. Interpersonal channels of communication which mainly involved hearing about CC and its screening from other community members, friends or relatives were the least used as indicated by 43 (10.0%) respondents. However, 6 (1.4%) of the respondents indicated that they had never heard any information about CC.

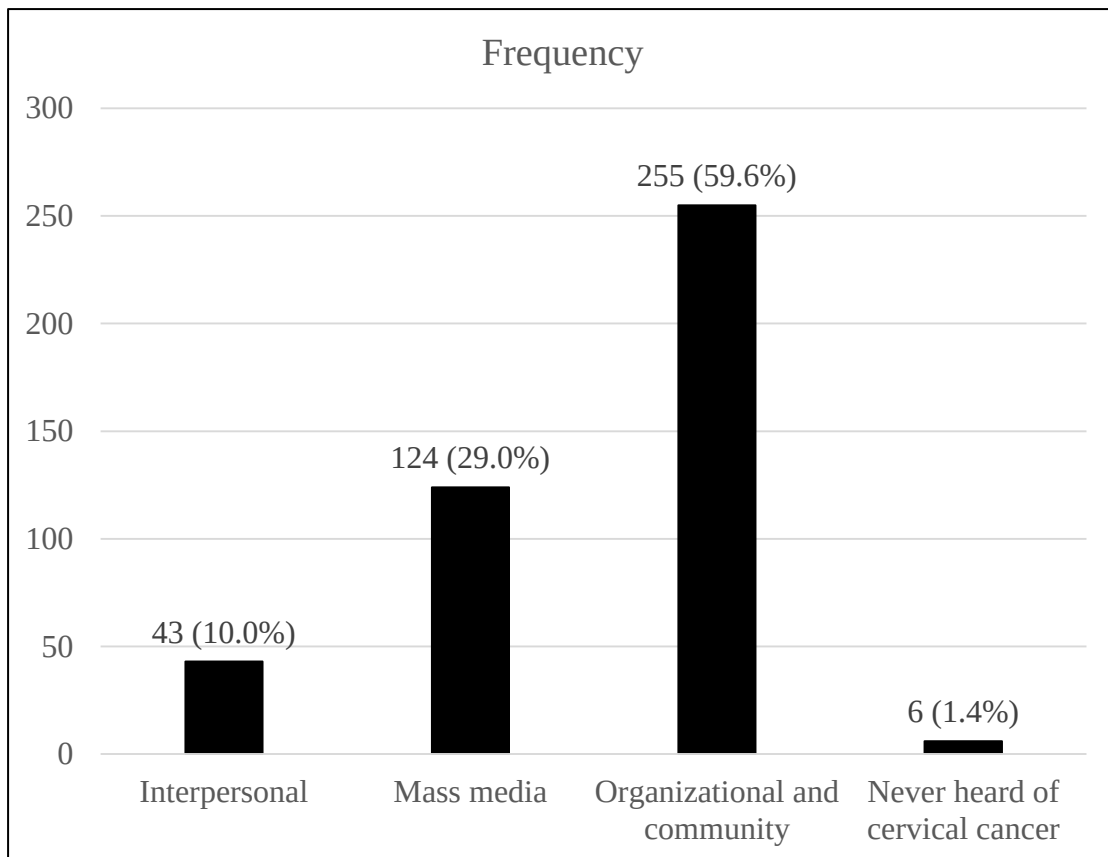


Figure 2. Channels of Communicating Knowledge of CC

In Malawi, health talks, which discuss different health topics including CC, are presentations that are conducted at most public health facilities before services commence every day. This is probably why most women had indicated to have acquired knowledge of CC through organizational and community channels of which health talks are an example. In addition, most of the women could have easily attended community meetings which are sometimes held by health surveillance assistants (HSAs) in their communities discussing different health topics as well as CC.

Almost one-third (29%) of respondents who indicated mass media as the means through which they acquired their knowledge of CC. This collaborates with the assertion by Ngwira et al. (2020) that CC was less reported in mass media despite these channels of communication having the capability to reach a wider audience.

Interpersonal channels of communication were the least means of communicating knowledge of CC probably because the friends and relatives of the women lacked the knowledge of the disease, and as such, they could not pass it on to the latter.

RO2: The Level of Knowledge of Cervical Cancer and Its Screening

To assess the level of knowledge of CC and its screening among the women of T/A Kuntaja, the study asked the respondents questions related to nature of CC. This included knowledge on description of CC, its cause, risk factors, symptoms, prevention, screening services, treatment, and associated side effects. Each correct answer on the knowledge questions was given one mark. A total of 59 knowledge questions were asked, thus the respondents could obtain a maximum score of 59. The results data from the responses collected are presented in Table 3.

From table 3 and using the legend below the table, it is evident that most of the women had average knowledge of the description of CC and above average knowledge of the cause of the disease. However, the knowledge of the other aspects of CC was very poor among them. These other aspects include of risk factors, symptoms, prevention, screening, and side-effects of treatment of CC. With an overall percentage of 29%, it can be concluded that the women of T/A Kuntaja had a very poor knowledge of CC.

Since comprehensive knowledge of CC consists of all the aspects of the disease, then it could be said that the respondents of the study did not to have this comprehensive knowledge of CC. This is in line with Chadza et al. (2012) who also noted that women in Malawi had limited comprehensive knowledge of CC. Furthermore, by only better knowing the description and the cause of the disease, the respondents implied that they had heard of CC. This is in agreement with the

observation by Gerstl et al. (2022) that the majority of women have heard of CC as a disease yet their knowledge about its symptoms and screening of it was low among them. The very poor knowledge of prevention and screening of CC among respondents of this study was also noted by Rudd et al. (2017) and Bula et al. (2022), respectively.

Table 3. Level of Knowledge of Cervical Cancer and its Screening

Knowledge of...	N	Mean Score	Std. Deviation	Maximum Score	Percentage	Interpretation*
Description of cervical cancer	426	3.17	.986	4	79%	Average
Cause of cervical cancer	406	4.05	1.007	5	81%	Above Average
Risk factors of cervical cancer	410	1.67	.864	12	14%	Very Poor
Symptoms of cervical cancer	382	1.52	.799	7	22%	Very Poor
Prevention of cervical cancer	406	1.54	.836	8	19%	Very Poor
Cervical cancer screening	428	1.46	.824	4	36%	Very Poor
Treatment of cervical cancer	408	3.00	.935	7	43%	Very Poor
Side effects of cervical cancer treatment	352	1.59	.856	12	13%	Very Poor
Cervical cancer (Overall)	428	17.03	3.911	59	29%	Very Poor

*Legend: 90% and above – Excellent 80% - 89% - Above Average; 60% - 79% - Average 50% - 59% - Below Average; Below 50% - Very Poor

RO3: The Level of Utilization of Cervical Cancer Screening Services

The assessment of the level of utilization of CC screening services among the women of T/A Kuntaja, involved asking the respondents if they have ever utilized the services before which in Malawi, as noted earlier, is primarily done using VIA and

how often (Government of Malawi, 2017). The frequency distribution of results is presented through a graph in Figure 3.

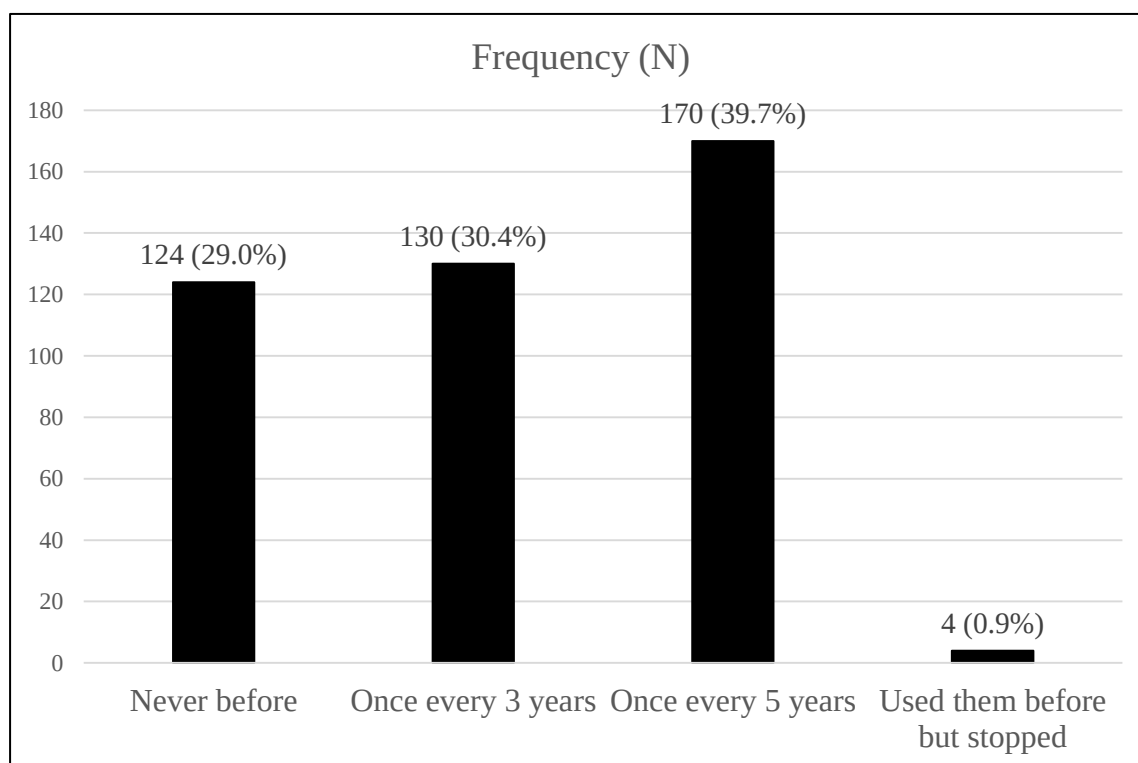


Figure 3. Level of Utilization of CC Screening Among Respondents of the Study

The results in figure 3 show that out of 428 of the respondents, 304 (71%) had at least utilized the screening once while 29% had never been screened before. Out of the 304, only 130 (30.4%) had screening once every 3 years which is the recommended regularity for VIA, the common method in Malawi. 170 (39.7%) of the respondents indicated that they did the screening once every 5 years, while 4 (0.9%) had done the screening before but had stopped. The 71% of respondents who had at least been screened once for CC were still below the 80% of the women targeted for screening by National Cervical Cancer Program (Pittalis et al., 2020; Talama et al., 2020). In addition, the respondents (30.4%) that indicated having been regularly screened (every 3 years for VIA) for CC were less than the 47% of women that in

2017 were said to have regularly underwent screening for the disease (Msyamboza et al., 2016; Talama et al., 2020). This indicates that women in the area of this study were under par with the rest of the country or at least those who were part of the study by Msyamboza et al. (2016) and Talama et al. (2020).

For those 71% who had at least utilized the screening services once, they were further asked what motivated them to do so. The frequency distribution of the reasons given are presented in Figure 4.

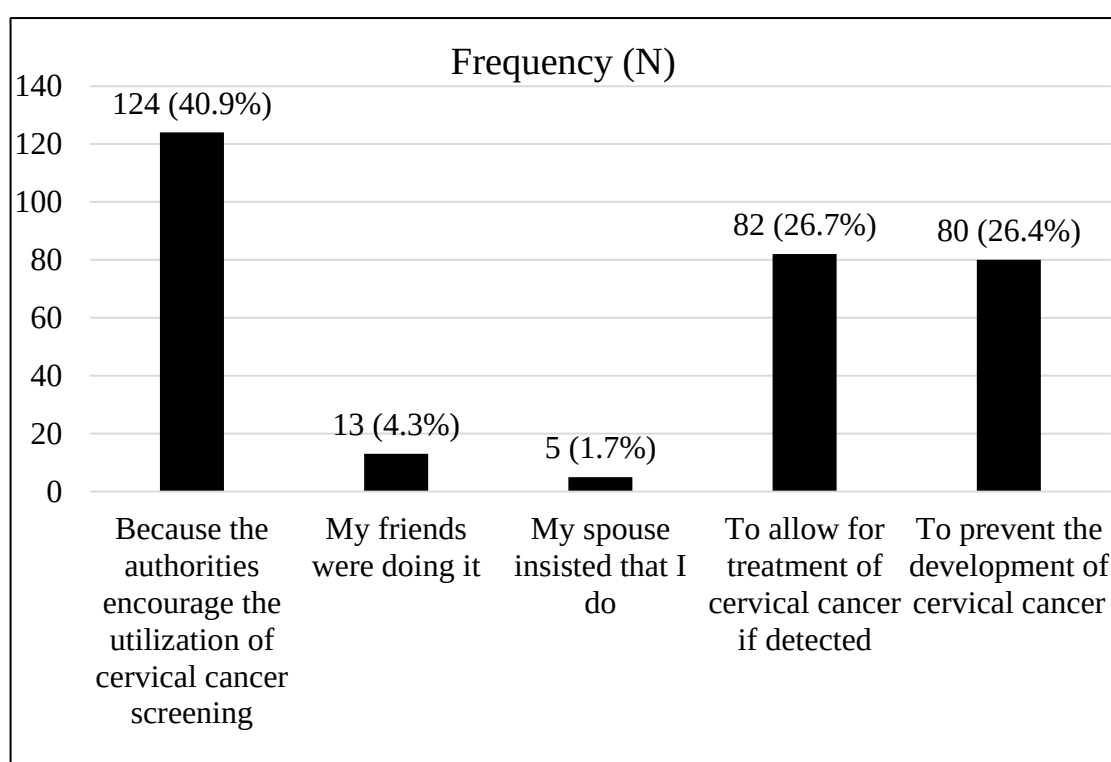


Figure 4. Reasons for Utilization of CC Screening by Respondents of the Study

Out of 304 respondents, 162 (53.29%) of the respondents gave reasons that indicated they had some knowledge of CC and its screening. These included 82 (26.97%) who did it to allow for treatment of CC if detected and 80 (26.32%) of the respondents who did the screening to prevent the development of CC. The remaining 142 (46.71%) respondents did the screening because of the external influence on them

not necessarily because they knew something about CC. These included 124 (40.79)% who indicated that they did it because the authorities encouraged them to utilization of CC screening. Also, 12 (4.28%) respondents did it because either their friends were doing it and 5 (1.64%) their spouse insisted that they do it.

The respondents who had never utilized the CC screening services before were also asked for the reasons behind. The reasons they gave are presented in figure 5. Out of 124 respondents, 68 (54.8%) gave reasons that indicated lack of knowledge of CC and its screening. These included 47 (37.9%) who were afraid of the risks associated with the CC screening, seven (5.6%) who were not aware of the availability of the screening services, and 14 (11.3%) who were not aware of the benefits of screening. The remaining 56 (45.2 %) of the respondents who had never utilized the CC screening services before, 55 (44.4%) indicated that they had no reason at all for not utilizing the services while one (0.8%) it was against their belief to be screened.

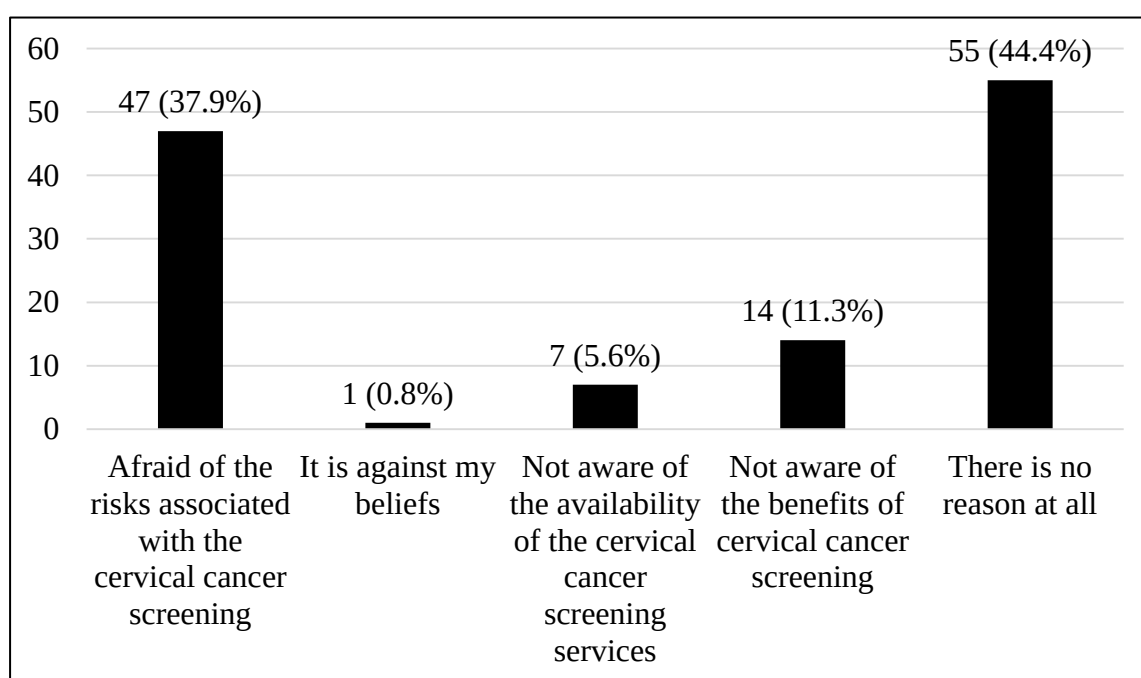


Figure 5. Reasons for Not Utilizing Cervical Cancer Screening by Respondents of the Study

RO4: Comparison of the Level of Knowledge of Cervical Cancer and Its Screening

The study endeavored to determine whether the channels of communication made a difference in the level of knowledge of CC and its screening among the women of T/A Kuntanja. To determine this, the level of knowledge of the respondents categorized according to the channels of communication was compared using one-way analysis of variance (ANOVA). The results are presented in Table 4.

Table 4. Comparison of Level of Knowledge of Cervical Cancer and its Screening by Channel of Communication

		Sum of Squares	df	Mean Square	F	Sig.
Knowledge of description of cervical cancer	Between Groups	7.907	2	3.953	4.116	.017*
	Within Groups	402.456	419	.961		
	Total	410.363	421			
Knowledge of cause of cervical cancer	Between Groups	1.031	2	.515	.506	.603
	Within Groups	407.073	400	1.018		
	Total	408.104	402			
Knowledge of risk factors of cervical cancer	Between Groups	2.439	2	1.219	1.636	.196
	Within Groups	301.892	405	.745		
	Total	304.331	407			
Knowledge of symptoms of cervical cancer	Between Groups	.308	2	.154	.239	.788
	Within Groups	242.294	376	.644		
	Total	242.602	378			
Knowledge of prevention of cervical cancer	Between Groups	2.770	2	1.385	1.984	.139
	Within Groups	279.304	400	.698		
	Total	282.074	402			
Knowledge of cervical cancer screening	Between Groups	.316	2	.158	.231	.794
	Within Groups	286.578	419	.684		
	Total	286.893	421			
Knowledge of treatment of cervical cancer	Between Groups	.578	2	.289	.331	.718
	Within Groups	350.361	402	.872		
	Total	350.938	404			
Knowledge of side effects of cervical cancer treatment	Between Groups	1.171	2	.586	.800	.450
	Within Groups	253.926	347	.732		
	Total	255.097	349			
Knowledge of and its screening (Overall)	Between Groups	41.293	2	20.647	1.472	.231
	Within Groups	5877.458	419	14.027		
	Total	5918.751	421			

From Table 4, channels of communication did not make a significant difference in the overall level of knowledge of cervical cancer and its screening among the women of T/A Kuntanja [$F(2, 419) = 1.472, p = .231$]. The p-value of .231 is greater than the .05 level of significance. Thus, in general, knowledge of CC and its screening is not significantly associated with channels of communication. This means that the null hypothesis 1 is accepted. Therefore, the channels of communication through which knowledge of cervical cancer and its screening is communicated makes no significant difference in the level of knowledge of cervical cancer and its screening acquired by the women of T/A Kuntaja, in rural Blantyre, Malawi.

Comparing the specific aspect of knowledge of CC and its screening among women by channels of communication, it was found that the only aspect that had a p-value < 0.05 was the knowledge of description of CC. This meant that the channels of communication made a significant difference only in the level of knowledge of the description of CC [$F(2, 419) = 4.116, p = .017$] and not in the level of knowledge of other aspects of CC and its screening.

A further analysis on which channel effectively communicated the description of CC among the women was conducted. This analysis compared the mean score of the knowledge on description of CC from the different channels of communication. The group means and the multiple comparison of the means by channel of communication using the Games-Howell test are presented in Table 5.

Table 5. Comparison of Level of Knowledge of Description of Cervical Cancer by Channels of Communication

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Interpersonal	43	3.07	1.009	.154	2.76	3.38
Mass media	124	3.37	.932	.084	3.21	3.54
Organizational and community	255	3.07	.997	.062	2.95	3.19
Total	422	3.16	.987	.048	3.06	3.25
Multiple Comparisons (Games-Howell)						
(I) Channel of Communication	(J) Channel of Communication	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Mass media	Interpersonal	.301	.175	.206	-.12	.72
	Organizational and community	.300*	.104	.012	.05	.55
Organizational and community	Interpersonal	.001	.166	1.000	-.40	.40

*, The mean difference is significant at the 0.05 level.

The level of knowledge of the description of CC of women whose information was obtained from mass media channel ($M = 3.37$, $SD = .932$) was significantly higher than the level of knowledge of women whose information was obtained from organizational and community channel ($M = 3.07$, $SD = .997$). However, the differences between the level of knowledge obtained through mass media and interpersonal channels as well as through interpersonal and organizational and community channels were not statistically significant.

The level of knowledge of the description of CC obtained from mass media could have been higher due to the higher frequency with which the women likely heard about the disease particularly through radio which in Malawi to some extent is used to communicate cancer-related messages to the public (Ngwira et al., 2020). While visits to health facilities by women, where health talks (an organizational

channel) are used to communicate CC information to them, are far between depending on the need to do so, radio health programs on the other hand are often repetitive. This implies that radio which is particularly accessible to the rural women could be used more as an effective channel of communicating knowledge of CC than is currently the case where breast cancer is more communicated than CC (Ngwira et al., 2020).

RO5: Comparison of the Level of Utilization of Screening Services

The study strived to determine whether the channels of communication made a difference in the level of utilization of screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi. To determine this, the level of utilization of screening services by the women categorized according to the channels of communication was compared using one-way analysis of variance (ANOVA). The results of the analysis are presented in Table 6.

Analysis of variance results showed that there was a significant difference in the level of utilization of screening services by women classified according to channels of communication [$F(2, 419) = 11.667, p < .001$]. This means that the null hypothesis 2 was rejected. In other words, the channels of communication through which knowledge of cervical cancer and its screening is communicated makes significant difference in the level of utilization of the screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi.

Table 6. Group Means and Analysis of Variance

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Interpersonal	43	.53	.735	.112	.31	.76
Mass media	124	1.49	1.253	.112	1.27	1.71
Organizational and community	255	1.38	1.164	.073	1.24	1.53
Total	422	1.33	1.185	.058	1.22	1.44
ANOVA						
Level of utilization of CC screening services						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	31.189	2	15.594	11.667	<.001	
Within Groups	560.027	419	1.337			
Total	591.216	421				

A further analysis which channel effectively communicated the importance of screening services which created differences in utilization among the women was conducted. This analysis compared the mean score of the utilization of screening services among the different channels of communication. The multiple comparison of the means by channel of communication using the Games-Howell test are presented in Table 7.

Table 7. Multiple Comparisons of Level of Utilization of Screening Services

(I) Channel of Communication	(J) Channel of Communication	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Mass media	Interpersonal	.957*	.159	<.001	.58	1.33
	Organizational and community	.108	.134	.702	-.21	.42
Organizational and community	Interpersonal	.849*	.134	<.001	.53	1.17

*. The mean difference is significant at the 0.05 level.

The level of utilization of screening services of women whose information was obtained from mass media channel ($M = 1.49$, $SD = 1.253$) and from the

organization and community channel ($M = 1.38$, $SD = 1.164$) was significantly higher than the level of utilization of women whose information was obtained from interpersonal channel ($M = .53$, $SD = .735$). However, the difference of utilization between mass media and organizational and community channels was not significant. This reveals that the interpersonal channel is the least effective means of communication leading women to utilize CC screening services.

The higher levels of utilization of screening services among women who obtained knowledge of CC from mass media as well as organizational and community channels of communication could be attributed to the accuracy of the knowledge communicated. Through these channels, health officials communicate accurate information of the disease which has been shown to influence the utilization of the screening services (Geremew et al., 2018; Wakwoya et al., 2020; Yimer et al., 2021).

This implies that organizational and community channels of communication together with mass media could be used more effectively to communicate the knowledge of CC to women which in turn would enhance the utilization of the screening services for disease among them in Malawi. On the other hand, interpersonal channels communicated knowledge of the disease that friends and relatives of the women poses which cannot be always accurate, hence the low level of utilization among the women who obtain their knowledge of CC from these channels.

RO6: The Relationship Between the Level of Knowledge of Cervical Cancer and Utilization of Screening Services

In its quest to assess the relationship between the level of knowledge of CC and the utilization of screening services by the women of T/A Kuntaja, the study did a

correlation analysis of the responses from the respondents on these two variables. The results of the analysis are presented in Table 8.

In general, knowledge of cervical cancer has a significant positive relationship with utilization of screening services, $r(428) = .159, p < .001$. This implies that the more knowledge a woman has about cervical cancer, the tendency is greater for her to utilize cervical screening services. This means that the null hypothesis 3 was rejected. Thus, according to the findings of this study, there is a significant relationship between the level of knowledge of cervical cancer and the utilization of the screening services by the women of T/A Kuntaja, in rural Blantyre Malawi.

Specifically, the correlation analysis revealed that knowledge of the four aspects of cervical cancer is significantly related with utilization of screening services: knowledge of description of cervical cancer, $r(426) = .172, p < .001$; knowledge of risk factors of cervical cancer, $r(410) = .145, p = .003$; knowledge of symptoms of cervical cancer, $r(382) = .132, p = .010$; and knowledge of treatment of cervical cancer, $r(408) = .125, p = .012$. This means that women who are more knowledgeable of description, risk factors, symptoms, and treatment of CC tend to utilize screening services.

Table 8. Correlation Coefficients Between the Level of Knowledge of Cervical Cancer and Utilization of Screening Services

	Level of utilization of cervical cancer screening services	
Knowledge of description of cervical cancer	Pearson Correlation	.172**
	Sig. (2-tailed)	<.001
	N	426
Knowledge of cause of cervical cancer	Pearson Correlation	.032
	Sig. (2-tailed)	.521
	N	406
Knowledge of risk factors of cervical cancer	Pearson Correlation	.145**
	Sig. (2-tailed)	.003
	N	410
Knowledge of symptoms of cervical cancer	Pearson Correlation	.132**
	Sig. (2-tailed)	.010
	N	382
Knowledge of prevention of cervical cancer	Pearson Correlation	.084
	Sig. (2-tailed)	.092
	N	406
Knowledge of cervical cancer screening	Pearson Correlation	-.003
	Sig. (2-tailed)	.956
	N	428
Knowledge of treatment of cervical cancer	Pearson Correlation	.125*
	Sig. (2-tailed)	.012
	N	408
Knowledge of side effects of cervical cancer treatment	Pearson Correlation	.030
	Sig. (2-tailed)	.573
	N	352
Overall knowledge of cervical cancer	Pearson Correlation	.159**
	Sig. (2-tailed)	<.001
	N	428

*. Correlation is significant at the 0.05 level (2-tailed).; **. Correlation is significant at the 0.01 level (2-tailed).

The findings of the study are in agreement with Geremew et al. (2018) who noted that understanding of the risk factors, symptoms, and prevention of CC by the women allowed them to favorably consider the utilization of the screening services. As noted earlier, the respondents of this study had very poor knowledge of the risk factors, symptoms, and prevention of CC which according to Chadza et al. (2012),

could be the reason for them delaying going for screening services. This implies that in Malawi, deliberate effort needs to be made to ensure women have knowledge of the risk factors, symptoms, and prevention of CC which will increase the level of utilization of the screening services for the disease.

RO7: Moderating Effect of Communication Channels on the Relationship between the Level of Knowledge of Cervical Cancer and Utilization of its Screening Services

Using moderated regression analysis, the study assessed the moderating effect of channels of communication on the relationship between the level of knowledge of CC and the utilization of its screening services by the women of T/A Kuntaja. The results are shown in Table 9.

The results of the regression analysis in the model summary indicated that the regression model with knowledge of CC as the independent variable explained 3.3% of the variance in utilization of screening services. The analysis of variance showed that the predictive power is significant [$F(2, 419) = 7.140, p < .001$]. However, from the table of coefficients, the p-value for the interaction between communication channel and knowledge of CC is 0.340. This is greater than 0.05, hence the moderating effect of the channels of communication on the relationship between knowledge of CC and level of utilization of CC screening services is not significant. This implies that the relationship between the general knowledge of CC and level of utilization of CC screening services does not depend on the women's main source of information about CC.

Table 9. Moderated Regression Analysis on Knowledge of Cervical Cancer

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.182 ^a	.033	.028	1.168		
a. Predictors: (Constant), Knowledge of cervical cancer, Interaction between communication channel and knowledge of cervical cancer						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.486	2	9.743	7.140	<.001 ^b
	Residual	571.730	419	1.365		
	Total	591.216	421			
a. Dependent Variable: Level of utilization of cervical cancer screening services						
b. Predictors: (Constant), Knowledge of cervical cancer, Interaction between communication channel and knowledge of cervical cancer						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.443	.251		1.768	.078
	Interaction between communication channel and knowledge of cervical cancer	.061	.063	.046	.956	.340
	Knowledge of cervical cancer	2.798	.769	.175	3.640	<.001
a. Dependent Variable: Level of utilization of cervical cancer screening services						

This means that the null hypothesis 4 was accepted. Therefore, study showed that channels of communication have no significant moderating effect on the relationship between the level of knowledge and utilization of screening services among the women of T/A Kuntanja in rural Blantyre, Malawi.

The correlation analysis revealed that there are aspects of knowledge of CC which had significant correlation with utilization of the screening services. It is of interest to know whether channels of communication have a moderating effect on the relationship between utilization of CC screening services and knowledge on each of

the specific aspects: description, risk factors, symptoms, and treatment. It was found that the interaction effect is significant only on the knowledge of risk factors of CC.

**Moderating Effect of Channels of Communication
on the Relationship Between Knowledge of Risk
Factors of Cervical Cancer and Utilization
of Its Screening Services**

The results of the moderated regression analysis to determine the moderating effect of channels of communication on the relationship between knowledge of risk factors of CC and utilization of its screening services are shown in Table 10. The results of the regression analysis in the model summary indicated that the regression model with knowledge of risk factors of CC as the independent variable explained 4% of the variance in utilization of screening services.

The analysis of variance showed that the predictive power is significant [$F(2, 405) = 8.483, p < .001$]. From the table of coefficients, channels of communication have a moderating effect on the relationship between knowledge of risk factors of CC and level of utilization of CC screening services ($p = .007$).

Table 10. Moderated Regression Analysis on Knowledge of Risk Factors of Cervical Cancer

Cancer

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.201 ^a	.040	.035	1.167		
a. Predictors: (Constant), Knowledge of risk factors of cervical cancer, Interaction between communication channel and knowledge of risk factors of cervical cancer						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.119	2	11.559	8.483	<.001 ^b
	Residual	551.879	405	1.363		
	Total	574.998	407			
a. Dependent Variable: Level of utilization of cervical cancer screening services						
b. Predictors: (Constant), Knowledge of risk factors of cervical cancer, Interaction between communication channel and knowledge of risk factors of cervical cancer						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.989	.126		7.867	<.001
	Interaction between communication channel and knowledge of risk factors of cervical cancer	.155	.057	.132	2.701	.007
	Knowledge of risk factors of cervical cancer	.212	.067	.154	3.167	.002
a. Dependent Variable: Level of utilization of cervical cancer screening services						

Further analyses were also done to assess the correlation of between knowledge of risk factors of cervical cancer and level of utilization of CC screening services among women depending on from which channel of communication they acquired the knowledge. The results of these analyses are presented in table 11.

Table 11. Correlation Between Knowledge of Risk Factors of Cervical Cancer and Level of Utilization of Cervical Cancer Screening Services Per Channel of Communication

Channel of Communication	Level of utilization of cervical cancer screening services		
Interpersonal	Knowledge of risk factors of cervical cancer	Pearson Correlation	-.165
		Sig. (2-tailed)	.291
		N	43
Mass Media	Knowledge of risk factors of cervical cancer	Pearson Correlation	.155
		Sig. (2-tailed)	.092
		N	120
Organizational and Community	Knowledge of risk factors of cervical cancer	Pearson Correlation	.230**
		Sig. (2-tailed)	<.001
		N	245
**. Correlation is significant at the 0.01 level (2-tailed).			

The correlation analysis indicated that it is only for organizational and community channel of communication where the relationship between knowledge of risk factors of CC and level of utilization of CC screening services is significant at the 0.01 level. This implies that among the women who obtained information from organizational and community channel, their knowledge about risk factors of CC leads them to utilize the screening services.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The alarming high prevalence of CC and deaths due to the disease among women in Malawi begs for a solution to reduce or possibly eliminate it. The efforts of the Malawi government and other stakeholders towards the same by raising awareness and providing free screening services need to be intensified with a particular focus on increasing the level of knowledge of CC and the importance of utilizing screening services among women.

The positive relationship which exists between knowledge of CC and the utilization of its screening services among women can be enhanced by channels of communicating the knowledge. The level of knowledge of CC among the women can be increased when effective channels of communication, uniquely designed with the women's specific socio-demographic characteristics in consideration, are used especially for the poor rural women as those of T/A Kuntaja's area in Blantyre district. In addition, the knowledge of CC the channels communicate will have to be that which has a correlation on the utilization of the screening services.

In a quest to assess the plausibility of effective channels of communication increasing the level of knowledge of CC and its screening which in turn would increase the utilization of the screening services among women particularly of T/A Kuntaja's area in Blantyre district, this cross-sectional study employing a correlational research design with a moderating variable was conducted. 428 women

aged between 30-49 years randomly selected from 19 villages from area responded to a questionnaire which was administered to them in Chichewa by trained research assistants. The results were then analyzed using SPSS and EXCEL software packages. EXCEL was used for frequency and means analysis while correlation and moderated regression analysis was done using SPSS.

Summary of Findings

The findings of this study are summarized as follows: Organizational and Community channels of communication like health talks at the public health facilities and community meetings were the means through which the majority (59.6%) of the women acquired the knowledge of CC and its screening. This finding is similar to that of the study by Omoyeni and Tsoka-Gwegweni (2022) which found that women in rural South African mostly got their knowledge on CC from health personnel like community health workers, doctors or nurses. Mass media channels communicated the knowledge to (29.0%) of women while (10.0%) of them got it from interpersonal channels. The finding on mass media contradicts that from the study by Mengesha et al. (2020) which found that most women in north west Ethiopia acquired knowledge of CC from mass media.

Almost all (99.5%) of the women had average knowledge of the description of CC and (94.9%) of them had above average knowledge of the cause of the disease. The description and the cause of CC is fairly simple knowledge to understand which can be generally associated with awareness of the disease. Therefore, these findings indicate that the majority of the women were aware of the disease which can be attributed to the simplicity of the knowledge. This is consistent with other studies which indicate high level of CC awareness among women (Abugu and Nwagu, 2021; Mengesha et al., 2020; Omoyeni & Tsoka-Gwegweni, 2022; Weng et al., 2020).

However, 80% to 100% of women had generally very poor knowledge of the other aspects of CC. These include risk factors, symptoms, prevention, treatments and side-effects of the treatments, and its screening. Such knowledge is somewhat complicated compared to the description and cause of the disease in that it requires more scientific explanations. The very poor knowledge of this complicated aspects of the disease among the women is consistent with the study by Abugu and Nwagu, (2021) in regards to knowledge of symptoms among Nigerian women from organizations that are faith-based. This was also the case in north west Ethiopia where it was found that only 19,96% the women there had comprehensive knowledge of the symptoms of CC Mengesha et al. (2020). In regards to knowledge of risk factors being poor among the rural women in study area, this also consistent to the findings by Weng et al., (2020) and Mengesha et al. (2020) which also found the same. This study's finding on knowledge of prevention is again in agreement with that from the study by Mengesha et al. (2020). The low levels of these aspects of knowledge of CC can be attributed to the low levels of education which is a common characteristic for rural women.

Almost three-quarters, 304 (71%) of the women had at least utilized the screening once while 124 (29%) had never been screened before. Out of the 304, only 130 (30.4%) had the screening once every 3 years which is the recommended regularity. 170 (39.7%) of the respondents did the screening once every 5 years while 4 (0.9%) had done the screening before but had stopped. The finding by this study in regards to percentage of women utilizing the screening as per recommended regularity (once every 3 years) which was low is consistent with that from the study by Aynalem, Anteneh, and Enyew (2020) even though in this study higher percentage did utilize the service regularly. The difference in the percentage could be attribute to

the readily availability of the screening service in the area and the free access to it in Malawi. On the other hand, the generally low level of utilization of the screening in both studies could be attributed to the low level of knowledge of CC and its screening.

The channels of communication were found to make a significant difference only on the level of knowledge of the description of CC. The level of knowledge of other aspects of CC and its screening were not influenced in any way by the channels of communication. Furthermore, the level of knowledge of the description of CC of women whose information was obtained from mass media channel was significantly higher than the level of knowledge obtained from organizational and community channel. However, the differences between the level of knowledge obtained through mass media and interpersonal channels as well as through interpersonal and organizational and community channels were not statistically significant. As noted earlier know, knowledge of description of CC is simpler this makes it easier to transmitted and comprehend. Since mass media are the channels of communication that reaches out to the majority of the women, they will definitely have influence more on the level of knowledge of description of CC.

On the other hand, the number of women that visit health facilities and attend community meeting regularly hence exposed to the knowledge through organizational and community channels of communication is lower. This is also the case with interpersonal channels of communication. There was a significant difference in the level of utilization of screening services by women depending on the channels of communication from which they acquired knowledge of CC and its screening. In particular, the level of utilization of screening services of women whose information was obtained from mass media channel and from the organization and community channel was significantly higher than the level of utilization among women whose

information was obtained from interpersonal channel. However, the difference of utilization between mass media and organizational and community channels was not significant.

Such higher level of utilization of screening among the women can be attributed to the accuracy and the authoritativeness of the knowledge these channels transmit. In most cases the knowledge will be presented by health professionals and will be medically accurate. This will lure women in believing the information and following it which includes utilizing the screening services.

The level of knowledge of description, risk factors, symptoms, and treatment of CC is significantly correlated with utilization of its screening services. In other words, women who are more knowledgeable of description, risk factors, symptoms, and treatment of CC tend to utilize screening services. On the other hand, the level of knowledge of causes, screening, and side-effects of treatment of CC was not significantly correlated with the utilization of its screening services.

The moderating effect of the channels of communication on the relationship between knowledge of description, symptoms, and treatment of CC and level of utilization of CC screening services is not significant. However, channels of communication have a significant moderating effect on the relationship between knowledge of risk factors of CC and level of utilization of CC screening services. In particular, only organizational and community channels of communication have a significant moderating effect on the relationship between knowledge of risk factors of CC and level of utilization of CC screening services.

Conclusions

From the above findings, the study makes following conclusions:

Women in the study area acquired knowledge of CC and its screening through all the three types of channels of communication. However, organizational and community channels reached out to the majority of women. This could be attributed to the authoritative knowledge communicated by the health officials. Coming from health officials who the women are mostly familiar with and are supposedly authorities on the subject, the women would probably be more recipient and likely to retain the knowledge communicated. Despite the massive potential which is underpinned by the ability to reach the majority of women in rural areas, mass media as a channel of communication is being under-utilized to raise the awareness and knowledge of CC in Malawi. This could be attributed to lack of deliberate effort on the part of Malawi government, particularly the ministry of health, to partner mass media houses in raising the awareness and knowledge of CC among the population in general and women in particular. In terms of interpersonal channels communication, the less use of and minimal contribution of it to passing on knowledge of CC can be attributed to the low levels of the knowledge among the population in particular women. Since the level of knowledge among the women is low, they will most likely not able to share such knowledge with other women. In cases where the women share the knowledge with other women, be it their friends or relations, it is likely going to be not accurate or inadequate since they themselves have little if not no knowledge of CC.

The most common knowledge of CC among the majority of women was the description and the cause of the disease. The knowledge on risk factors, symptoms, prevention, screening, treatment and side-effects of the treatment of it was lacking

among the majority of the women. The description and cause of the disease is relatively simple knowledge that can be easily communicated and retained by the women who mostly had low or no level of education. The other aspects of knowledge of CC are more complex and the communication of them is packed and heavy which might suit the rural women.

While the majority of the women had at least one been screened for CC, not many of them utilizing the services regularly. This could be attributed to the lack of knowledge of screening. The women might not know of the need to screen regularly and the benefits of screening. The screening that women once had could be largely attributed to them being asked by authorities at health facilities during their visits in need of other health services. The motivation for screening is extrinsic (required by authorities) not intrinsic (induced by the knowledge within them).

The channels of communication will influence the level of knowledge of description of CC among the women because the knowledge is generally simple and as such easily communicated. Mass media by nature reaches out to more audiences than the other channels hence with such simple knowledge it affords to surpass organizational and community channels in influencing the level of knowledge of description of the disease. The complexity of the other aspects of the knowledge of CC hinders the influence of the channels on the level of them among the women. In other words, it is not the channels but the nature of the knowledge which has a bearing on the level of knowledge of the disease that the women will retain.

The channels of communication influence the level of utilization of the screening for CC among the women. Depending on which channel is used to communicate the general knowledge of the disease, women will utilize the screening services differently. Organizational and community channels

were related to more utilization of the services probably because primarily the knowledge is communicated at the health facilities where the services are offered hence there is no time lapse between hearing and deciding to be screened. On the contrary, when the knowledge is communicated either through mass media or interpersonal channels, there is a time lapse where even when the women are convinced of the necessity to be screened, they may change their mind over time as the convincing happens away from the location for screening (health facilities). During the time lapse, noise in terms of information against screening or misinformation will also contribute to the change of mind.

It is not every aspect of knowledge of CC that will influence the level of utilization of the screening services. Only knowledge of the disease that is seen by women as preventive will motive them to be screened. The description of CC makes known to them of the existence of the disease. The knowledge of the risk factors affords those that could have them to see the need to know if they could have it hence, they are screened. Women that know of the symptoms and might be experiencing some of them, are likely to be screening in order to detect the disease and get treatment if they have it. The knowledge of existing treatment of CC and that if detected early is curable likely lures the women into being screening in the hope that if they have it, they will get treatment early and be cured. On the other hand, not knowing or knowing the cause, the screening services and the side-effects has no bearing on the level of utilization of the screening services.

Not all channels of communication have a significant moderating effect of the aspects of knowledge of CC which influence the utilization of screening services of the disease. Only organizational and community channels have a significant moderating effect only on the knowledge of risk factors of CC influencing the

utilization of the screening services. This could be attributed to the likelihood that when the women are at the health facilities need other services and they are made aware of the risk factors of the disease that apply to them the motivation to be screened is prompted and the services are readily available. There could also be desire to assure themselves that they do not have the disease and hence stop. The women that are experiencing the symptoms on the other hand, might dread the prospect of finding out that they have the disease. Knowledge of prevention is probably valuable to those that have screened and found to be negative while that of treatment is relevant to those diagnosed with the disease. Therefore, even when symptoms, prevention and treatment of CC is communicated at the health facilities (through organizational and community channels) it will not influence the women to utilize the screen services.

Recommendations

The following recommendations are made in consideration of the findings of this study. Since organizational and community channels of communication have been found to be the means through which the majority of the women acquired the knowledge of CC, these channels should be the focus of the awareness drive by Government of Malawi through ministry of health. The health officials in public and private health facilities must ensure that they regularly hold health talks, discussing the disease with the women every time they visit the facilities for other services. This could be done before the services are offered. The discussion would have to be persuasive yet factual and also invite the women to do the screening for disease right away. This would ensure that there is no time lapse between being convinced of the need to be screened and the actual screening. Mass media which generally reaches out

to audiences, has to deliberately be made to include more programs on knowledge of CC than is currently the case. There are programs on different radios that target women with other kinds knowledge which could also incorporate knowledge of cervical.

There is need to emphasize more on the knowledge of risk factors, symptoms, prevention, treatment, and side-effects of treatment of CC. This knowledge has been found to be lacking among the women. In emphasizing this knowledge, considerations have to be made on the construction of the messages that are communicated. The sociodemographic characteristics of the women are some of such considerations. Since most rural women have low levels of education, the messages have to be simple and easy to understand yet factual.

The organizational and community channels should also highlight the knowledge of risk factors of CC more as this has been found to have a moderating effect of the utilization of CC screening. Risk factors being mostly behavior, health officials should strive to pointing out to the women but not condemning them why the behavior expose the women to the disease. Persuade those that have indulged in these behaviors of the need to be screening. Emphasizing on the benefits of screening.

Suggestions for Future Research

While there has been much research on the relationship between knowledge of CC and the utilization of its screening, little has been done on the moderating effect of the channels of communication on this relationship. This research might have been groundbreaking in this regard. There is therefore, a need to research more on this topic. Of particular interest would be why organizational and community channels of communication seems to moderate the relationship between knowledge of risk factors of CC and the utilization of its screening. The findings of such research would

enhance the construction of messages and the usage of the channels of communication to achieve even more utilization of screening services which in effect would help in curbing the menace that is CC.

APPENDICES

APPENDIX A
ETHICAL APPROVAL LETTERS



OFFICE OF THE CHAIRPERSON
INSTITUTIONAL SCIENTIFIC ETHICS REVIEW COMMITTEE
UNIVERSITY OF EASTERN AFRICA, BARATON
P.O. BOX 2500-30100, Eldoret, Kenya, East Africa

B3314072022

July 14, 2022

TO: Charles Fatsani Gunsaru
School of Postgraduate Studies, Department of Public Health
Adventist Unive Africa

Dear Charles,

RE: The Relationship Between Channels of Communication, Knowledge, and Utilization of Cervical Cancer Screening Services Among Women in Chileka, Rural Blantyre District, Malawi

This is to inform you that the Institutional Scientific Ethics Review Committee (ISERC) of the University of Eastern Africa Baraton has reviewed and approved your above research proposal. Your application approval number is UEAB/ISERC/33/7/2022. The approval period is 14th July, 2022 – 14th July, 2023.

This approval is subject to compliance with the following requirements;

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

Prior to commencing your study, you will be expected to obtain a research license from research licensing body in Malawi to allow you to carry out your research.

Sincerely yours,


Prof. Jackie K. Obey, PhD

Chairperson, Institutional Scientific Ethics Review Committee

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CHARTERED 1991



Telephone: Blantyre 01 875 332 /01 877 401
Fax: 01 875 430 / 01 872 551

Communication should be addressed to :
Blantyre District Council
Director of Health and Social Services
0882002533 ; gkawalazira@yahoo.co.uk



In reply please quote No.

.....

DISTRICT HEALTH
OFFICE P/BAG 66
BLANTYRE
MALAWI

20th July, 2022

The Secretary,
National Health Sciences Research Committee, P O Box
30377
Lilongwe 3. Malawi

Dear Sir/Madam,

APPROVAL LETTER FOR THE STUDY ENTITLED; THE RELATIONSHIP BETWEEN CHANNELS OF COMMUNICATION, KNOWLEDGE, AND UTILIZATION OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN IN CHILEKA, RURAL BLANTYRE DISTRICT, MALAWI

As per the above heading, I am glad to communicate to you that the study is duly approved by the district health research committee. The study was well presented and the author tackled the relevant questions that were put to him. The committee and the DHMT is pleased with this study.

We encourage the researcher to present the findings once the study is completed so that the district health office may benefit from his findings.

The office reminds the researcher that he should stick to the ethical conduct during the course of his study. We reserve the right to suspend the study should we note that the researcher is digressing from his study objectives or if we note any unethical conduct during the study.

For any questions or clarifications, please contact the undersigned. Yours

faithfully,

Dr Zaziwe Fatsani Gundah

CHAIRPERSON FOR BLANTYRE DISTRICT HEALTH RESEARCH COMMITTEE

Telephone: + 265 1 789 400
Facsimile: + 265 1 789 431
E-mail: research@health.gov.mw
All Communications should be addressed to: The Secretary for Health



In reply please quote No. MED/4/36c
Ministry of Health
P.O. Box 30377
Lilongwe 3
Malawi

5TH August 2022

Charles Fatsani Gunsaru
Adventist University of Africa

Dear Sir/Madam

Protocol # 22/08/2954: The Relationship between Channels of Communication, Knowledge, and Utilization of Cervical Cancer Screening Services among Women in Chileka, Rural Blantyre District, Malawi

Thank you for the above titled proposal that researcher submitted to the National Health Sciences Research Committee (NHSRC) for review. Please be advised that the NHSRC has **reviewed** and **approved** the above named study.

- **APPROVAL NUMBER** :2954
- The above details should be used on all correspondences, consent forms and documents as appropriate.
- **APPROVAL DATE** :05/08/2022
- **EXPIRATION DATE** :04/08/2023
This approval expires on **04/08/2023**. After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the NHSRC Secretariat should be submitted one month before the expiration date for continuing review.
- **SERIOUS ADVERSE EVENT REPORTING:** All serious problems having to do with subject safety must be reported to the NHSRC within 10 working days using standard forms obtainable from the NHSRC Secretariat.
- **MODIFICATIONS:** Prior NHSRC approval using forms obtainable from the NHSRC Secretariat is required before implementing any changes in the protocol (including changes in the consent documents). You may not use any other consent documents besides those approved by the NHSRC.
- **TERMINATION OF STUDY:** On termination of a study, a report has to be submitted to the NHSRC using standard forms obtainable from the NHSRC Secretariat.
- **QUESTIONS:** Please contact the NHSRC on phone number +265 999397913 or by email on mohdoccentre@gmail.com.
- **OTHER:** Please be reminded to send in copies of your final research results for our records (Health Research Database).

Kind regards from the NHSRC Secretariat.

For: **CHAIRPERSON, NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE**
Promoting Ethical Conduct of Research ¹



Executive Committee: Dr M. Joshua (Chairperson), Dr S. Mndolo(Vice-Chairperson)
Registered with the USA Office for Human Research Protections (OHRP) as an International IRB/IRB Number
IRB00003905 FWA00005976

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CERTIFICATE OF ETHICS APPROVAL

This is to certify that the National Health Sciences Research Committee
has reviewed and approved the study titled:

Study Title: Protocol # 22/08/2954: The Relationship between Channels of Communication, Knowledge, and Utilization
of Cervical Cancer Screening Services among Women in Chileka, Rural Blantyre District, Malawi

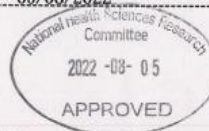
Investigator: Charles Fatsani Gunsaru

StartDate: 05/08/2022

EndDate: 04/08/2023

Date of issue: 05/08/2022

Dr Collins Mitambo
For Chairperson-NHSRC



Mr Billy Nyambalo
NHSRC Administrator

APPENDIX B

QUESTIONNAIRE

Questionnaire for Research Study on Relationship Between Channels of Communication, Knowledge, And Utilization of Cervical Cancer Screening Services Among Women in Chileka, Rural Blantyre District, Malawi

INTRODUCTION

My name is..... I am doing a research study on **“Relationship Between Channels of Communication, Knowledge and Utilization of Cervical Cancer Screening Services Among Women in Chileka, Rural Blantyre District, Malawi”**. It is in partial fulfillment for the requirements of the **Master of Public Health Degree program**. I would like to request for an opportunity to ask you to participate in the study by answering the question below. Where the answer is given, you will be asked to tick the appropriate answer, but if it is not given you are free to give your own answer.

The answers you will give and your personal details will be kept private and only used for academic purposes. This will guarantee your privacy and confidentiality. If you agree to participate in this study, please sign the space below to confirm your consent.

Participant Name:

Signature: Date:

Master of Public Health Student

Adventist University of Africa

SECTION A: SOCIODEMOGRAPHICS

1. Marital status: Single () Married () Separated () Divorced () Widowed ()
2. Age bracket: 30-34 () 35-39 () 40-44 () 45-49 ()
3. Education Level: No formal education () Primary () J.C.E. () M.S.C.E. () Tertiary () Others (Please specify) _____
4. Religion: Christian () Moslem () Others (Please specify) _____
5. Ethnic Group: Chewa () Yao () Ngoni () Lomwe () Mang'anya () Sena () Others (Please specify) _____
6. Village: _____
7. Group village: _____
8. Employment status: Unemployed () Civil servant () Self-employed () Student ()
9. Is there a health facility within your area? Yes () No ()

SECTION B: CHANNELS OF COMMUNICATION

10. Have you ever heard of any health promotion message on cervical cancer? Yes () No ()
11. If your answer to question 22 is yes, what is your main source of information? (Please tick only one).
Mass media ()
Organizational and community ()

Interpersonal ()

Others (Please specify) _____

SECTION C: CERVICAL CANCER KNOWLEDGE

12. Which of the following do you think best describes cervical cancer? (Tick where appropriate).

DESCRIPTION OF CERVICAL CANCER	YES	NO
Cancer that develops in the cervix		
Cancer that develops in the Vagina		
Cancer that develops in the Breast		
Cancer that develops in the uterus		

13. Which of the following causes cervical cancer? (Tick where appropriate).

CAUSE OF CERVICAL CANCER	YES	NO
Virus		
Human papillomavirus (HPV)		
Curse		
Bacteria		
Witchcraft		
Others (specify):		

14. Which of the following do you think are risk factors for developing cervical cancer? (Tick where appropriate).

RISK FACTORS	YES	NO
Having a weakened immune system		
Smoking		
Using birth control pills for a long time (5 or more years)		
Having given birth to three or more children.		
Having several sexual partners		
Infection by the human papillomavirus (HPV)		
Becoming sexually active at a young age (less than 18 years old)		
Having one partner who is considered high risk (HPV infected or has many sexual partners)		
Chlamydia infection		
Young age at first full-term pregnancy (less than 20 years)		
Economic status		
A diet low in fruits and vegetables		

15. Which of the following are symptoms of cervical cancer? (Tick where appropriate).

SYMPTOMS	YES	NO
Blood spots or light bleeding between or following periods.		
Menstrual bleeding that is longer and heavier than usual.		
Bleeding after intercourse, douching, or a pelvic examination.		
Increased vaginal discharge.		
Pain during sexual intercourse.		
Bleeding after menopause.		
Unexplained, persistent pelvic and/or back pain.		

16. Which of the following are measures that could help a person prevent developing cervical cancer? (Tick where appropriate).

PREVENTION OF CERVICAL CANCER	YES	NO
HPV Vaccination		
Regular cervical cancer screening		
Delaying first sexual intercourse until the late teens or older		
Limiting the number of sex partners		
Practicing safe sex by using condoms and dental dams		
Avoiding sexual intercourse with people who have had many partners		
Avoiding sexual intercourse with people who are infected with genital warts or who show other symptoms		
Quitting smoking		

17. Which of the following best describes screening for cervical cancer? (Tick where appropriate).

SCREENING OF CERVICAL CANCER	YES	NO
The testing of the cells of the cervix to detect precancerous changes or early cervical cancer		
Treatment of cervical cancer		
A means of controlling cervical cancer		
An opportunity to detect cervical cancer early and hence cure it		

18. Which of the following are procedures used for treating cervical cancer? (Tick where appropriate).

TREATMENT OF CERVICAL CANCER	YES	NO
Surgery		
Radiation therapy		
Chemotherapy		
immunotherapy		
Targeted therapy		
Herbal therapy		
Prayers and rituals		

19. Which of the following are side effects of treatments for cervical cancer? (Tick where applicable).

SIDE EFFECTS OF CERVICAL CANCER TREATMENT	YES	NO
Bleeding		
Infection		
Damage to the bladder and colon		
Nausea and vomiting		
Tiredness		
Diarrhea		
Changes to the skin		
Irritation to the bladder		
Pain in the vagina		
Changes in the menstrual cycle		
Anemia		

Pain when having sexual intercourse		
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SECTION D: UTILIZATION OF SCREENING SERVICES

20. How have you utilized cervical cancer screening services? (Please tick only one)

	YES	NO
Only once		
Once every 5 years		
Once every 3 years		
Never before		
Used them before but stopped		

21. If you have utilized the cervical cancer screening services before, why did you do so?

	YES	NO
To prevent the development of cervical cancer		
To allow for treatment of cervical cancer if detected		
Because the authorities encourage the utilization of cervical cancer screening		
My spouse insisted that I do		
My friends were doing it		

22. If you have never utilized cervical cancer screening before, why is that so?

	YES	NO
Not aware of the availability of the cervical cancer screening services		
Not aware of the benefits of cervical cancer screening		
Afraid of the risks associated with the cervical cancer screening		
It is against my beliefs		
There is no reason at all		

APPENDIX C

STATISTICAL ANALYSES

1. To identify the channels of communication through which knowledge of cervical cancer and its screening is communicated to the women of T/A Kuntaja, in rural Blantyre, Malawi.

Channel of Communication

	N	%
Interpersonal	43	10.0%
Mass media	124	29.0%
Organizational and community	255	59.6%
Missing System	6	1.4%

2. To assess the level of knowledge of cervical cancer and its screening among the women of T/A Kuntaja, in rural Blantyre, Malawi.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge of description of cervical cancer	426	2	4	3.17	.986
Knowledge of cause of cervical cancer	406	2	5	4.05	1.007
Knowledge of risk factors of cervical cancer	410	1	5	1.67	.864
Knowledge of symptoms of cervical cancer	382	1	6	1.52	.799
Knowledge of prevention of cervical cancer	406	1	5	1.54	.836
Knowledge of cervical cancer screening	428	0	2	1.46	.824
Knowledge of treatment of cervical cancer	408	0	7	3.00	.935
Knowledge of side effects of cervical cancer	352	1	6	1.59	.856
Knowledge of cervical cancer (Overall)	428	1.00	28.00	17.0280	3.91109
Valid N (listwise)	319				

3. To assess the level of utilization of cervical cancer screening services among the women of T/A Kuntaja, in rural Blantyre, Malawi.

Level of utilization of cervical cancer screening services

	N	%
No utilization (Never before)	124	29.0%

Low utilization (Only once/Used them before but stopped)	170	39.7%
Partial utilization (Once every 5 years)	4	0.9%
Full utilization (Once every 3 years)	130	30.4%

If you have utilized the cervical cancer screening services before, why did you do so?

	N	%
Because the authorities encourage the utilization of cervical cancer screening	124	29.0%
My friends were doing it	13	3.0%
My spouse insisted that I do	5	1.2%
To allow for treatment of cervical cancer if detected	81	18.9%
To prevent the development of cervical cancer	80	18.7%
Missing System	125	29.2%

If you have never utilized cervical cancer screening before, why is that so?

	N	%
Afraid of the risks associated with the cervical cancer screening	47	11.0%
It is against my beliefs	1	0.2%
Not aware of the availability of the cervical cancer screening services	7	1.6%
Not aware of the benefits of cervical cancer screening	14	3.3%
There is no reason at all	55	12.9%
Missing System	304	71.0%

4. To determine whether the channels of communication through which knowledge of cervical cancer and its screening is communicated makes a difference in the level of knowledge of cervical cancer and its screening by the women of T/A Kuntaja, in rural Blantyre, Malawi.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Knowledge of description of cervical cancer	Between Groups	7.907	2	3.953	4.116	.017
	Within Groups	402.456	419	.961		
	Total	410.363	421			
Knowledge of cause of cervical cancer	Between Groups	1.031	2	.515	.506	.603
	Within Groups	407.073	400	1.018		
	Total	408.104	402			
	Between Groups	2.439	2	1.219	1.636	.196

Knowledge of risk factors of cervical cancer	Within Groups	301.892	405	.745		
	Total	304.331	407			
Knowledge of symptoms of cervical cancer	Between Groups	.308	2	.154	.239	.788
	Within Groups	242.294	376	.644		
	Total	242.602	378			
Knowledge of prevention of cervical cancer	Between Groups	2.770	2	1.385	1.984	.139
	Within Groups	279.304	400	.698		
	Total	282.074	402			
Knowledge of cervical cancer screening	Between Groups	.316	2	.158	.231	.794
	Within Groups	286.578	419	.684		
	Total	286.893	421			
Knowledge of treatment of cervical cancer	Between Groups	.578	2	.289	.331	.718
	Within Groups	350.361	402	.872		
	Total	350.938	404			
Knowledge of side effects of cervical cancer	Between Groups	1.171	2	.586	.800	.450
	Within Groups	253.926	347	.732		
	Total	255.097	349			
Knowledge of cervical cancer (Overall)	Between Groups	41.293	2	20.647	1.472	.231
	Within Groups	5877.458	419	14.027		
	Total	5918.751	421			

Comparison of Level of Knowledge of Description of Cervical Cancer Oneway

Descriptives

Knowledge of description of cervical cancer

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Interpersonal	43	3.07	1.009	.154	2.76	3.38	2	4
Mass media	124	3.37	.932	.084	3.21	3.54	2	4
Organizational and community	255	3.07	.997	.062	2.95	3.19	2	4
Total	422	3.16	.987	.048	3.06	3.25	2	4

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Knowledge of description of cervical cancer	Based on Mean	18.075	2	419	<.001
	Based on Median	4.116	2	419	.017
	Based on Median and with adjusted df	4.116	2	417.417	.017
	Based on trimmed mean	18.355	2	419	<.001

ANOVA

Knowledge of description of cervical cancer

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.907	2	3.953	4.116	.017
Within Groups	402.456	419	.961		
Total	410.363	421			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Knowledge of description of cervical cancer

Games-Howell

(I) Channel of Communication	(J) Channel of Communication	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Interpersonal	Mass media	-.301	.175	.206	-.72	.12
	Organizational and community	-.001	.166	1.000	-.40	.40
Mass media	Interpersonal	.301	.175	.206	-.12	.72
	Organizational and community	.300*	.104	.012	.05	.55
Organizational and community	Interpersonal	.001	.166	1.000	-.40	.40
	Mass media	-.300*	.104	.012	-.55	-.05

*. The mean difference is significant at the 0.05 level.

5. To determine whether the channels of communication through which knowledge of cervical cancer and its screening is communicated makes a difference in the level of utilization of screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi.

Oneway

Descriptives

Level of utilization of cervical cancer screening services

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
Interpersonal	43	.53	.735	.112	.31	.76	0	3
Mass media	124	1.49	1.253	.112	1.27	1.71	0	3
Organizational and community	255	1.38	1.164	.073	1.24	1.53	0	3
Total	422	1.33	1.185	.058	1.22	1.44	0	3

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Level of utilization of cervical cancer screening services	Based on Mean	17.531	2	419	<.001
	Based on Median	5.831	2	419	.003
	Based on Median and with adjusted df	5.831	2	416.388	.003
	Based on trimmed mean	17.727	2	419	<.001

ANOVA

Level of utilization of cervical cancer screening services

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	31.189	2	15.594	11.667	<.001
Within Groups	560.027	419	1.337		
Total	591.216	421			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Level of utilization of cervical cancer screening services

Games-Howell

(I) Channel of Communication	(J) Channel of Communication	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Interpersonal	Mass media	-.957*	.159	<.001	-1.33	-.58
	Organizational and community	-.849*	.134	<.001	-1.17	-.53
Mass media	Interpersonal	.957*	.159	<.001	.58	1.33
	Organizational and community	.108	.134	.702	-.21	.42
Organizational and community	Interpersonal	.849*	.134	<.001	.53	1.17
	Mass media	-.108	.134	.702	-.42	.21

*. The mean difference is significant at the 0.05 level.

6. To assess the relationship between the level of knowledge of cervical cancer and the utilization of screening services by the women of T/A Kuntaja, in rural Blantyre, Malawi.

Correlations			
		Knowledge of Cervical Cancer	Level of utilization of cervical cancer screening services
Knowledge of Cervical Cancer (Overall)	Pearson Correlation	1	.159**
	Sig. (2-tailed)		<.001
	N	428	428
Level of utilization of cervical cancer screening services	Pearson Correlation	.159**	1
	Sig. (2-tailed)	<.001	
	N	428	428
**. Correlation is significant at the 0.01 level (2-tailed).			

Correlations										
		Knowledge of description of cervical cancer	Knowledge of cause of cervical cancer	Knowledge of risk factors of cervical cancer	Knowledge of symptoms of cervical cancer	Knowledge of prevention of cervical cancer	Knowledge of cervical cancer screening	Knowledge of treatment of cervical cancer	Knowledge of side effects of cervical cancer treatment	Level of utilization of cervical cancer screening services
Knowledge of description of cervical cancer	Pearson Correlation	1	-.001	.083	.044	-.009	-.011	.127*	.004	.172*
	Sig. (2-tailed)		.992	.092	.386	.858	.827	.010	.934	<.001
	N	426	406	410	382	406	426	408	352	426
Knowledge of cause of cervical cancer	Pearson Correlation	-.001	1	-.076	.016	-.044	-.045	.030	-.058	.032
	Sig. (2-tailed)	.992		.131	.765	.387	.366	.557	.277	.521
	N	406	406	397	370	391	406	391	347	406
Knowledge of risk factors of cervical cancer	Pearson Correlation	.083	-.076	1	.452**	.536**	.012	.284**	.343**	.145*
	Sig. (2-tailed)	.092	.131		<.001	<.001	.810	<.001	<.001	.003
	N	410	397	410	375	394	410	395	344	410
Knowledge of symptoms of cervical cancer	Pearson Correlation	.044	.016	.452**	1	.479**	.053	.401**	.430**	.132*
	Sig. (2-tailed)	.386	.765	<.001		<.001	.303	<.001	<.001	.010
	N	382	370	375	382	375	382	370	336	382
Knowledge of prevention of cervical cancer	Pearson Correlation	-.009	-.044	.536**	.479**	1	.026	.229**	.354**	.084
	Sig. (2-tailed)	.858	.387	<.001	<.001		.604	<.001	<.001	.092
	N	406	391	394	375	406	406	395	347	406

cancer										
Knowledge of cervical cancer screening	Pearson Correlation	-.011	-.045	.012	.053	.026	1	-.003	-.035	-.003
	Sig. (2-tailed)	.827	.366	.810	.303	.604		.955	.518	.956
	N	426	406	410	382	406	428	408	352	428
Knowledge of treatment of cervical cancer	Pearson Correlation	.127*	.030	.284**	.401**	.229**	-.003	1	.254**	.125*
	Sig. (2-tailed)	.010	.557	<.001	<.001	<.001	.955		<.001	.012
	N	408	391	395	370	395	408	408	346	408
Knowledge of side effects of cervical cancer treatment	Pearson Correlation	.004	-.058	.343**	.430**	.354**	-.035	.254**	1	.030
	Sig. (2-tailed)	.934	.277	<.001	<.001	<.001	.518	<.001		.573
	N	352	347	344	336	347	352	346	352	352
Level of utilization of cervical cancer screening services	Pearson Correlation	.172**	.032	.145**	.132**	.084	-.003	.125*	.030	1
	Sig. (2-tailed)	<.001	.521	.003	.010	.092	.956	.012	.573	
	N	426	406	410	382	406	428	408	352	428
*. Correlation is significant at the 0.05 level (2-tailed).										
**. Correlation is significant at the 0.01 level (2-tailed).										

7. To assess the moderating effect of channels of communication on the relationship between the level of knowledge and utilization of screening services among the women of T/A Kuntaja in rural Blantyre, Malawi.

Regression

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Interaction between channel of communication and knowledge of	.	Enter

	cervical cancer, Knowledge of Cervical Cancer ^b					
a. Dependent Variable: Level of utilization of cervical cancer screening services						
b. All requested variables entered.						
Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.182 ^a	.033	.028	1.168		
a. Predictors: (Constant), Interaction between channel of communication and knowledge of cervical cancer, Knowledge of Cervical Cancer						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.486	2	9.743	7.140	<.001 _b
	Residual	571.730	419	1.365		
	Total	591.216	421			
a. Dependent Variable: Level of utilization of cervical cancer screening services						
b. Predictors: (Constant), Interaction between channel of communication and knowledge of cervical cancer, Knowledge of Cervical Cancer						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.443	.251		1.768	.078
	Knowledge of Cervical Cancer	2.798	.769	.175	3.640	<.001
	Interaction between channel of communication and knowledge of cervical cancer	.061	.063	.046	.956	.340
a. Dependent Variable: Level of utilization of cervical cancer screening services						

Moderating Effect of Channels of Communication on the Relationship Between Knowledge of Risk Factors of Cervical Cancer and Utilization of Its Screening Services

Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Knowledge of risk factors of cervical cancer, Interaction between communication channel and knowledge of risk factors of cervical cancer ^b	.	Enter

a. Dependent Variable: Level of utilization of cervical cancer screening services

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.201 ^a	.040	.035	1.167

a. Predictors: (Constant), Knowledge of risk factors of cervical cancer, Interaction between communication channel and knowledge of risk factors of cervical cancer

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.119	2	11.559	8.483	<.001 ^b
	Residual	551.879	405	1.363		
	Total	574.998	407			

a. Dependent Variable: Level of utilization of cervical cancer screening services

b. Predictors: (Constant), Knowledge of risk factors of cervical cancer, Interaction between communication channel and knowledge of risk factors of cervical cancer

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.989	.126		7.867	<.001
	Interaction between communication channel and knowledge of risk factors of cervical cancer	.155	.057	.132	2.701	.007
	Knowledge of risk factors of cervical cancer	.212	.067	.154	3.167	.002

a. Dependent Variable: Level of utilization of cervical cancer screening services

Correlations

Channel of Communication = Interpersonal

Correlations^a

		Knowledge of risk factors of cervical cancer	Level of utilization of cervical cancer screening services
Knowledge of risk factors of cervical cancer	Pearson Correlation	1	-.165
	Sig. (2-tailed)		.291
	N	43	43
Level of utilization of cervical cancer screening services	Pearson Correlation	-.165	1
	Sig. (2-tailed)	.291	
	N	43	43

a. Channel of Communication = Interpersonal

Channel of Communication = Mass media

Correlations^a

		Knowledge of risk factors of cervical cancer	Level of utilization of cervical cancer screening services
Knowledge of risk factors of cervical cancer	Pearson Correlation	1	.155
	Sig. (2-tailed)		.092
	N	120	120
Level of utilization of cervical cancer screening services	Pearson Correlation	.155	1
	Sig. (2-tailed)	.092	
	N	120	124

a. Channel of Communication = Mass media

Channel of Communication = Organizational and community

Correlations^a

		Knowledge of risk factors of cervical cancer	Level of utilization of cervical cancer screening services
Knowledge of risk factors of cervical cancer	Pearson Correlation	1	.230**
	Sig. (2-tailed)		<.001
	N	245	245
Level of utilization of cervical cancer screening services	Pearson Correlation	.230**	1
	Sig. (2-tailed)	<.001	
	N	245	255

** . Correlation is significant at the 0.01 level (2-tailed).

a. Channel of Communication = Organizational and community

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BACHELOR OF BUSINESS ADMINISTRATION IN MANAGEMENT- cum laude (2012) – University of Eastern Africa, Baraton, Kenya.

WORK EXPERIENCE:

1. **JULY 2022 – TO DATE: Y.O.D.A COORDINATOR** - Plan International, Malawi, Country Office

RESPONSIBILITIES:

- Ensure organisational preparedness for the installing and utilization of new program implementation and monitoring system (Y.O.D.A)
- Training program staff in the utilization of Y.O.D.A
- Setting up and maintenance of the country strategy, programs, and projects in PMERL (the Monitoring and Evaluation component of Y.O.D.A)
- Provision of technical support to staff in all Plan International Malawi offices

2. **JULY 2020 – JUNE 2022: Y.O.D.A Officer** - Plan International, Malawi, Country Office

RESPONSIBILITIES:

- Ensure organisational preparedness for the installing and utilization of new program implementation and monitoring system (Y.O.D.A)
- Training program staff in the utilization of Y.O.D.A
- Setting up and maintenance of the country strategy, programs, and projects in PMERL (the Monitoring and Evaluation component of Y.O.D.A)
- Provision of technical support to staff in all Plan International Malawi offices
- Support program staff in developing and writing of POs for the PAs and Country Office
- Support program staff in maintenance of POs for the PAs and Country Office
- Writing Project Completion Reports (PCRs) to facilitate the closure of POs for the PAs and Country Office
- Support the Grant systems specialist in grant closures

3. **JANUARY 2020 – TO JUNE 2020: ASSISTANT SYSTEMS SUPPORT OFFICER** - Plan

International, Malawi, Country Office

RESPONSIBILITIES:

- Support program staff in developing and writing of POs for the PAs and Country Office

- Support program staff in maintenance of POs for the PAs and Country Office
 - Writing Project Completion Reports (PCRs) to facilitate the closure of POs for the PAs and Country Office
 - Support the Grant systems specialist in grant closures
4. **JULY 2019 – DECEMBER 2019: DISTRIBUTION OFFICER** – Plan International Malawi, Disasters Emergency Committee (DEC) Project (A humanitarian response to cyclone Idai). **RESPONSIBILITIES:**
- Developing distribution plans in collaboration with project thematic leads and ensuring timely implementation of plan.
 - Facilitate and support the identification, verification, and registration of beneficiaries for the thematic areas of the project.
 - Facilitate the identification and orientation of distribution volunteers for the respective distribution centres on PSEA and the distribution process.
 - Conduct mobilization and sensitization of beneficiaries
 - Facilitate the distribution process in collaboration with respective village committees and distribution volunteers ensuring that the minimum agreed standards are upheld.
 - Manage stock by ensuring that reconciliation of commodities is conducted before and after distribution
 - Facilitate the establishment of child friendly CFM at the respective distribution centres.
 - Conduct post distribution monitoring and document the findings.
 - Prepare and maintain source data for computer entry by compiling and sorting information.
 - Timely, quality and accurate development and sharing of reports.
5. **FEBRUARY 2017 – JUNE 2019: PROJECT FACILITATOR (DISTRIBUTION)** – Plan International, Malawi, Dzaleka Refugee Camp.
- RESPONSIBILITIES:**
- Facilitating the distribution of food rations and non-food items to refugees
 - Conducting post distribution monitoring every three months
 - Analysing data from post distribution monitoring
 - Writing post distribution monitoring reports
 - Developing and writing of POs for the Dzaleka UNHCR project
 - Modifications of POs for the Dzaleka UNHCR project
 - Writing Project Completion Reports (PCRs) to facilitate the closure of POs for the Dzaleka UNHCR project
 - Assisting the M&E department of the Lilongwe PA in production of monthly progress reports and other assigned duties (facilitated in recruitment and orientation of research assistants for the NORAD baseline study, and supervised the study)
6. **DECEMBER 2016 – FEBRUARY 2017: FOOD DISTRIBUTION FACILITATOR** – Plan International, Malawi, Kasungu (MVAC 2016/17 RESPONSE).
- RESPONSIBILITIES:**
- Facilitating the distribution of relief food rations to venerable beneficiaries

- Facilitating cash transfers to venerable beneficiaries
- Identification and registering of venerable beneficiaries

7. **JANUARY 2015 – MAY 2015: PRINCIPAL-** Awesome Private secondary school, Naperi, Blantyre.

RESPONSIBILITIES:

- General and Financial Administration of the school
- Recruitment of staff and overall monitoring of staff and student performance
- Teaching Mathematics and Business studies.

8. **SEPTEMBER 2012 – AUGUST 2013: DEPUTY PRINCIPAL-** Chileka Private secondary school, Chileka, Blantyre.

RESPONSIBILITIES:

- Assisting the Principal in General and Financial Administration the school • Monitoring of staff and student performance
- Teaching Mathematics and Business studies.

HOBBIES:

- **Gardening and Landscaping**
- **Playing Chess**
- **Watching football**

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