KNOWLEDGE, ATTITUDE AND PRACTICES OF HIV INFECTED WOMEN ON CERVICAL CANCER SCREENING AT MUSISO MISSION HOSPITAL, MASVINGO PROVINCE, ZIMBABWE

RESEARCH PROJECT

By

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DECLARATION

I **Olivia Matangaidze** declare that **KNOWLEDGE, ATTITUDE AND PRACTICES OF HIV INFECTED WOMEN ON CERVICAL CANCER SCREENING AT MUSISO MISSION HOSPITAL, MASVINGO PROVINCE, ZIMBABWE** is my own work and that all the sources that I have used and quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted for any other degree at any institution.

Signature :

Date Signed :

DEDICATION

This research is dedicated to all my relatives who died of cancer, may your souls rest in peace.

Also to the rest of the family, I encourage you to practice healthy life styles.

ACKNOWLEDGEMENTS

ABSTRACT

Background

Cervical cancer is the 2nd most common cancer in women globally representing 13% of female cancers and accounting for 11% of the total cancer deaths (Ahmedin et al.2011). Several studies demonstrated the association between HIV and HPV. In Zimbabwe the prevalence of HIV/AIDS is high and cervical cancer is the leading cause of cancer deaths among women of all age groups. The aim of the study was to determine the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening at Musiso Hospital, Masvingo Province, Zimbabwe.

Methods

208 self administered questionnaires were used with a 100 per cent response rate. Quantitative data were analysed using STATA statistical package version 12 for descriptive and inferential statistics. Chi-squared tests were done for hypothesis testing at 5 per cent level of significance and 95 per cent confidence level. Multiple variable logistic regressions models were also used to assess association between outcomes of interest and socio-demographic characteristics. All open ended questions were analysed using qualitative methods.

Results

Out of the 208 participants, 45 (21.6 per cent) respondents claimed to know what cervical cancer is. About 55.3 per cent said cervical cancer is preventable. The majority (92.8 per cent) did not know any screening tests. Just above three quarters (77.3 per cent) of the respondents believed they were at risk of having cervical cancer. About 9 per cent (18) of all participants had screened for cervical cancer before and 95.8 per cent respondents reported would like to screen for cervical cancer in the future.

Conclusion

HIV infected women at Musiso mission hospital were found to be having inadequate knowledge, positive attitude and inadequate practices on cervical cancer and cervical cancer screening. There is need to equip these women with knowledge on cervical cancer and cervical cancer screening to increase cervical cancer screening uptake.

Key Concepts: knowledge, attitude, practice, screening, cervical cancer

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DEFINITIONS OF KEY CONCEPTS

For the purpose of this study the following terminology is defined and further explained.

Awareness

Awareness is described as appreciation, familiarity, knowledge, observation or understanding (Oxford Concise English Dictionary 1995). For this study awareness means "being familiar and also knowledgeable about cervical cancer and cervical cancer screening." It also relates to the experience and perceptions influencing the uptake of cervical screening services.

Cervix

The cervix is the lower part or neck of the uterus forming the opening to the vagina. It is divided into 2 parts, namely the endo-cervix, internal part and ecto-cervix, the outer part that is next to the vagina (Pocket Medical Dictionary, 2003: 57).

Cervical cancer

Cervical cancer relates to the actual neoplasm cancerous cell changes in the cervix commonly referred to as carcinoma in situ (cancerous growth localised) and invasive cancer (cancer spreads to nearby organs).

Cervical screening

For the purpose of this study cervical screening relates to early detection of pre-cancer lesions through a Papanicolau smear (Pap) or Visual Inspection with Acetic acid (VIA)

Papanicolau test

A Papanicolau test is a screening tool used to detect cervical abnormalities. Mucus and cells are collected from the ectocervix and endocervix, by scraping and then fixed onto a glass slide and sent to the Cytopathology laboratory for assessment (American Cancer Society, 2009:10).

Human Immunodeficiency Virus (HIV) infection

HIV infection is an infection by one of the two viruses that progressively destroy white blood cells called lymphocytes, causing Acquired Immunodeficiency Syndrome (AIDS) and other diseases that result from the impaired immunity (Berkow et al, 1997).

LIST OF ABBREVIATIONS

AIDS   Acquired Immuno Deficiency Syndrome

HIV   Human Immuno-Deficiency Virus

Pap   Papanicolau smear test

VIA   Visual Inspection with Acetic Acid

HPV   Human Papilloma Virus

FCH   Family and Child Health

OI   Opportunistic Infection

CIN   Cervical intra-epithelium neoplasia

SIL   Squamous intra-epithelium lesion

HAART   Highly Active Antiretroviral Treatment

IARC   International Agency for Research on Cancer

MOH& CW   Ministry of Health and Child Welfare

ACCP   Alliance for Cervical Cancer Prevention

WHO   World Health Organisation

ICO   Institut Catala d' Oncologia (Catalan Insitute of Oncology)

STI   Sexually Transmitted Infection

CDC   Centers for Disease Control

STATA   Statistical Analysis Software Package by Stata-Corp

HSIL   High-grade Squamous Intraepithelial Leisions

OD   Odds Ratio

BMC   Bio Med Central

KAP   Knowledge Attitude and Practices

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1. INTRODUCTION

1.1 INTRODUCTION AND BACKGROUND

Cervical cancer is malignant neoplasm of the cervix uteri or cervical area (Ndlovu, 2011). It may present with vaginal bleeding but symptoms may be absent until the cancer is in its advanced stages (WHO/ICO Information Centre on Human Papilloma Virus (HPV) and Cervical Cancer, 2009). The HPV which spreads through sexual intercourse is believed to be responsible for almost all cervical cancers (Cervical Cancer Health Guide, 2008). Although the HPV family of viruses includes more than 100 different viral genotypes, HPV 16 and 18 were identified in about 70% of cervical cancer cases, (GulianoA, 2007), while HPV 6 and 11 can cause genital warts (de Villiers EM, 2004).

It has been widely believed that invasive cervical cancer develops from dysplastic precursor lesions, progressing steadily from mild to moderate to severe dysplasia, then to carcinoma in situ, and finally to cancer. It now appears that the direct precursor of cervical cancer is high-grade dysplasia, which in about a third of instances may progress to cervical cancer over a period of 10–15 years, while most low-grade dysplasias regress spontaneously (Ndlovu, 2011).

The burden of cervical cancer is increasing in developing countries due to transmissible diseases such as human immune-deficiency virus (HIV) and HPV. Research has shown that HPV is the cause of about 70% of all cervical cancers (WHO/ICO, 2010). Leroy et al., (1999) and Tate and Anderson (2002) have shown a statistically significant relationship between HIV, HPV and cervical abnormalities. Because women receiving antiretroviral therapy are observed on a regular basis, they can also receive the continuity of care needed for cervical cancer screening (Franceschi and Jaffe, 2007) if the services are made accessible to them and awareness is also created among the women.

Prevention, early detection, diagnosis, treatment, psychosocial support, and palliative care are components of cancer control that can reduce the cancer burden (Nnoudu et al., 2010).

The American Cancer Society (2012), recommends that all women should begin cervical cancer testing (screening) at age 21. Women aged 21 to 29, should have a Pap test every 3 years. Women who are at high risk of cervical cancer because of a suppressed immune system (for example from HIV infection, organ transplant, or long term steroid use) need to be screened more often. Treatment of cervical cancer consists of surgery in early stages, chemotherapy and radiotherapy in advanced stages of the disease (WHO/ICO, 2010). Treatment of precancerous lesions involves the removal or destruction of affected cells usually by LEEP, cryotherapy or cold knife conisation (WHO, 2013).

Although cervical cancer can be treated if precancerous lesions are diagnosed early by screening, in most sub Saharan countries disease screening is not routine. According to Chokunonga et al., (2003), the concept of routine check up is not well known in the African tradition and in most cases people access health care when they have disease symptoms and not for check up.

Pap smear remains the most common screening test for cervical cancer. Unfortunately many less developed countries do not have adequate resources to implement cytology-based prevention programs (Gaffikin et al., 2007). An alternative, low-cost test, visual inspection using acetic acid (VIA), has emerged for use in low-resource settings where it can be performed by auxiliary health professionals Gaffikin et al .,(2007), following the exploration of the benefits of VIA as an alternative screening test which was recommended by World Health Organisation (WHO) in 1994. VIA is similar to colposcopy in that acetic acid is applied and any aceto-white lesion is visualized, although with VIA there is no magnification (Gaffikin et al., 2007).

Cervical cancer screening awareness, positive attitude on the disease and availability of resources are key factors in implementing cervical cancer screening programs. In a study done by Mupepi (2011) in Zimbabwe, 90% of the participants had never accessed cervical cancer screening and 81% had no previous knowledge of cervical cancer screening tests. In the same study barriers to cervical cancer screening were identified as lack of knowledge on cervical cancer and cervical screening tests, lack of advice and encouragement by health professionals to access cervical screening tests, unaffordable cost, inaccessible health facilities because of distance and some females did not believe they were at risk for cervical cancer because it was

not in their family history. These results show lack of knowledge and negative attitude on the disease.

Knowledge about the disease and screening options are therefore important in determining appropriate health seeking behaviours with the aim to prevent invasive cancer and reduce mortality rates (Ndlovu, 2011).

1.2. RESEARCH PROBLEM

1.2.1 Source and background of the problem

Cervical cancer though preventable has become the leading cause of cancer deaths among women of all age groups in Zimbabwe with a rate of 20.0 per 100 000 women per year (HPV Information Center: Summary Report, 2010).

In 2001, the Ministry of health and child welfare produced the national guidelines on the management of cancers of the reproductive health system where the basic principles of management were identified as information, education, communication, counseling and screening for cervical cancer using visual inspection with acetic acid (VIA) and PAP smear (Zimbabwe Reproductive Health Service Delivery guide line, 2001). The screening tests should be done to all women of child bearing age who are sexually active as well as post menopausal women and is to be initiated after first intercourse (Zimbabwe Reproductive Health Service Delivery guide line, 2001). Women with HIV/AIDS/STIs should have regular screening since they are at high risk for cervical cancer (Zimbabwe Reproductive Health Service Delivery guide line, 2001).

1.2.2 Statement of the Problem

Unlike screening programs in developed countries which target the risk groups, in Zimbabwe there is no mass screening policy, the woman who are screened include those who seek family planning services, those with gynaecologic symptoms and those who are knowledgeable about the disease, financially stable and seek services from their health care providers (Mupepi et al.,

2011). Little is known about the women who are in the high risk group like the women in the rural areas who are not financially stable and the HIV infected women.

In spite of the guidelines being in place, at Musiso Mission Hospital in Zaka district of Masvingo province, Zimbabwe, there appears to be no patients attending Family and Child Health (FCH) department (a maternal and child health clinic within the hospital where screening for cervical cancer is done) either as self-referrals or referred from opportunistic infection (OI) clinic (where HIV infected people are consulted for their monthly antiretroviral treatment, also within the hospital) for cervical cancer screening and yet according to Agaba et al., (2009), women living with HIV infection have a higher risk of human papilloma virus infection and cervical cancer than do HIV negative women. HIV infected women should therefore be knowledgeable about the risk of cervical cancer and have screening done as part of their management if they are to receive comprehensive care. The situation at Musiso hospital prompted the researcher to find out what is the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening.

1.3. Literature Review

Cancer of the cervix occurs as a result of abnormal cell changes in the tissue layers of the cervix (Ndlovu, 2011). It may appear as a cauliflower-like growth that bleeds easily on contact (Smeltzer and Bare, 2004). Most cervical cancers begin in the cells lining the cervix and the cells do not suddenly change into cancer; instead the normal cells of the cervix first gradually develop precancerous changes that turn into cancer (American Cancer Society, 2012). Doctors use several terms to describe these precancerous changes, including cervical intraepithelial neoplasia (CIN), squamous intraepithelial lesion (SIL), and dysplasia (Ndlovu, 2011). These changes can be detected by the Pap smear and treated to prevent the development of cancer (American Cancer Society, 2012). If left undetected, pre-cancer lesions can develop into cervical cancer and eventually spread to adjacent organs such as the uterus and ovaries, bladder, intestines and liver (Ndlovu, 2011).

Screening for cervical cancer is important so as to ensure early detection of pre-cancer lesions to reduce the incidence of mortality due to cervical cancer in the population.

Knowledge and the attitudes of the women on screening services are important in improving the understanding of factors influencing the uptake of diagnostic services available (Ndlovu, 2011).

Cervical cancer tends to occur in midlife, with most cases found in women younger than 50 and rarely develops in women younger than 20 (American Cancer Society, 2012).
Many older women do not realize that the risk of developing cervical cancer is still present as they age. More than 20% of cases of cervical cancer are found in women over 65(American Cancer Society, 2012). However these cancers rarely occur in women who have been getting regular tests to screen for cervical cancer before they were 65 (American Cancer Society, 2012)

Risk factors for cervical cancer

Several risk factors increase the chance of developing cervical cancer. Women without any of these risk factors rarely develop cervical cancer (American Cancer Society, 2012).
 Although these risk factors increase the odds of developing cervical cancer, many women with these risks do not develop this disease (Ndlovu, 2011). When a woman develops cervical cancer or pre-cancerous changes, it may not be possible to say with certainty that a particular risk factor was the cause (American Cancer Society, 2012).

Infection with HPV which is a sexually transmitted virus is believed to be the major risk factor for developing cervical cancer (Cervical Cancer Health Guide, 2008). Smoking is another risk factor due to the fact that it exposes the body to many cancer causing chemicals which when absorbed through the lungs are carried throughout the body in the blood causing harm to other organs for example by damaging DNA of the cervix cells contributing to development of cancer (American cancer society, 2012).

Scientists believe that HIV and any conditions which suppress the body's immune system places the women at risk of HPV infection and that immune system is considered important in destroying cancer cells (American cancer society, 2012).Having multiple sexual partners also predisposes the women to STIs including HPV infection (Zimbabwe Reproductive Health Service Delivery Guidelines, 2001)

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Continued use of oral contraceptives, multiparity and initiating sexual intercourse at an early age are also believed to be risk factors for developing cervical cancer, (Zimbabwe Reproductive Health Service Delivery Guidelines, 2001).

According to American Cancer Society (2012), poverty is also a risk factor for developing cervical cancer because people with low income have difficulties to access adequate health services including Pap smear.

Burden of cervical cancer

Worldwide women make up almost one half of the total number of persons living with HIV infection and a total of 13 million of these women live in the Sub Saharan Africa (Franceschi and Jaffe, 2007).

According to UNAIDS/WHO (2008), the adult prevalence of HIV/AIDS in Zimbabwe as of 2007 is 7.7% of the population and the prevalence is greater among women with a ratio of 3:1.

On the other hand, according to Globocan 2008 statistics in Ahmedin et al., 2011, cervical cancer is the 2nd most common cancer in women globally representing 13% of female cancers and accounting for 11% of the total cancer deaths. Low- and middle- resource countries, where women have been hit hardest by the AIDS epidemic, have historically also had a very high prevalence of human papillomavirus (HPV) infection (Franceschi et al., 2006) and a high incidence of cervical cancer (Parkin et al., 2003). Over 80% of the women newly diagnosed with cervical cancer live in developing countries and most of them are diagnosed when the disease is advanced (WHO, 2006), due to poor implementation of screening programs in low resource settings.

Relationship of HIV, HPV and cervical cancer

Because both HIV infection and HPV infection are sexually transmitted, the two infections are often found together (Clifford GM, Gonc MA and Franceschi S, 2006). Several studies, (Anorlu,

2008, Massad et al., 1999, Duerr et al., 2001 and Ahdieh et al., 2000), have demonstrated the association between HIV and HPV. In the Women's Interagency HIV Study done at six different cities around United States (Massad et al., 1999), cervical cytology findings were abnormal in 38% of HIV-positive women compared with 16% of the HIV-negative women.

Risk factors for abnormal cytologic findings included CD4+ level less than 200/mm3, HPV DNA positivity, and prior history of abnormal cytology findings (Massad et al., 1999).

In another multisite American study of HIV positive women known as HIV Epidemiology Research Study, CIN was more common among HIV-positive women than HIV-negative control subjects, in association with oncogenic HPV infection and HIV positivity with lower CD4+ levels (Duerr et al., 2001), and in a study of HIV positive and high-risk HIV-negative women in Baltimore, 13% of HIV-positive women had abnormal cytologic findings compared with 2% of HIV-negative women (Ahdieh et al., 2000).

A higher prevalence of CIN has also been shown in Africa among HIV-positive Zimbabwean women attending family planning clinics in Harare compared with HIV-negative women. Abnormal cervical cytology was found in 26% of HIV-positive women compared with 7% HIV-negative women (Chirenje et al., 2002).

In addition, as a result of HIV-induced immune impairment, there is also an increased probability that HPV infection will become persistent in HIV-infected women and evolve into precancerous and cancerous lesions of the cervix uteri (Strickler et al., 2005). In a study in Baltimore, type-specific HPV infection was assessed at 6-month intervals for HIV-positive and HIV negative women (Ahdieh et al., 2000). HIV-positive women were more likely to have HPV persistence.

The evidence of the association between HIV and cervical cancer has led to cervical cancer being included in the Centre for Diseease Control (CDC) list of AIDS–defining illnesses in 1993 (CDC, 1993), and the recommendation that HIV positive women received two pap smears at six months interval within the first year of HIV diagnosis followed by annual smear tests if these are negative compared with recommended screening every 2-3 years for the general population (CDC, 1998; Rabiu et al., 2011).

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Unlike other AIDS-defining cancers such as Kaposi sarcoma and Non-Hogkins lymphoma, the incidence of invasive cervical cancer did not decrease with the arrival of highly active anti-retroviral therapy (HAART) (Heard, 2009) and since women on HAART have an increased life expectancy, they may have a greater life time risk of developing dysplasia and cervical cancer (Franceschi and Jaffe, 2007; Rabiu et al., 2011).

Although cervical cancer is included as an AIDS-defining illness, the incidence and associated mortality rate from cervical cancer is low in countries with routine cervical cytology screening (Rabiu et al., 2011). In developed countries, the widespread use of cervical screening programs has reduced the incidence of invasive cervical cancer by 50% or more (American Cancer Society, 2009:10). In the United States, for example, a high percentage of women who receive treatment for HIV undergo annual Pap smears, and the vast majority of cases of cervical carcinoma among these women are detected at the in situ stage (Oster et al., 2009). Pap smear screening can identify potentially precancerous changes and treatment of high-grade changes can prevent the development of cancer.

In contrast to high-resource countries, middle- and low-resource countries provide little or no access to cervical cancer screening for women, regardless of whether they have HIV infection or not (International Agency for Research on Cancer :IARC, 2005). Before the introduction of antiretroviral therapy, the lack of cervical cancer screening for HIV-infected women probably had little influence on their life expectancies because of high competing mortality associated with other causes, such as tuberculosis and opportunistic infections, but the picture is now rapidly changing (Franceschi and Jaffe, 2007). According to the Joint United Nations Programme on HIV/AIDS, access to antiretroviral therapy in low- and middle resource countries increased from 240,000 persons in 2000 to 2.0 million persons in 2006 (i.e., there is access for 28% of those in need) (United Nations Programme on AIDS/World Health Organization, 2007). Given the longer life spans afforded by successful HAART therapy and the risk that progression to cancer may occur if CIN is left untreated for a sufficiently long period, the data to date

reinforce the need for continued vigilant screening and treatment of CIN in HIV-positive women (Palefsky, 2003). This shows that cervical cancer needs to be recognised as an important health problem especially in sub Saharan Africa.

The success of cervical cancer screening programs depends on a number of factors, such as coverage of the right target women, excellent follow-up service, early management of pre-cancer lesions and resource availability (Pollack et al., 2007) not leaving out clear policies and procedures, competent staff and awareness among the women to promote voluntary screening (Mupepi et al., 2011).

Globally, there is need to create awareness and encourage health seeking behaviour on cervical cancer and cervical cancer screening. In developed countries most women have knowledge of cervical cancer and HPV, for example in a study done in United States, 60% of women had heard of HPV (n=129); 64% knew HPV caused cervical cancer (n=82); 60% knew HPV was spread through sexual contact (n=79); and 85% did not think that HPV would go away without treatment (n=111).

About (40%) of the women had no specific reason for not having a more recent Pap test (Wigfall, et al, 2010). This shows the need to promote cervical cancer screening among women in general. Donders et al., (2009) showed that awareness of the cause of cervical cancer and HPV vaccines was very high and above 78% in Belgium population.

Several studies (Hoque and Hoque, 2009), (Othman et al., 2009), (Anorlu et al., 2010) and (Rabiu et al., 2011) have shown poor knowledge of the disease in Africa which even cuts across different literacy levels). In a study done in Nigeria, (Anorlu et al., 2010), the awareness of cervical cancer among HIV infected women was poor, 74.4% had never had any form of cervical cancer screening, about 90% had never heard of HPV and 92.3% did not know that HPV causes cervical cancer, 82.1% did not know that HPV is contracted via sexual intercourse. Results from a study done in Malaysia (Othman et al., 2009) showed that knowledge about Pap smear was not optimal. Although most (63.3%) of the cancer patients had heard about the Pap smear, from

health personnel (39.4%), friends and relatives (10.0%) or the media (5.9%), most had not done the test.

In a descriptive cross sectional study done at a teaching hospital in Lagos by Rabiu et al., (2011), 193 (64.3%) of the respondents were already on antiretroviral drugs, 224 (74.7%) had not heard about cervical cancer. About 250 (84%) of the respondents had not heard about Pap smear and 33 (68.7%) of the respondents had not had a Pap smear. These results are indicative of poor knowledge of cervical cancer and cervical cancer screening among HIV infected women.

A study conducted in one of the tertiary institutions in KwaZulu-Natal, South Africa, reported lack of knowledge regarding cervical cancer and cervical screening (Hoque and Hoque, 2009). Less than half of the students had heard of cervical cancer and the risk factors were poorly understood. Half of the students mentioned HPV as the main cause of cervical cancer (Hoque and Hoque, 2009). The main reasons for not doing a cervical screening test were fear and being healthy (Hoque and Hoque, 2009). The above implies that there is a need for health education and making the communities aware of the importance of cervical cancer screening so as to increase the utilization of cervical screening services.

The production and launching of the Zimbabwe reproductive health service delivery guidelines by the MOH and CW in 2001 was to promote integration of reproductive health into primary health care using reproductive health screening. Cervical cancer screening is part of reproductive health screening and is done using VIA and Pap smear. The aim was to reduce cervical cancer by at least 70% through regular screening and to encourage regular screening for those at high risk for cervical cancer like women with HIV/AIDS/STIs among other things (MOH and CW, 2001). This can only be achieved if the women to be screened are knowledgeable about their risk of having cervical cancer.

According to Mupepi et al., 2011, in a study done in Zimbabwe, knowledge of cervical cancer screening and accessibility were very low despite high literacy rate among rural women and even when primary health care clinics are available.

Along with many other health problems, the burden of cervical cancer diagnosis and care has been aggravated by economic hardships and other factors, including (1) a cultural tendency to discriminate based on gender, (2) a lack of coherent public policies and knowledge about cervical screening, (3) a lack of trained cytotechnicians and gynecologists, (4) a lack of public education campaigns targeting women, and (5) a lack of healthcare providers to teach the importance of regular care and routine screening (Moyo et al., 1997 and Mupepi et al., 2006). Although VIA can be performed at any clinical setting, is it readily accessible for rural women or affordable for overburdened health systems? This is a question still to be answered.

In a study done to evaluate availability of screening services among African countries it was found that above 95% of health care institutions have basic infrastructures to conduct cervical screening. Most screening was provided on demand through family planning services. Most smears were evaluated in tertiary hospitals and this caused delays in turnaround times of results. Most women commonly screened were below 25 years and also women with invasive cervical cancer (Chirenje et al., 2001), unfortunately the uptake of cervical screening is still very low despite these services being cost-free in most regions. Research evidence suggests that factors such as knowledge, attitude and awareness play a vital role in the utilizing of this service.

Effective screening and early treatment of precancerous cervical lesions are, thus, key factors in preventing cervical cancer in both HIV-infected and HIV-uninfected women (Franceschi and Jaffe, 2007). Treatment for HPV is generally not recommended, because most warts and HPV abnormalities eventually go away on their own, even if not treated. Choice of treatment for women, whether or not living with HIV/AIDS, depends on the preference of the woman, available resources and the experience of the health care provider (WHO, 2006).

 Until HPV tests can become more feasible for primary care service providers, ACCP recommends that VIA-based programmes become a key to establish the necessary programmatic structures for cervical cancer prevention, including community education and sensitization,

provider training and supervision, referral methods for higher level of care, methods to invite women to screening and monitoring systems to track coverage and follow-up rates. All of these structures are essential for the success of an eventual HPV test-based program (ACCP, 2009).

From the review of literature above it is apparent that cervical cancer screening knowledge is essential as a health promotion strategy. The burden of disease due to HIV is high and also poses a challenge to the overburdened health care systems in developing countries. This review formed the basis for the questionnaire and the research design that was utilized in this study. There is no known study that has been conducted in this province to assess the level of knowledge, attitudes and practices of HIV infected women on cervical cancer and cervical cancer screening. This study will add to the body of knowledge, which will help in reinforcing prevention messages and cervical cancer information. It will also provide a basis for exploration of key issues through a qualitative approach in the future. In the next chapter the methodology which was implemented for this research study to explore HIV infected women's knowledge, attitudes and practices regarding cervical cancer and cervical cancer screening in rural Zaka district of Masvingo province, Zimbabwe will be discussed.

1.4. PURPOSE OF THE STUDY

1.4.1. Aim of the Study

The aim of the study was to determine the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening at Musiso Hospital, Masvingo Province, Zimbabwe.

1.4.2 Objectives of the Study

The objectives of the study were:

- To determine the knowledge of HIV infected women on cervical cancer and cervical cancer screening.

- To assess the attitudes of HIV infected women on cervical cancer and cervical cancer screening.

- To determine the practices of HIV infected women on cervical cancer screening.

1.5. RESEARCH QUESTION

- What is the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening?

1.6. RESEARCH METHODOLOGY

According to Burns and Grove (2001) research methodology is "the application of all steps, strategies and procedures for gathering and analysing data in a research investigation in a logical and systematic way". This can be defined as the research plan that guides the research. It involves a research design, sampling methods, data collection methods and analysis, as well as ethical considerations.

1.6.1. Study Site

This study was conducted in the Opportunistic Infection (OI) clinic of Musiso mission hospital, Zaka district, Masvingo province, Zimbabwe. The mission hospital is one of the two referral hospitals in the district with a population of 181 106 (Zimbabwe National Statistics Agency, 2012)

1.6.2 Research Design

The research design that was used in this study is the descriptive cross sectional design. The descriptive design was chosen because it describes the situation as it exists. It is a way of discovering new meaning, describing what exist and determining the frequency with which something occurs and categorizing information. It is conducted when little is known about a phenomenon (Burns and Groove, 2009). The study used a structured questionnaire (Appendix A) to collect data and some open-ended questions added to the questionnaire to further explore opinions and perceptions. The cross sectional research describes a situation as it exists and examines association between exposure and disease prevalence.

1.6.3 Population

Population means the entire group of persons and objects that is of interest to the researcher in other words that meets the criteria which the researcher is interested in studying (Brink, 2009). In this study the population was all HIV infected women receiving services at Musiso mission hospital which is about 550.

1.6.4 Sampling

Sampling is referred to as the researcher's process of selecting the sample from a population in order to obtain information regarding a phenomenon in a way that represents a population of interest (Brink, 2009). In this study the sampling that was used is the probability sampling and the simple random sampling type was chosen. This sampling type was chosen because it is easy, convenient and gives a sample which is a true representation of the population (Brink, 2003:137). The Morgan and Krejcie's table for determining sample size from a given population was used. For the purpose of this study about 226 women were sampled with a sampling interval of 2 calculated from the formula sampling interval (K) = size of population (N)/ size of sample (n)

= 550/226

=2.434

=2

1.6.5 Inclusion Criteria

The women who were included in this study were all women who are HIV positive and attending OI clinic services at Musiso mission hospital, above 18 years and have agreed to participate in the study.

1.6.6 Data Collection

Data was collected through self-administered questionnaires. The questionnaires were administered in English and Shona (a local language) covering the following domains: demographic and social economic information, knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening. The women were motivated through a health talk every morning for a month to enable them to understand that there was going to be a research study which was going to be conducted the following month and their participation or non-participation was not going to affect them in receiving their treatment. This enabled the women to decide freely whether they wanted to participate or not without coercion from health workers. The title of the study was not revealed during the motivation talk and was revealed to the sampled women when they were asked for their consent to participate. The researcher distributed the questionnaires with the help of nurses working in the OI clinic. Every second women was chosen and asked for their willingness to participate. The questionnaires were collected the same day before the participant left the clinic. Data was collected over one month.

1.6.7 Pre Test

The questionnaire was pre tested on 25 women attending services at Ndanga hospital, another referral hospital within the district. The instrument developed needed to be pre-tested on participants similar to those who were used in the study so that the researcher can identify problems in the design of the questions (Burns and Grove, 2009). The pre-test helped to evaluate if the questions answers the research questions and if there was any ambiguity of questions. The results from the pre-test helped to restructure and validate the questionnaire. Pre-testing the questionnaires on women not attending OI clinic services at Musiso hospital helped to ensure that respondents taking part in the pre-test were not included in the main study.

1.6.8. Data Analysis

According to Burns and Groove (2009), quantitative data analysis is a diverse and complex process, it become relatively easy with clear step- by-step processes and the aid of computerized data analysis software.

In this study, data was both qualitative and quantitative. Data analysis was done with the assistance of the university statistician. Thematic analysis was used for qualitative data. Raw data was proof read and coded into categories of similar meaning. An association between socio-demographic characteristics and adequacy of knowledge, attitude and practices of cervical cancer screening was determined using both bivariate and logistic regression analysis. Quantitative data was analyzed using STATA statistical program. The descriptive statistics (mean, percentages and frequency distribution were used to analyze quantitative data determining central tendency and variation in the data. A Chi-square was used to test statistical significance and a p-value of 0.05 was adopted for this study.

Correct and consistent answers regarding cervical cancer and cervical cancer screening was considered adequate knowledge. Women were considered having positive attitude if they were positive about their risk for cervical cancer, positive about cervical cancer screening and supporting their statements consistently. If they were negative about their risk and about cervical cancer screenings then they were considered to be having negative attitude. Practices were considered satisfactory if the women have had cervical screening before and were willing to have it done.

1.6.9. Measures of Reliability and Validity

Reliability deals with the measurement instrument's dependability (Newman, 2003). It was applied to check if the findings of an enquiry will yield the same results if it is replicated with the same participants in the same context (Polit and Beck, 2008). In this study reliability was ensured by pre-testing the questionnaire. Validity is the extent to which the instrument measures what it is supposed to measure and will be ensured by basing questionnaire on current scientific knowledge regarding the research theme, obtained through literature review and present the questionnaire to a panel of experts in the field of research and health sciences to validate that it is appropriate, accurate and representative (Burns and Groove 2009).

1.6.10. Bias

Bias is an influence that produces an error or distortion which can affect the quality of evidence in both qualitative and quantitative studies (Brink, 2009).

In this study the issue of bias was addressed by using random sampling of the subjects choosing every second subject. There was no specific time of choosing the subjects, selection was done throughout the day. The use of a questionnaire in both English and Shona was used to reduce bias from data collection instrument. Use of open ended questions helps women to explain themselves thus reducing bias from data collection. Data collection was done for a full month to allow every woman who attends monthly review a fair chance of being selected. Research topic were only revealed to the selected subjects on obtaining consent to avoid literature review by subjects prior selection

1. 7 ETHICAL CONSIDERATIONS

An ethical clearance was obtained from Medunsa Research and Ethics Committee (Appendix 3) and permission was sought from the Provincial Medical Director of Masvingo province (Appendix 4) and from the respondents who took part in the study. Principles that guide the ethics of research were up held at all times.

1.7.1 Informed Consent

The respondents were given the detailed information about the study to be conducted; this included the type of study and the reasons why the study was to be conducted. Information pertaining all the risks and benefits was made available to the participants before the commencement of the study (Appendix 1) to enable the women to make an informed consent. This whole information was made available in the language that is well understood by the respondents (Brink, 2009 and Burns and Groove, 2009).

1.7.2 Principle of Justice

The researcher treated the respondents fairly by selecting them for reasons directly related to the study problem. The researcher also respected the rights of the subjects by letting them determine the extent to which their private information will be shared with others (Brink, 2009 and Burns and Groove, 2009).

1.7.3 Respect of Participants

The researcher handed over written consent form to all the respondents before being engaged in the study. The researcher let the respondents decide whether or not to take part in the study, with no risk of any penalty. She also explained to them that they have the right to withdraw from the study any time, to refuse to give information or to ask for clarification about the purpose of the study. The researcher did not use any form of coercion (Brink, 2009; Burns and Groove, 2009).

1.7.4 Autonomy and Confidentiality

The researcher kept the respondents' identity a secret with regards to their participation in the research study. The researcher was not able to link a respondent with her data and the collected data was kept safe in a lockable cabinet. When seeking subject informed consent, the researcher included the possibility of data to be published for the benefit of other researchers on the consent form Brink, 2009; Burns and Groove, 2009).

1.7.5 Beneficence and Non-maleficence

The researcher ensured that none of the respondents and the institution is subjected to harm by ensuring that the records are kept confidential and anonymous.

1.8 SIGNIFICANCE OF PROPOSED RESEARCH

This research study might provide insight into the knowledge level and experiences of HIV infected rural women to cancer and screening, and also explored the factors influencing access to screening services in an effort to influence health authorities in planning for a comprehensive management of these women. The study might add to the body of knowledge, which might help in reinforcing prevention messages and cervical cancer information. It might also provide a basis for exploration of key issues through a qualitative approach in the future.

1.9 DISSERTATION OUTLINE

A summary of subsequent chapters is outlined below.

Chapter Two: Literature review

In this chapter the literature, documents and other studies on knowledge, attitude and practice of women on cervical cancer screening was reviewed and discussed.

Chapter Three: Research methodology

This chapter gives a brief exposition of the research methodology which is a quantitative research approach. The research design was a descriptive cross sectional design using an anonymous self-administered questionnaire for data collection. Simple random sampling was used to get a representative sample of the population. Data was analysed with the help of the university statistics using STATA for quantitative data and thematic analysis for qualitative data. Descriptive and inferential statistics were used to analyse and interpret the data.

Chapter Four: Results and discussion of findings

Chapter four presents the results using tables and graphs, descriptive and inferential statistics and a discussion of the key findings is done in line with the objectives of the study.

Chapter Five: Summary, recommendations and conclusion

This chapter summarises the research findings and recommendations based on the findings

1.10 CONCLUSION

In chapter 1, background information was provided on the burden of cervical cancer, the risk of having cervical cancer HIV infected women have and the need for them to have adequate knowledge, attitude and good practice on cervical cancer screening. The problem statement, the research question aims and objectives, significance of the study and the chapters to follow were clearly defined.

2. LITERATURE REVIEW

2.1 INTRODUCTION

Literature review is insightful analysis and evaluation of written materials that contain information related to the current study (Baumgartner et al., 2002). It is based on extensive search of literature from journals; books various reports and studies conducted on knowledge; attitude and practices of HIV infected women on cervical cancer screening in order to identify information, ideas and methods relevant to the present study. The review was guided by the research problem and research question.

The review was conducted to enable the researcher to gain insight in to the research question, verify the significance of the research problem and decide on the most appropriate research methodology including the research instrument for the study (Burns and Groove 2001). The review helped the researcher to broaden her knowledge on cervical cancer and cervical cancer screening and gained an insight on the research problem.

The review looked at various studies conducted; reports and existing knowledge on the topic under study with the main focus on knowledge, attitude and practices of HIV infected women on cervical cancer screening. The following key words were used as the driving force of the review:

Global overview

Africa overview

Southern Africa overview

2.2 GLOBAL OVERVIEW

Theoretically cervical cancer is a disease that should be diagnosed at an early stage because of cervical cytological screening. However in reality most patients in developing countries present in advanced stage when the symptoms of abnormal vaginal bleeding or an offensive vaginal discharge become a personal and social problem (Moodley, 2009).

The WHO has identified screening coverage as being crucial for providing effective early detection of the cervical cancer. The decline in cervical cancer incidence and mortality in developed countries have largely been accredited to effective screening programmes (Gakidou et al., 2008 in Hami, 2012). In such countries, cervical cancer has become a relatively rare disease with the Age Standardised Incidence Rate (ASIR) of less than 10/100 000 compared to developing countries with the ASIR ranging from 25 to 55/100 000 (Denny et al., 2010).

Women in developed countries are often screened for cervical cancer. With current US-based guidelines (ACOG, 2009), Pap smears are recommended beginning at age 21 and every two years until age 30 if normal. After 30, if the last 3 tests have been normal, screening interval can be increased to 3 years. Providers may consider discontinuation of screening after age 65–70; if there have been no abnormal Pap smears in 10 years and no on-going risk factors (Anderson et al., 2011).

Women with HIV infection are recommended to have more frequent screening with cervical cytology: twice in the first year after diagnosis of HIV and, if normal, annually thereafter (CDC 2009; ACOG 2009) More frequent Pap smears should be considered with previous abnormal Pap smears, with conservative follow-up of cervical dysplasia without treatment (after colposcopic evaluation to rule out HSIL), with other evidence of HPV infection and after treatment for cervical dysplasia (Anderson, 2005). Unfortunately, the success of the approach used in developed countries has not been replicated in developing countries due to limited resources.

 A recent study estimated that 63.0% of women in developed countries receive cervical cancer screening with the highest ranging from 80.0% to 90.0% whilst in developing countries screening is estimated at 19.0%, ranging from 1.0% in Bangladesh, Ethiopia and Myanmar to 73.0% in Brazil (Denny et al., 2010).

Cervical cancer thus poses as a major public health threat to women in many low and medium resourced countries like South and Central America, Sub-Saharan Africa, South and Southeast Asia, where it is still the leading type of cancer among women (Arnoli, 2008).

2.2.1 Situation in America

Various studies have been conducted globally to evaluate women's knowledge and attitude of cervical cancer and screening practises.In a study done in Canada (North America) , which sought to evaluate the added value for preventive services of having a primary care provider, Fifty-eight percent (126 of 218) of the women had at least 1 cervical screening test during the3-year period. Thirty-three percent (42 of 126) of the women who underwent cervical screening had at least 1 abnormal test result. The proportion of women who did not have any cervical tests performed was higher among women who did not have primary care providers (8 of 12 [67%] versus 84 of 206 [41%] Leece et al., (2010). This implies that having a usual source of medical care increases the frequency of Pap testing among women, as does receiving gynecologic care at the same site as primary care for HIV-positive women considering that care of patients with chronic diseases is increasingly focusing on collaborative, interdisciplinary models of care (Leece et al., 2010).

According to a study done in Qatar by Al-Meer et al., (2011), over 80% of the 500 women included had heard about cervical cancer and about three quarters had heard about the Pap smear. The main source of information about the Pap smear was relatives and friends (21.6%). Sexually transmitted disease was ranked first as a risk factor for cervical cancer (24.8%). About two-thirds of the participants (62.4%) believed that the Pap smear can detect cancer before the appearance of symptoms and around two-thirds (64.8%) believed that the Pap smear could improve treatment outcome. The mean knowledge score was significantly higher among women aged 30–49 years, those who had a university degree, were employed, had been married for more than 15 years, had parity ≥ 4, or had had ≥ 3 miscarriages ($P < 0.05$).

Of the 500 women who participated in the study, 197 (39.4%) had had a Pap smear at least once in their life. The majority of women (85.5%) said they would have a Pap smear if they were told that the procedure was painless and simple. More than half would prefer the test to be done in the well-women clinic at the primary health care centre (Al-Meer et al., 2011).

According to Al-Meer et al., (2011) the results of the study showed a deficiency in knowledge about cervical cancer as well as low Pap smear uptake, which was surprisingly common among the educated women. This shows that educational quality is a more important predictor of change in knowledge than the number of years in school (Massad et al., 2011).

In a retrospective cohort study done in Western United States at an HIV primary care clinic in California between 2000 and 2006, 125 women received medical care at the clinic and fifty-three (77.9%) women had at least one Pap smear during the study time period. Findings from the study indicated that the Pap smear screening rates for HIV-infected women in that region of the United States were consistent with other regions of the United States (Rahangdale et al., 2010).

Again in California, an investigation which was nested in the Women's Interagency HIV Study (WIHS), an ongoing U.S. multicenter prospective cohort investigation of the course of HIV infection and related health conditions among HIV sero-positive women and sero-negative comparison women at risk for HIV between 2006 and 2008 revealed that, knowledge of cervical cancer prevention improved across a range of questions during follow-up. Nevertheless, substantial knowledge deficits persisted. For example, while significantly more women at follow-up understood what part of the body a Pap test evaluated (P = 0.0002), the proportion rose only to 52%. Knowledge of risk factors, indicating understanding of the causal factors underlying cervical cancer, remained marginal, with substantial proportions of women not understanding the link between cervical cancer and sexual activity, screening compliance, and smoking. Knowledge that cervical cancer is caused by a virus rose significantly (P = 0.005), but only to 24%. Belief that cervical cancer is preventable only rose from 52% to 55% (P = 0.04) suggesting that understanding may not be sufficient to alter beliefs (Massad et al. 2011). Despite this, more than 90% of women continued to believe that regular Pap testing was important for both HIV infected and uninfected women. The proportion of women who knew HPV is a sexually transmitted virus causing warts and cervical cancer rose from 66% to 71% (P < 0.0002). About a third believed incorrectly that HPV could be cured with medication and roughly half believed that individuals can tell when they are HPV infected, proportions that did not change significantly across time, (Massad et al., 2010).

In the same study, higher baseline score, younger age, higher education level, higher income, and former- as opposed to never-drug users, but not HIV status, were associated with improved knowledge using the Analysis of covariance models, (Massad et al., 2010).

In a community-based survey which was done on recently diagnosed cancer patients at Cancer Care Institute of the Rapid City Regional Hospital in South Dakota, United States, to determine their knowledge and beliefs regarding screening and cancer management, it was noted that in comparison with non-Hispanic whites, Native American patients were more likely to have been diagnosed with advanced stage cancer (this is true for those cancers for which screening is available, such as breast and cervical), had lower levels of knowledge regarding screening and more negative attitudes towards cancer treatment (i.e. belief that treatment causes people to feel sick and one's hair to fall out). Nevertheless both groups acknowledged the benefits of early detection with respect to survival following a cancer diagnosis, (Guadagnolo et al., in Wurtak, 2010).

2.2.2 Situation in Asian Countries

Raychaudhuri and Mondal (2012) stated that, it is estimated that there are 2 million cancer patients in India with 0.7 million new cases each year. However, many of these cases of cancer could be tackled to a large extent by simple cost effective methods that emphasize on primordial, primary and tertiary levels of prevention. The promotion of preventive measures could be done by giving impetus to public awareness activities and early detection and screening programmes. Many investigations done in developed countries show a strong association between early reporting for screening and treatment in the community (Raychaudhuri and Mondal 2012).

An investigation was undertaken by Puri et al (2010) to assess the knowledge, attitude and practices in the community pertaining to various aspects of cancer so that higher authorities could use the data as baseline for further interventional studies. The knowledge about cancer and other aspects related to cancer was low in slum dwellers as compared to urban population. A wide gap in the awareness was found between the slum dwellers and the urban community.

More than 80% of the respondents were aware of the term cancer and also the symptoms of the disease. The results were in corroboration to the study done in urban slum dwellers in New Delhi (Seth et al., 2005), where also a large number of subjects could tell at least one sign of cancer. The study indicated that educational programmes should be developed to promote adherence to recommended screening guidelines (Puri et al., 2010).

In India, another study done at a tertiary hospital on knowledge, attitude and practice of the pap smear as a screening procedure among nurses showed that the highest number of participants (72.7%) has heard about cervical cancer from doctor -family physician/gynaecologist. About 82% had adequate knowledge about risk factors of cervical cancer meaning they could identify at least three risk factors of cervical cancer. About 97 percent knew that cervical cancer can be prevented. Knowledge about Pap smear was adequate in 88.8% of the participants and 91.5% showed adequate attitude towards performing Pap smear (Chamaraja Thippeveeranna et al., 2013).

According to Chamaraja Thippeveeranna et al., (2013), the nurse' s respondents needed more knowledge about the causes and risks of cervical cancer, especially with respect to HPV as 39.2% correctly understood that an HPV infection was associated with cervical cancer. In the study, all the respondents have heard about Pap smear test but only11.6% have ever done a Pap smear. The most common reason for avoiding a Pap smear test were lack of any symptoms (58.4%), lack of counselling (42.8%), physician does not request (29.9%) and fear of vaginal examination (20.5%). The majority of the nurses in the study had inadequate knowledge of causes, risks and prevention of cervical cancer, as has been seen in other studies in Uganda, Turkey and Nigeria (Urasa et al., 2011).

The authors concluded that, in India like in most developing countries nurses are the majority of health personnel. It is important that they are well educated regarding cervical cancer, due its public health importance in India and the world, as they have a large role to play in informing the general public and promoting preventive practices given their influence in society. Although knowledge of Pap smear as a screening procedure for cervical cancer is high, practice is still low. The nurses who should be responsible for opportunistic screening of women they care for are not keen to be screened themselves.

If we can improve the practice of Pap smear screening in such experts, they should be able to readily provide appropriate and accurate information and motivate the general population to join screening programs (Chamaraja Thippeveeranna et al., 2013).

Joy et al., (2011) conducted a study among the female educated youths from India, Nepal and Srilanka and concluded that the awareness of cervical cancer was 66% in India, 58.8% in Nepal and 57.7% in Srilanka. However, the concerned subjects had lesser knowledge of risk factors. According to this author despite the advent of HPV vaccine there has been no major improvement in awareness among the undergraduate female students of these countries.

In a descriptive cross-sectional study to describe knowledge, awareness and attitudes regarding cervical cancer among rural women in Laos, women were interviewed using a structured questionnaire covering socio-demographic factors, knowledge of the disease and its risk factors, awareness and attitudes toward cervical cancer and its prevention. Eight hundred women were included in the study and 58% claimed to knew about cervical cancer. Approximately one third (38%) considered themselves to be at risk, but less than 5% had ever had a Pap test. Sixty-two percent believed it was possible to prevent cervical cancer and that vaccination may be a suitable method but only 14% knew about risk factors. Another method for prevention was frequent vaginal douching which was suggested by 70% of the women. Symptoms like bleeding and discharge were correctly identified as possible indicators of cervical cancer but only (7%) knew that an early stage of the disease could be symptom free. Lack of subjective symptoms was the main reason for women to refrain from gynecological examinations. According to the authors (Phongsavan et al., 2010), the study indicated that rural women in Laos have limited knowledge about cervical cancer and even less about screening and prevention and there is need to educate the general community about the disease and its prevention.

One case control study which was done by Sichanh et al., (2014) in Lao PDR (South East Asia) on women attending or not attending an HIV treatment centre, for all the women surveyed, the average knowledge score noted from 0 up to 13 was 3.5 ± 2.1 (range: 0–11). Unrelated to age, the highest scores were recorded among single women, of secondary education level, civil servant, with a monthly income greater than 85 USD. Scores were significantly higher among women living with HIV than in controls ($p < 0.0001$), except among unmarried.

In the same study in multivariate analysis after logistical regression, five variables were independently found associated with a score of knowledge upon cervical cancer higher than 3: occupation, province, education level, and matrimonial status and HIV status. Civil servants were more than 9 times more aware about cervical cancer than housewives. Those who had reached at least the secondary school education level were 3.2 times more aware than illiterates ones. Women divorced or widowed were 3.1 times more aware than single ones. Finally, people living with HIV were found 2.8 times more aware than controls (Sichanh et al., 2014).

The same study also revealed that health professionals were the main source of information, especially for women living with HIV, whereas controls rather knew the disease by the media or their family. Half of the women interviewed believed that cervical cancer is a common disease in Laos, but only 22% felt themselves at risk, this proportion being higher among women living with HIV (Sichanh et al., 2014).

According to Chumnan et al., (2009),a study done with female sex workers (FSW) in Thailand showed that, although most FSWs (85.3%) knew that cervical cancer is the most common cancer affecting women in Thailand, knowledge about HPV infection, HPV prevention, and Pap smear screening was considerably low. The main sources of information regarding cervical cancer were healthcare providers (54.7%); friends (10.9%); print and electronic media (5.5%); and multiple information sources (26.4%). 69,7% of FSWs reported never had Pap smear screening and cited as their 3 main reasons, an absence of abnormal symptoms (66.7%); not knowing where to be screened (16.4%); and the fear that cervical cancer might be found (8.2%)

In the same study, attitudes towards Pap screening were generally positive. The most common negative attitudes regarding Pap screening were fear that abnormal results would be found (27.9%), the pain of the procedure (18.4%), and embarrassment (14.7%). The FSW with a positive attitude were more likely to have had a Pap smear taken within the past 5 years than those with a negative attitude (73.2% and 64.4%, respectively; P=0.06), demonstrating a correlation between attitudes and previous practice regarding Pap smear screening.

Although the level of knowledge seems likely to be associated with attitude and practice, there was no significant difference in mean knowledge scores between FSWs with positive attitudes and those with negative attitudes (4.90 versus 4.88; mean difference, 0.019; 95% CI, −0.47 to 0.51), (Chumnan K et al., 2009).

Thiangtham et al., (2011) stated that in the wife-group study done in Thailand, it was found that: 65.6 % had a "low" level of knowledge about cervical cancer and its prevention; 63.2 % had negative attitudes toward cervical cancer and its prevention; and 76.8 % had a "low" level of sexual communication about cervical cancer prevention with their spouse.

The results of a study done in Malaysia by *Nor* Hayati Othman et al**.,** (2009), showed that, of the1431 cases of cervical cancer which were diagnosed during the study period from the eight participating hospitals, most had not had a Pap smear within 3 years before cancer development. Knowledge about Pap smear was not optimal. Although most (63.3%) of the cancer patients had heard about the Pap smear, from health personnel (39.4%), friends and relatives (10.0%) or the media (5.9%), most had not done the test. The deficit was high among patients at both a 'less urban' hospital and a 'more urban' hospital. Most of the patients surveyed did not know the optimal frequency of Pap smears (*Nor* Hayati Othman et al**.,** 2009).

In the same study, 56.3% had none or only primary education and 61.1% had a household income of RM1000 or less. Level of education and the household income were strongly associated (p<0.05) with knowledge and having had a Pap test. The main reasons cited for not having had a Pap smear were "Never heard about it" (36.2%), "Shy" (10.4%), "Afraid to do it" (13.1%), "Think the test is not important" (8.1%) and "No encouragement from family" (4.5%). A large majority (95.9%) of the patients did not know the optimal interval (*Nor* Hayati Othman et al, 2009).

Healthcare providers influence women's screening behaviours. It was found that the under-utilisation of cervical cancer screening services might be due in part to a lack of physicians' recommendation. There appears to be a need to improve. A qualitative study done by Wong et al (2009) in Malaysia revealed that, women in the study had poor knowledge and awareness of

cervical cancer. When they were asked about cervical cancer, they often referred their knowledge to cancer in general.

Only a few respondents, the majority of whom were older and married, were aware that early detection and treatment saves lives. When they were asked about the frequency of screening, none of the respondents could answer with confidence. Most respondents guessed that screening should be conducted every one to two years. One respondent thought that the test must be repeated every six months.

Health education by healthcare providers, as women reported that they had never been informed of the existence of screening services and importance of Pap smears by healthcare professionals (Wong et al., 2009).

Wong et al., (2009), stated that opportunistic screening was noted to increase screening rates. However, most respondents in their study said they had never been approached for cervical cancer screening during their visits to healthcare professionals. It is not surprising that the women's reluctance to undergo cervical cancer screening might be based on lack of knowledge about the natural history of cervical cancer, the effectiveness of screening and the risk factors of cervical cancer. Education, communication and reassurance are required to overcome such resistance (Wong et al., 2009).

In Korea, the National Cancer Screening Program, which includes cervical cancer screening, has the following principles: the main screening tool is the Pap test conducted by gynaecologists, which targets all women aged 30 and over, and which is done every 2 years. HPV DNA tests have not yet been permitted as a screening test for cervical cancer in Korea; however, these are conducted along with a Pap test for screening cervical cancer in the clinic. The use of prophylactic HPV vaccine has been accepted in Korea; The Korean Society of Gynaecologic, Oncology and Colposcopic recommendation for routine vaccination is for females aged 15-17 years with a catch-up vaccination recommended for females aged betwween18-26 years who have not been previously vaccinated. However many people in Korea are not familiar with the HPV vaccine.

Therefore it is necessary to improve awareness of the disease and of HPV vaccination and to establish the effective strategies to obtain funding for HPV vaccination (Raychaudhuri and Mandal, 2012).

Tran et al (2011) made a comparative study among rural and urban female health care practitioners in Korea regarding knowledge attitude and screening practices for cervical cancer. According to these authors misconceptions and ineffective clinical practices needed to be addressed among both study groups. The authors found no major differences between rural and urban respondents regarding their knowledge, attitude and screening practices.

A survey was conducted at an international university in Japan to study the KAP of female college students towards cervical cancer. The authors opined that there is need to increase awareness among Japanese female adolescents and to enhance the cervical screening rates among older females who are already sexually active (Ghotbi et al., 2012)

2.3 Africa Overview

2.3.1 Situation in West Africa

In 2009, a study to assess knowledge and health beliefs of cervical cancer screening was performed in Ghana among 140 college students whose ages ranged between 20-35 years.

Eight per cent were aware of the link between HPV infection and cervical cancer and 1% was aware smoking was a risk factor for cervical cancer. Sixty-four percent were aware cervical cytology was used to detect pre-cancerous changes in the cervix and 78% thought these changes could easily be cured (Abotchie and Shokar, 2009).

In Nigeria, a study done by Jedy-Agba and Adebamowo (2012), on people living with HIV revealed that, 80% of participants had heard about cancer and considered it a fatal disease but displayed poor knowledge of its causes. Participants identified electronic media, newspapers and health talks at hospitals as the medium through which they had heard about cancer. Most respondents did not believe that it is possible to have HIV and cancer though some opined that it may be possible since both were caused by viruses.

A few of them believed that cancer can be treated if caught early but most were of the opinion that cancer is a deadly disease that has no cure.

According to the focal group discussion(FGD) participants in the same study, many people, including the FGD participants, were aware that there is screening for cancer but only 6% (3 of 48 female participants) of those eligible for cervical cancer screening had ever been screened. They attributed this low level of screening uptake to lack of knowledge about the benefits of screening and the belief that it is better to be ignorant of a diagnosis of cancer if one has no symptoms of the disease as screening with resultant diagnosis of cancer can make you 'die early'. The participants associated screening with early mortality due to emotional distress arising from cancer diagnosis. Although the participants understood screening to mean testing for a particular disease, of the 3 participants who had been screened for cervical cancer out of the 48 eligible women, one said the result was not disclosed to her while the other 2 said they had negative results, suggesting that opportunities to incorporate cancer screening into routine HIV care can play a pivotal role in reducing the cancer burden among people living with HIV (Jedy-Agba and Adebamowo, 2012).

In another study done in Nigeria by Nnodu et al.(2010), the respondents were asked if they knew of cervical cancer and human papilloma virus and the outcomes indicated that very small proportions knew about this disease. However, a close analysis indicated that more among the old ($X2=17.793$; $p < .05$) and those with high education ($X2=23.049$; $p < .05$) had heard about cervical cancer. More among the urban and unmarried people in the sample in contrast to those among the, rural and married ones have heard of human papilloma virus.

The sources of information for cervical cancer include health officials, television, next of kin, friends, magazines, and school almost in the order of importance in the geopolitical zones and locations whereas sources for human papilloma virus are confined to health officials and the school. Health officials appear to be the most important source of information on this disease, (Nnodu et al., 2010).

Another study done in Nigeria by Arnoli et al., (2010) on HIV infected women revealed that, about one third (32.1%) had had postsecondary school education and almost a third were single. 117 (71.1%) had never been on any form of contraception.127 (69.3%) had had the HIV test because they were very sick; only 16.7% had voluntary testing.

The awareness of cervical cancer was poor. 74.4% had never had any form of cervical cancer screening. About 90% had never heard of HPV and 92.3% did not know that HPV causes cervical cancer, 82.1% did not know that HPV is contracted via sexual intercourse, and only 17.1% knew cervical cancer can be prevented by a vaccine. The authors concluded that, the overall knowledge of cervical cancer and HPV in this high-risk population was very poor. There is a need to improve the knowledge of this disease among this population. Cervical cancer screening should be made available at little or no cost to them.

A survey done by Udofia et al., (2012) in Uyo (Nigeria) to determine awareness, use and the main source of information about preventive health examinations on child bearing women revealed that the lowest screening rates were reported for Pap smears and mammograms by 34 (9.3%) and 11 (3.0%) respondents respectively. These results supported the evidence from earlier studies conducted in Nigeria for example an earlier study conducted in Akwa Ibom State among nurses in a tertiary health facility indicated that although awareness about the Pap smear was high at 94.3%, only 7.4% had a previous screen Unang et al 2011. In the Uyo study, awareness regarding Pap smears was much low. However, the screening rate of 9.3% was higher than earlier reported in Akwa Ibom State, 7.4% Unang et al., (2011); similar to 9.0% reported in Enugu (Dim et al., 2009) and lower than 19.0% reported in a multi-centric study in Enugu, Chigbu and Aniebue, (2011) and 18% among female medical practitioners (Dim et al., 2009).

The results of another study done in Nigeria by Abiodun, (2013) on women's awareness and knowledge about cervical cancer and screening and the barriers to cervical screening in Ogun State showed that the majority of the women interviewed were not aware of cervical cancer or screening. Out of the 2,000 women interviewed, only 45 (2.3%) could currently link cervical cancer to a virus as its causative agent. Over 95% of the women did not have an idea of the cause.

The level of awareness of cervical cancer and screening were 6.5% and 4.8% respectively. Only 4.1% and 3.1% respectively of the women could identify screening and vaccination as ways to prevent cervical cancer while 2.4% of them said that proper and regular condom use was a means to prevent cervical cancer. Among those that were aware of cervical and screening the commonest sources of becoming aware were Health professionals, the mass media and through friends and relatives (Abiodun, 2013).

According to Abiodun, (2013), knowledge of cervical screening was quite poor. Eighty two (4.1%) of the 2,000 women answered correctly that screening could prevent cervical cancer while only 4.0% of the women knew that screening would detect early disease. In this same vein, only 4.2% of the women knew that the disease can be cured if detected early. Seventy four (3.7%) of the women knew that cervical screening should be done at regular intervals while 95.3% had no idea at all.

Twenty seven (1.4%) of the 2,000 women had done a cervical screening as at the time of the survey. The major barrier to cervical screening was lack of awareness as noted by 95.5%. The other barriers were lack of interest (1.8%), lack of access to screening services (0.8%), cost (0.8%) and poor quality if services (0.5%) (Abiodun, 2013).

The results implicated that cervical screening is not practised as a health seeking behaviour and the high percentage of unscreened women (98.6%) serves as a pointer to the large extent to which cases of cervical cancer go without being detected at least till advanced diseases have emerged (Abiodun, 2013).

The most important barrier to cervical screening is lack of awareness and knowledge of cervical cancer and screening. This finding has been underlined by various other findings across local and regional boundaries Were et al., (2011), Leung and Leung, (2010) and Fort et al., (2011).

However, there are studies that suggest that awareness and knowledge of cervical cancer and screening do not necessarily translate to uptake of cervical screening services (Gu et al., 2011). They suggest the influence of the other factors. Indeed, other factors found to be barriers to cervical screening among respondents are lack of interest and lack of access to screening. Poor quality of service, cost, culture and lack of interest were not found to be barriers to cervical screening among the study groups (Abiodun, 2013).

Studies have suggested that screening rates are higher in women who are better informed about the test or risk factors for cervical cancer Chigbu and Aniebue, (2011), Leung and Leung, (2010) and in older age groups Deeks et al., (2009) and Chigbu and Aniebue, (2011).

2.3.2 Situation in East Africa

Terefe and Gaym, (2008) carried out a study on knowledge, attitude and practices of cancer of the cervix among reproductive health clients at three teaching hospitals in Addis Ababa, Ethiopia. Most respondents (81.2%) had never heard of Pap smear screening. The source of information for those who had heard about this test was health institutions for 65.4% of the respondents. Women who had heard about Pap smear screening were younger than those who had never heard of it. Only 6.5% of all the respondents had ever had a Pap smear test. The reasons given for not having the test were: no gynecologic symptoms (41.2%); don't know the place where it was done (32.4%); wait till older (14.7%) and consider it was not important (11.8%). For those who had ever had the test, the indications for undergoing the test were doctor/nurse consultation (72.2%) and personal initiative (20.7%). Women who had a Pap smear test had higher level of education than those who never had a Pap smear. Almost all the respondents were willing to undergo the screening test in the future.

In Kenya, a study done by Rositch et al, (2012) to assess knowledge of cervical cancer, HPV, and screening among both HIV-negative and HIV-positive women revealed that HIV-positive women tended to be more aware that ''HPV, a virus, or a sexually transmitted infection'' causes cervical cancer compared to HIV-negative women (24% vs. 18%).

While a substantial number of women did not know the cause of cervical cancer (78%), most women (69%) knew that Pap smears are used to test for cervical cancer. However, 82% of women did not know that Pap smear screening is an important part of preventing, not just detecting, cervical cancer. Nearly a quarter of women cited condom use and 13% reported being faithful to their partners as ways in which cervical cancer can be prevented. Only 18% of women had ever heard of HPV, and of these, 64% knew that HPV is transmitted through sexual intercourse and 35% did not know any mode of HPV transmission.

Very few women (19% HIV-negative and 11% HIV-positive) reported having had a Pap smear prior to the study. Of those who reported having a Pap smear prior to enrollment in the study, most had been done as part of routine care (42%) or as part of a prior research study (19%) and the remaining were conducted for unknown reasons (23%). Those who had never had a Pap smear reported that they did not get screened because they did not know what a Pap smear was or why they needed one (77%). After having at least two Pap smears as part of the study protocol, nearly all women (93%) said that they would seek out Pap screening in the future, with the hospital being the most commonly cited place at which they can be screened. Three-quarters of women said they would be willing to pay up to 400 Kenyan shillings for a Pap smear (approximately 5 US dollars) Rositch et al., (2012).

Studies have documented that health care workers also often have poor knowledge about cervical cancer In a study done by Mutyaba et al., (2006) at Mulago hospital on health workers in Uganda, most participants knew that the cancer was curable if detected at an early stage, and that Pap smear screening could detect early cervical lesions. However, knowledge of risk factors for cervical cancer and details of screening activities was very low. Among the final year medical students, 87% had never done a pap smear, 56% had never done a speculum examination and only 14% felt skilled enough to use speculum. Most of the study participants routinely managed female patients, and had frequently performed vaginal examinations, although use of speculum was surprisingly low (12%). Only 19% of the female medical workers had ever had a cervical cancer screening test done, and the vast majority never asked patients if they had been screened for cervical cancer or ever referred patients for screening (78%). Among the females respondents, reasons for not having been screened included: not feeling at risk, lack of symptoms, carelessness, fear of vaginal examination, lack of interest, test being unpleasant and not yet being of risky age (Mutyaba et al., 2006).

According to Lyimo and Beran (2012), a study which was done in Tanzania determined that over half (n = 211, 59.6%) of the participants had a low level of knowledge of cervical cancer and its prevention, less than a quarter (n = 75, 21.2%) had a medium level, and less than a quarter (n = 68, 19.2%) had a high level of knowledge. Of the 80 women who reported having been screened, those with the highest level of knowledge about cervical cancer and its prevention were more likely than those with low and medium levels of knowledge to have been screened. This shows

that individuals' knowledge and beliefs about the cause and significance of a particular illness are interconnected with their healthcare-seeking behaviors (Al-Meer et al., 2011).

Women who had been screened were less likely to report embarrassment than those who had not screened. Also, women who had screened were less likely to consider it painful than women who had not screened. In addition, most participants who were screened had no preference for a male or female provider compared to those not screened. Fear of receiving cervical cancer screening results, and concern about risk did not differ between those who had, or had not, screened, p > 0.05 (Lyimo and Beran, 2012).

Less than one quarter of women in the rural area of Tanzania had ever screened for cervical cancer. Several factors examined individually in relation to the likelihood of screening indicated that uptake is likely when women report that their husband approves of the screening; have a college education; have a high level of knowledge about cervical cancer and how to prevent it; report little embarrassment and pain associated with the cancer screening procedure; have no preference for the sex of health provider providing for cervical cancer; are aware of a nearby facility; and live within a 5 km proximity (Lyimo and Beran, 2012).

In the Tanzanian study done by Lyimo and Beran (2012) women with college education had screened for cervical cancer more often compared to their counterparts unlike in a study conducted at the University of Ghana which indicated that few college women screened (Abotchie and Shokar in Lyimo and Beran, 2012). This discrepancy can be explained by the importance of knowledge of cervical cancer. Despite their level of education, the Ghana students lacked knowledge about cervical cancer and its prevention specifically, (Lyimo and Beran, 2012). This shows that only women's knowledge about cervical cancer and its prevention, and accessibility to a screening facility are significantly associated with screening status, (Lyimo and Beran, 2012).

In Tanzania again, another study was done by (Kahesa et al., 2012) to describe how demographic characteristics and knowledge of cervical cancer influence screening acceptance among women living in Dar es Salaam. Women who attended screening after home visits or awareness raising campaigns were more often aged 45–59 (21% and 23%, respectively), were more often married

(80% and 78%, respectively) and had more often attended secondary school (58% and 33%, respectively) in comparison with the general population where the corresponding figures were 12%, 63% and 16%. In addition, the women who accepted screening after home visits had more often given birth 5 times or more (39%) than women from the general population (21%). In contrast, women who accepted screening after awareness raising campaigns had more often given birth twice or less (44%) when compared to the general population (34%) (Kahesa et al., 2012).

According to Kahesa et al., (2012), the 396 women who in relation to the home visit stated they had never attended screening, were questioned about their knowledge of cervical cancer and perceived barriers for attending health check-ups. More than half (53%) of the women had never heard of cervical cancer. When questioned about perceived barriers for attending health check-ups, 57% stated that difficult access to health service would be a hindering factor. In addition, 31% of the women stated they were reluctant to go for any test in absence of disease. Lack of medical advice and fear of being diagnosed as having cancer were additionally mentioned as a barrier by 12% and 13% of the women.

The association between screening acceptance and the women's knowledge and awareness of cervical cancer was assessed. Awareness of cervical cancer and screening service were positively associated with screening acceptance (OR 5.90 and 4.20, respectively). Similarly, the women's knowledge of cervical cancer risk factors was also found to be a determining factor for screening attendance (OR of 3.38). Finally, women who believed that cervical cancer could be prevented and women who believed screening could improve survival were also more likely to accept screening with increased OR of 10.1 and 10.4, respectively (Kahesa et al., 2012).

2.4 SOUTHERN AFRICA OVERVIEW

2.4.1 Situation in Southern Africa

HIV/AIDS care and treatment programs provide very highly suitable platforms for launching 'screen-and-treat' cervical cancer prevention services, a very critical and life-saving intervention for all eligible women, regardless of their HIV sero-status. Nevertheless given their increased risk for cervical cancer, it is important to continue targeted screening efforts for HIV-sero-positive women, particularly linked to their ART clinic visits (Mwanahamuntu et al., 2013).

According to Simaubi (2013), findings from a study done in Zambia showed that 52.2% of the respondents interviewed had never heard of cancer of the cervix. Only 47.8% were aware of cervical cancer but had no adequate knowledge on the disease as noted in the focus group discussion where respondents said they had heard people talk about cervical cancer but they were ignorant of the full information on the same.

About 39 percent of the respondents said that all women were at risk of developing cervical cancer, 41.2% said that women who are sexually active were at risk and, 23% said that married women. This is contrary to the Focus Group Discussion where the majority of the respondents said all women irrespective of their condition or situations were at risk of developing cancer of the cervix. The results of the study showed that women do not know that all women are at risk.

In South Africa, where it is estimated that 1 in 26 women develop cervical cancer in their lifetime, a cervical screening program was initiated in 2001. It called for three free Pap smears, starting at age 30, at ten year intervals (Cronje, 2003 and Moodley, 2006). By 2005–2006, 100% of primary health care clinics in South Africa had health professionals trained to conduct Pap smears and yet the screening rate was only 1.3% (van Schalkwyk, 2008).

Several studies have found lack of awareness of cervical cancer among women, as well as stigma and cultural beliefs or perceptions related to the reproductive organs and symptoms that may delay care-seeking (Anorlu et al., 2008; Wellensiek et al., 2002 and Anorlu et al., 2000).

A study was conducted by Hoque et al., (2008) to determine the baseline information on knowledge and practices on risk factors for cervical cancer and Pap smear and to design an intervention to improve Pap smear uptake.

A cross sectional population based descriptive study was undertaken at a rural community of South Africa targeting women 30 years and over. The assessment was performed by means of a questionnaire survey. Outcome measures were percentage of women with the knowledge on risk factors for cervical cancer and use of Pap smear test and had under taken Pap smear test. This study showed low uptake of Pap smear test and low level knowledge on prevention of cervical cancer and risk factors thus warranting urgent extensive health education program for these rural communities.

Another study done by Hoque and Hoque (2009), to assess knowledge and attitude towards cervical cancer among female university students in South Africa indicated that 51.2% students were currently involved in a sexual relationship, with 19.2% reporting two or more sexual partners in the past year. Less than half (42.9%) of the participants had heard of cervical cancer and of these, 26 (15.6%) did not know any risk factors for cervical cancer, while 96 (58.6%) of 164 participants who knew of risk factors, did not know that cervical cancer is preventable. One-hundred and sixty-three (41.9%) participants had heard about the Pap smear test. That the Pap smear test is used for detection or prevention of cervical cancer, was known to 62 (38%) of the respondents. Only 16 (9.8%) participants had had a Pap smear test. Among those who knew about the Pap smear test (n=136), 86 respondents did not have the test done mainly because of personal factors such as fear of the procedure, cultural or religious reasons, and were not ill (61.1%). Findings suggest low level of knowledge on cervical cancer and its risk factors and detection method among these female university students. The author thus recommended the university to concentrate on developing policies on health education and promotion, particularly targeting preventable health conditions, for example, cervical cancer and strategies to prevent transmission of the human papillomavirus

In yet another 2009 South African study done by Wake et al. in Cape Town (South Africa), 100 women attending an anti-retroviral clinic were randomly selected and interviewed about their knowledge of cervical cancer and Pap smears.

Seventy-eight percent of them had never heard about cervical cancer, 59% reported having had a pap smear and about 40% did not know what the pap smear was used for (Wake et al., 2009).

In 2010, attitudes, knowledge and beliefs about HPV and cervical cancer among 86 females aged 18-44 years attending an ante-natal clinic in Johannesburg in South Africa were examined (Francis et al., 2010). Sixty-one percent of the participants had heard of cervical cancer, and only 29% had heard of HPV; of those who had heard of HPV 79% were aware it was sexually transmitted, 33% were aware there was no cure, 67% knew it was a risk factor for cervical cancer and 75% knew condom use offered protection from HPV (Francis et al., 2010).

Another study done in South Africa by Ndlovu (2011), to assess women's awareness, attitudes and experiences regarding cervical smear testing and cervical cancer revealed that out of 69 women, only N=13 (18.8%) reported ever screening for cervical cancer. More than half of women who had never screened reported lack of information as a barrier to screening N=50 (71.4%). Older women aged 35-45, 45 and above were less likely to screen compared to women aged 30 to 34 years of age (OR: 0.06). Having an educational background seemed to increase the likelihood to screen, twice if a woman had primary education (OR 2.0) and almost three times (OR 2.67) if a woman had a secondary or a higher education. More than half of the respondents considered themselves at risk for cervical cancer N=42 (60.8%) and almost all showed a willingness to screen in the future N=64 (93%).

The author concluded that there is need to facilitate comprehensive health education on the implementation of cervical screening programmes so as to target women in rural communities and contribute to the success of the cervical screening programme (Ndlovu 2011).

In (2012), a study done by Kalua E K in Johannesburg in South Africa revealed that, awareness of cervical cancer was high (95%) but knowledge of its risk factors and preventive measures was low. Only 43% and 27% of the respondents had knowledge about HPV and HPV vaccine respectively.

Although only 47% of the respondents were sexually active, sexual behaviour that would put these women at risk for contracting HPV infection and cervical cancer namely, high numbers of sexual partners, early age of sexual debut and inconsistent condom use were present among those that were sexually active. This shows that there is knowledge gap among women regarding cervical cancer.

2.4.2 Situation in Zimbabwe

According to Mupepi et al. (2011), 91% of the 514 participants had never had cervical screening, and 81% had no previous knowledge of the cervical screening tests. Despite never having had cervical screening and lacking prior knowledge of its purpose, 80% of the females expressed positive beliefs about cervical screening tests after an educational intervention.

Females who were financially independent were 6.61% more likely to access cervical screening tests compared with those who were dependent on their husbands. Logistic regression analysis showed that knowledge of a cervical screening test was a significant factor because females who had prior knowledge of cervical screening tests were 83% more likely to access cervical screening compared to those who had no prior knowledge. Age was also considered a significant factor. Women of around 45 years had a 90% less chance of accessing cervical screening compared with women between 25 and 34 years old. The participants' occupations were a significant factor. Females who worked as market vendors had 96% less chance of accessing cervical screening compared with females who were farmers (Mupepi et al., 2011).

Another study done in Zimbabwe by Gundani and Chipfuwa (2013) showed that most women had no annual Pap smear and only (11.4%) had an annual Pap smear. Just above 11 percent of the participants who had an annual Pap smear, 10% had secondary level education and (1.4%) had a university degree. Furthermore (88.6%) of the women that had not sought Pap smear lacked information about the condition.

The findings showed that, regardless of the participants having formal education the uptake for Pap smear was low and that of Cytology screening was also poor contradicting with Fransen

(2003), who asserts that education facilitates the assimilation of health education which given to women in health institutions on common acute and chronic illnesses. The other reasons cited for not seeking Pap smear are that (54.3%) cited lack of knowledge, (34%) cited unavailability of the test and only 3% cited commitments due to work.

The findings showed that lack of knowledge greatly influenced the low screening uptake for cervical cancer which is consistent with the low cervical cancer screening uptake reported by Mutyaba et al., (2007) and Mupepi et al., (2011). Furthermore, most of the women failed to access cytology screening because of the high cost (98.6%) and they were in the lower income category so could not afford the high user fees for the test. This concurs with Shahin (2010) who reported that costs of transport to seek cytology and to pay for the test are among factors that lead to poor screening uptake in resource restricted settings (Gundani and Chipfuwa, 2013).

Findings also showed that all the participants did not get VIA and HPV test which is done at an OIC for clients with HIV/AIDS related conditions. Various reasons were cited which included ignorance about tests and tests being expensive (Gundani and Chipfuwa, 2013).

2.5 CONCLUSION

The review of literature above showed that cervical cancer screening knowledge is essential as a health promotion strategy. The burden of disease due to cervical cancer is high and also poses a challenge to the overburdened health care systems in developing countries. This review formed the basis for the questionnaire and the research design that was utilized in this study. Few studies have been conducted in this province to assess the level of knowledge, attitudes and practices of women on cervical cancer and screening. This study will add to the body of knowledge, which would help in reinforcing prevention messages and cervical cancer information. In the next chapter the methodology implemented for this research study which explored women's knowledge attitude and practices regarding cervical cancer and screening were discussed.

3. DATA AND METHODS

3.1 INTRODUCTION

Chapter two provided a comprehensive overview of the literature on the topic: knowledge attitude and practices of HIV infected women on cervical cancer and cervical cancer screening and related matters. This chapter describes the research methodology which encompasses the research design, strategies and techniques that was used in this study.

3.2 RESEARCH METHODOLOGY

According to Burns and Grove (2001) research methodology is "the application of all steps, strategies and procedures for gathering and analysing data in a research investigation in a logical and systematic way". This can be defined as the research plan that guides the research. It involves a research design, sampling methods, data collection methods and analysis, as well as ethical considerations. Burns and Groove (2009) describes a quantitative research as a formal, objective and systematic process in which numerical data are used to obtain information about the world. This is the research methodology that was used in this study.

3.2.1 Study Site

This study was conducted in the OI clinic of Musiso mission hospital, Zaka district, Masvingo province, Zimbabwe. The mission hospital is one of the two referral hospitals in the district with a population of 181 106 (Zimbabwe National Statistics Agency, 2012)

3.2.2 Research Design

Research design refers to the plan or a structural framework to be followed for the research enquiry or within which the study is implemented for testing research hypothesis (Babbie and Mouton, 2001).

The research design that was used in this study is the descriptive cross sectional design. The descriptive design was chosen because it describes the situation as it exists. It is a way of discovering new meaning, describing what exist and determining the frequency with which something occurs and categorizing information. It is conducted when little is known about a phenomenon (Burns and Groove, 2005). The study used a structured questionnaire (Appendix A) to collect data and some open-ended questions added to the questionnaire to further explore opinions and perceptions. The cross sectional research describes a situation as it exists and examines association between exposure and disease prevalence.

Population

Population means the entire group of persons or objects that is of interest to the researcher in other words that meets the criteria which the researcher is interested in studying (Brink, 2009). In this study the population was all HIV infected women receiving services at Musiso mission hospital which is about 550.

Sampling

Sampling is referred to as the researcher's process of selecting the sample from a population in order to obtain information regarding a phenomenon in a way that represents a population of interest (Brink, 2009). In this study the sampling that was used is the probability sampling and the simple random sampling type was chosen. This sampling type was chosen because it is easy, convenient and gives a sample which is a true representation of the population (Brink, 2003). The Morgan and Krejcie's table for determining sample size from a given population was used. For the purpose of this study about 226 women were sampled with a sampling interval of 2 calculated from the formula   sampling interval (K) = size of population (N)/ size of sample (n)

$= 550$

$= 2.434$

$=2$

Inclusion Criteria

Inclusion criteria refer to the characteristics that an element must have in order to be included in a sample. For the purpose of this study the women who were included in this study were all women who are HIV positive and attending OI clinic services at Musiso mission hospital, above 18 years and have agreed to participate in the study.

3.2.3 Data Collection

Data is information that the researcher has to access for the study to be a success. The researcher can therefore use existing information mainly literature, records and artefacts or generate data specific for the study. Questionnaires, interview schedules and guides, observation and observation charts, records and artefacts may be used as instruments to collect data

Data Collection Approach and Method

For the purpose of this study, data were collected over one month during the month of November 2014 through self-administered questionnaires. The questionnaires were administered in English and Shona (a local language) covering the following domains: demographic information, knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening. The women were motivated through a health talk every morning for a month to enable them to understand that there was going to be a research study which was going to be conducted the following month and their participation or non-participation was not going to affect them in receiving their treatment. This enabled the women to decide freely whether they wanted to participate or not without coercion from health workers. The title of the study was not revealed during the motivation talk and was revealed to the sampled women when they were asked for their consent to participate. The researcher distributed the questionnaires with the help of nurses working in the OI clinic. Every second women was chosen and asked for their willingness to participate. The questionnaires were collected the same day before the participant left the clinic.

Pre Test

According to Mouton (2001), the researcher should either use an existing instrument or develop a new one. For the purpose of this study the researcher developed a questionnaire in English

being guided by the objectives and questions of the study. Literature related to the topic being studied and questionnaires used in similar studies were reviewed.

The questionnaire was pre tested on 25 women attending services at Ndanga hospital, another referral hospital within the district. The instrument developed needed to be pre-tested on participants similar to those who were used in the study so that the researcher can identify problems in the design of the questions (Burns and Grove, 2009). The pre-test helped to evaluate if the questions answers the research questions and if there was any ambiguity of questions. The results from the pre-test helped to restructure and validate the questionnaire. Pre-testing the questionnaires on women not attending OI clinic services at Musiso hospital helped to ensure that respondents taking part in the pre-test were not included in the main study.

Characteristics of Data Collection Instrument

The questionnaire was divided into four sections A, B, C and D.

- Section A had 5 questions covering personal and demographic details.
- Section B had 6 questions covering knowledge on cervical cancer and cervical cancer screening.
- Section C had 1 questions covering attitude on cervical cancer and cervical cancer screening
- Section D had 7 questions covering practices on cervical cancer screening.

3.2.4 Data Analysis

Data analysis refers to the reduction of data into essential parts in order to find answers to the research question. The main purpose is to reduce the data to a clear and understandable form so that its relation to the research objective might be studied and that hypothesis might also be generated for future studies once conclusion has been drawn (de Vos et al., 2005).

According to Burns and Groove (2009), quantitative data analysis is a diverse and complex process, it become relatively easy with clear step- by-step processes and the aid of computerized data analysis software.

In this study 208 women agreed to participate and there was a 100 per cent response rate. Data were entered using Microsoft access template by the researcher with the help of the statistician. Data was exported to STATA statistical package version 12 for subsequent cleaning and analysis. Cleaning of data was done to eliminate errors and inconsistencies. Quantitative data were analysed using descriptive and inferential statistics. Chi-squared tests were done for hypothesis testing at 5 per cent level of significance and 95 per cent confidence level. Multiple variable logistic regressions models were also used to assess association between outcomes of interest and socio-demographic characteristics. All open ended questions were analysed using qualitative methods. Responses were grouped into relevant thematic areas addressing knowledge, attitude and practices on screening for cervical cancer.

Correct and consistent answers regarding cervical cancer and cervical cancer screening was considered adequate knowledge. Women are considered having positive attitude if they were positive about their risk for cervical cancer, positive about cervical cancer screening and supporting their statements consistently. If they were negative about their risk and about cervical cancer screenings then they were considered to be having negative attitude. Practices were considered satisfactory if the women have had cervical screening before and were willing to have it done.

3.2.5 Measures of Reliability and Validity

Reliability deals with the measurement of an instrument's dependability. It is applied to check if the findings of an enquiry will yield the same results if it is replicated with the same participants in the same context (Polit and Beck, 2008). In this study reliability was ensured by pre-testing the questionnaire. Validity is the extent to which the instrument measures what it is supposed to measure and will be ensured by basing questionnaire on current scientific knowledge regarding the research theme, obtained through literature review and present the questionnaire to a panel of experts in the field of research and health sciences to validate that it is appropriate, accurate and representative (Burns and Groove, 2009).

3.2.6 Bias

Bias is an influence that produces an error or distortion which can affect the quality of evidence in both qualitative and quantitative studies (Brink, 2009). In this study the issue of bias was addressed by using random sampling of the subjects choosing every fifth subject. There was no specific time of choosing the subjects selection was done throughout the day. The use of a questionnaire in both English and Shona was used to reduce bias from data collection instrument. Use of open ended questions helps women to explain themselves thus reducing bias from data collection. Data collection was done for a full month to allow every woman who attends monthly review a fair chance of being selected. Research topic were only revealed to the selected subjects on obtaining consent to avoid literature review by subjects prior selection

3.2.7 Ethical Considerations

An ethical clearance was obtained from Medunsa Research and Ethics Committee and permission was sought from the Provincial Medical Director of Masvingo province and from the respondents who took part in the study. The medical superintendant and nursing manager of the Musiso hospital were briefed on the study and granted access to OI department. Principles that guide the ethics of research were up held at all times.

Informed Consent

The respondents were given the detailed information about the study to be conducted; this included the type of study and the reasons why the study was to be conducted. Information pertaining all the risks and benefits was made available to the participants before the commencement of the study. This whole information was made available in the language that is well understood by the respondents (Brink, 2009 and Burns and Groove, 2009).

Principle of justice

The researcher treated the respondents fairly by selecting them for reasons directly related to the study problem. The researcher also respected the rights of the subjects by letting them determine the extent to which their private information will be shared with others (Brink, 2009 and Burns and Groove, 2009).

Respect of participants

The researcher handed over written consent form to all the respondents before being engaged in the study. The researcher let the respondents decide whether or not to take part in the study, with no risk of any penalty. She also explained to them that they have the right to withdraw from the study any time, to refuse to give information or to ask for clarification about the purpose of the study. The researcher did not use any form of coercion (Brink, 2009; Burns and Groove, 2009).

Autonomy and confidentiality

The researcher kept the respondents' identity a secret with regards to their participation in the research study. The researcher was not able to link a respondent with her data and the collected data was kept safe in a lockable cabinet. When seeking subject informed consent, the researcher included the possibility of data to be published for the benefit of other researchers on the consent form Brink, 2009; Burns and Groove, 2009).

Beneficence and non-maleficence

The researcher ensured that none of the respondents and the institution is subjected to harm by ensuring that the records are kept confidential and anonymous.

3.2.8 Conclusion

This chapter gave a brief exposition of the research method which is a quantitative research approach using a cross sectional quantitative design. The study was conducted at Musiso Mission Hospital in Zaka District of Masvingo Province in Zimbabwe. The study was conducted among HIV infected women attending OI services at the institution using a representative sample of the population. The population consisted of 550 HIV infected women and a representative sample of 226 was used but only 208 HIV infected women agreed to participate. An anonymous self administered questionnaire was used to collect data. Quantitative data was analyzed using descriptive statistics with the aid of STATA statistical package. Thematic analysis was used for qualitative data. Internal and external validity of the study was also described as to how it was assured.

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4.RESULTS

4.1 ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF RESULTS

4.1.1 Introduction

This chapter deals with analysis presentation, interpretation and discussion of the results gathered based on the responses from the completed copies of the questionnaires on knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening at Musiso mission hospital. The chapter begins with describing the demographic characteristics of study participants in terms of age, education level and employment status. Tests for association between these demographics and study outcomes on knowledge, attitudes and practices on cervical cancer and screening are presented. Discussion of the study findings is also done.

4.1.2 Socio- Demographic Characteristics

A total of 208 HIV infected women participated in the study. Table 4.1 presents the age distribution of women. The minimum age was 19 years; maximum age 78 years and the mean age was 41 years. Age was disaggregated into five-year age bands. The age group 50+ had the highest frequency of 49 (23.6 per cent) and the age group 25 -29 had the lowest frequency of 10 (4.8 per cent).

Table 0.1: Distribution of respondents by age group

Age	Frequency	Percent
<24	12	5.8
25-29	10	4.8
30-34	39	18.8
35-39	42	20.2
40-44	37	17.8
45-49	19	9.1
50+	49	23.6
Total	208	100

Just over 48 per cent of all respondents had learnt up to secondary level, 9.1 per cent had no formal education and only 3.9 per cent had learnt up to tertiary level as shown in table 4.2.

Table 0.2: Frequency distribution of women by educational level

Education	Total	Percent
No formal education	19	9.1
Primary	81	38.9
Secondary	100	48.1
Tertiary	8	3.9
Total	208	100

The majority of respondents (77.9 per cent) had no formal employment as shown in table 4.3. This is representative of the employment status of HIV infected women receiving care at this institution because they are mostly rural women.

Table 0.3: Frequency distribution of respondents by employment status

Employment	Total	Percent
Employed	22	10,6
Not employed	162	77.9
Other	24	11.5
Total	208	100

All participants interviewed were HIV positive and all were confirmed positive between year 2001 and 2014. Table 4.4 summarises the distribution of women by number of years infected by HIV. The highest number of respondents had been confirmed positive for about 3- 5 years 72 (34 per cent) and lowest number had more than 11 years 11 (5.3 per cent). About 91 per cent of respondents reported not having any other chronic health conditions.

Table 0.4 Frequency Distribution of women by number of years infected by HIV

Number of years infected by HIV	Total	Percent
< 2 years	50	24.0
3-5 years	72	34.6
6-8 years	57	27.4
9-11 years	18	8.7
>11 years	11	5.3
Total	208	100

4.1.3 Knowledge on Cervical Cancer and Cervical Cancer Screening

Knowledge on cervical cancer

Forty five (21.6 per cent) respondents claimed to know what cervical cancer is as shown in figure 4.1, but the majority of these could not correctly explain what cervical cancer is. Only 2 respondents managed to correctly define cervical cancer and linked it to HPV as the causative organism. Most of the women gave the general signs and symptoms of gynaecological problems as the definition of cervical cancer. For instance, some of the responses which were given as the definition of cervical cancer included inflammation of cervix, severe bleeding, and infection in the cervix which spread to the body. About six women's respond were;

Handizivi

literally meaning I don't know

One respondent defined cervical cancer as follows;

Chirwere chokuti mudzimai anobuda ropa kwemwedzi yakatevedzana

literally meaning "it is a disease which causes the woman to bleed successively for some months" and one participant stated;

      Chibereko chinenge chasviba

which literally mean "the cervix will be contaminated".
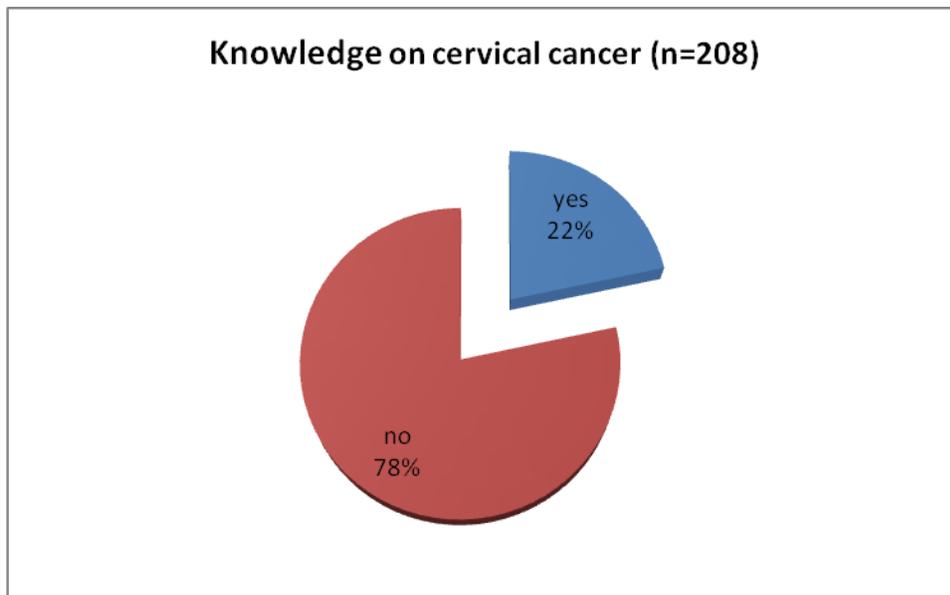
Figure 0.1: Classification of women by knowledge on cervical cancer

Factors associated with knowledge on cervical cancer

Association between age, level of education, employment status and the number of years infected by HIV and knowledge of cervical cancer were determined using a multiple variable logistic regression model. Table 4.5 presents the results of the association between socio-demographic characteristics and knowledge on cervical cancer.

The highest proportion of women who were knowledgeable on cervical cancer were in the 45-49 age group 7(36.8 per cent) followed by those in the 30-34 and 35-39 age groups with 23.1 per cent each. The least knowledgeable (10.0 per cent) age group was the 25-29 year olds. The odds of knowing about cervical cancer was 0.56 in the 25-29 year olds relative to those less than 24 years of age. The odds ratio of knowing what cervical cancer is was higher (1.81) in the older women i.e. those 50 years and above compared to the youngest age group.

However, these differences were not statistically significant across all age groups (*p-value*>0.05) at 95 per cent confidence interval.

The highest proportion of those who knew what cervical cancer is had learnt up to tertiary level (75 per cent) and the lowest proportion was found in those who had no formal education. The odds of knowing about cervical cancer was 23.2 times more in those with a tertiary qualification compared to those without formal education and this difference was statistically significant (*p-value*=0.039). However the odds ratio value had a wide confidence interval indicating a very low precision on the point estimate.

On employment, the highest proportion of those who knew about cervical cancer were employed compared to those unemployed as shown in Table 4.5. The difference in knowledge between these two groups was statistically significant with a *p-value* of 0.001.

The relationship between knowledge on cervical cancer and number of years respondents had spent living with HIV was also investigated. The results revealed that more respondents who had HIV for at least 11 years knew about cervical cancer relative to those who had spent fewer years with the virus. For example, the odds of knowing about cervical cancer was 3.13 times more for those who had spent more than 11 years with the virus compared to those who had less than 2 years living with HIV.

Table 0.5: Association between socio-demographic characteristics and knowledge on cervical cancer

	Total	(% Yes)	Odd ratio (95 % C.I)	p-value
Age				
<24	12(5.8)	2(16.7)	1	
25-29	10(4.8)	1(10.0)	0.56(0.04-7.76)	0.670
30-34	39(18.8)	9(23.1)	1.26(0.21-7.50)	0.801
35-39	42(20.2)	10(23.1)	0.78(0.13-4.74)	0.783
40-44	37(17.8)	5(13.5)	0.59(0.09-4.08)	0.592
45-49	19(9.1)	7(36.8)	1.06(0.14-7.92)	0.953
50+	49(23.6)	11(22.4)	1.81(0.29-11.22)	0.522
Total	208(100.0)	45(21.6)		
Education				
No formal education	19(9.1)	1(5.2)	1	
Primary	81(38.9)	14(17.3)	4.9(0.53-44.5)	0.160
Secondary	100(48.1)	24(24.0)	6.9(0.68-70.9)	0.102
Tertiary	8(3.9)	6(75.0)	23.2(1.17-457.2)	0.039
Total	208(100.0)	45(21.6)		
Employment				
Employed	22(10.6)	14(63.6)	1	
Not employed	162(77.9)	23(14.2)	0.13(0.04-0.42)	0.001
Other	24(11.5)	8(33.3)	0.35(0.09-1.42)	0.143
Total	208(100.0)	45(21.6)		
Number of years infected by HIV				
< 2 years	50(24.0)	9(18.0)	1	
3-5 years	72(34.6)	12(16.7)	0.84(0.29-2.48)	0.759
6-8 years	57(27.4)	17(29.8)	1.69(0.59-4.80)	0.324
9-11 years	18(8.7)	3(16.7)	0.64(0.11-3.63)	0.617
>11 years	11(5.3)	4(36.4)	3.13(0.50-19.6)	0.223
Total	208(100.0)	45(21.6)		

Knowledge on cervical cancer prevention

Out of the 208 participants 55.3 per cent said cervical cancer is preventable, 12.0 per cent said it cannot and 32.7 per cent did not know as shown in Fig 4.2.
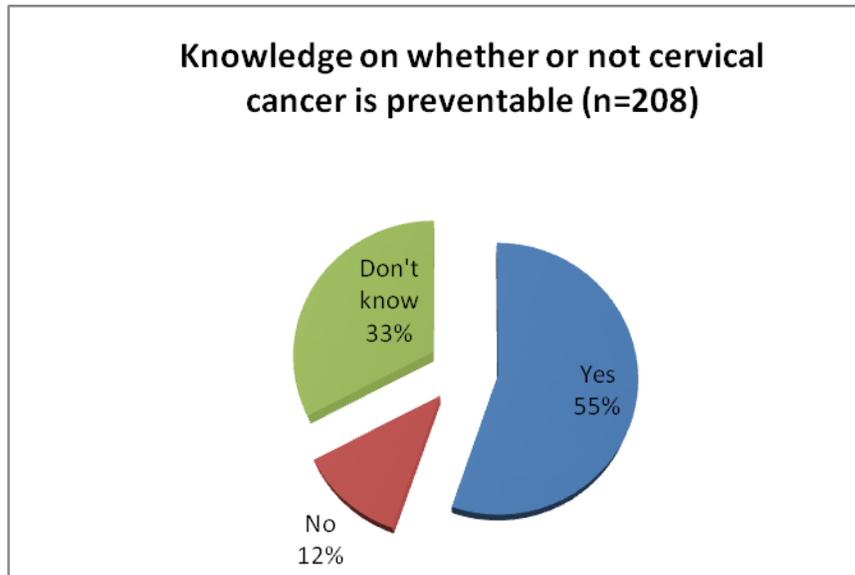
Figure 0.2: Classification of women by knowledge of cervical cancer prevention

Knowledge on cervical cancer prevention methods

Table 4.6 shows the women's response on how cervical cancer can be prevented. Of the 114 respondents who claimed to know that cervical cancer is prevented reported screening (39%), condom use (24.3 per cent), good hygienic practices (14.6 per cent), circumcision (2.4 per cent) and avoiding multiple sexual partners (2.4 per cent) as cervical cancer prevention methods.

Table 4.6: Knowledge on cervical cancer prevention methods

Cervical cancer prevention method	Frequency	Percent
screening	44	38.5
Condom use	27	23.6
Good hygienic practices	17	14.9
circumcision	3	2.6
Avoiding multiple sexual partners	3	2.6
No response	20	17.3
total	114	99.5

Socio-demographic characteristics and knowledge on cervical cancer screening

Table 4.7 summarises the association between socio-demographic characteristics and knowledge on cervical cancer screening. The highest proportion (59.5 per cent) of those who said cervical cancer is preventable was among the 40-44 age-group. The highest proportion (30 per cent) of respondents who said cervical cancer cannot be prevented was in the 25-29 age-group and highest proportion of those who did not know was among the 30-34 age-group. A *p-value* of 0.722 shows that there was no sufficient evidence to support the notion that knowledge on cervical cancer prevention is related to age of the respondent.

In relation to education, those with tertiary education had the highest proportion (62.5 per cent) of the respondents who said cervical cancer is preventable. Those with secondary education had the highest proportion of respondents who said cervical cancer is not preventable (15 per cent), while those with no formal education had the highest proportion of respondents who did not know (47.4 per cent). However, a *p-value* of 0.627, give evidence to fail to reject the null

hypothesis that knowledge on cervical cancer prevention is not related to educational level of the respondent.

On employment, the results showed that the highest proportion of the respondents who said cervical cancer is preventable was among those who were in the" other" category ie informal employment (70.8 per cent). Those with formal employment had the highest proportion of respondents who said cervical cancer is not preventable (27.3 per cent), while those with no employment had the highest proportion of respondents who did not know (37 per cent). A *p-value* of 0.032 shows evidence of a relationship between employment status and knowledge of cervical cancer prevention.

The highest proportion (72.7 per cent) of those who said cervical cancer is preventable had spent more than 11 years living with HIV. Those who had spent between 9 and 11 years living with the virus had the highest proportion of respondents who said cancer cannot be prevented. The highest proportion of those who did not know had just below 2 years after confirming HIV positive status. A p-value of 0.540 shows that there is no sufficient evidence to show that number of years spent with HIV infection is related to knowledge on cancer prevention.

Respondents were also asked on which two screening tests they knew. 7 (3.4 per cent) mentioned VIA only, 6(2.9 per cent) mentioned biopsy of the cervix, 4(1.9 per cent) said Pap smear and VIA and 3(1.4 per cent) mentioned Pap smear only. The majority (92.8 per cent) said they did not know any screening tests.

Thirty nine respondents mentioned at least one of the four sources of information on screening tests. Of these, 56.4 per cent heard the information from a health worker, 23.1 per cent from a friend or relative, and 10.3 per cent through the media.

Table 0.7: Association between knowledge on cervical cancer screening and socio-demographic characteristics

	Yes (n %)	No (n %)	Don't know (n %)	Total (n %)
Age				
<24	7(58.3)	1(8.3)	4(33.3)	12(100)
25-29	4(40.0)	3(30.0)	3(30.0)	10(100)
30-34	23(59.0)	2(5.1)	14(35.9)	39(100)
35-39	24(57.1)	6(14.3)	12(28.6)	42(100)
40-44	22(59.5)	2(5.4)	13(35.1)	37(100)
45-49	9(47.4)	4(21.1)	6(31.6)	19(100)
50+	26(53.1)	7(14.3)	16(32.7)	49(100)
Total	115(55.3)	25(12.0)	68(32.7)	208(100)
P value	0.722			
Education				
No formal education	8(42.1)	2(10.5)	9(47.4)	19(100)
Primary	47(58.0)	8(9.9)	26(32.1)	81(100)
Secondary	55(55.0)	15(15.0)	30(30.0)	100(100)
Tertiary	5(62.5)	0(0.0)	3(37.5)	8(100)
Total	115(55.3)	25(12.0)	68(32.7)	208(100)
P value		0.627		
Employment				
Employed	13(59.1)	6(27.3)	3(13.6)	22(100)
Not employed	85(52.5)	17(10.5)	60(37.0)	162(100)
Other	17(70.8)	2(8.3)	5(20.8)	24(100)
Total	115(55.1)	25(12.0)	68(32.7)	208(100)
P value		0.032		
Number of years infected by HIV				
< 2 years	22(44.0)	8(16.0)	20(40.0)	50(100.0)
3-5 years	42(58.3)	7(9.7)	23(31.9)	72(100.0)
6-8 years	34(59.7)	5(8.8)	18(31.6)	57(100.0)
9-11 years	9(50.0)	4(22.2)	5(27.8)	18(100.0)
>11 years	8(72.7)	1(9.1)	2(18.2)	11(100.0)
Total	115(55.3)	25(12.0)	68(32.7)	208(100.0)
P –value	0.540			

4.1.4 Attitude on cervical cancer and cervical cancer screening

Table 4.8 presents the association between perceived risk of cervical cancer and socio-demographic characteristics. Just above three quarters (77.3 per cent) of the respondents stated that they were at risk of having cervical cancer. The highest proportion of women who perceived themselves as being at risk of having cervical cancer was in the 45-49 age group 17(89.5 per cent) followed by those in the 35-39 age groups with 37 (88.1 per cent). The age group with the least proportion to perceive self risk of developing cervical cancer was the 25-29 year olds. The odds of knowing about the risk of cervical cancer was 5.05 times more in 35-39 age group compared to those less than 24 years and this difference was statistically significant (*p-value* = 0.040).

The highest proportion of those who perceived themselves to be at risk of cervical cancer had learnt up to tertiary level (87.5 per cent) and the lowest proportion was found in those who had no formal education (63.2 per cent).

The odds of perceiving risk of developing cervical cancer was highest (3.15) and the same in those who had learnt up to secondary level and those without and tertiary education and 2.22 in the group with primary education compared to the group with no formal education. However, these differences were not statistically significant in all categories (*p-value*>0.05) at 95 per cent confidence interval.

On employment, the highest proportion of those who saw themselves as being at risk of cervical cancer were employed (81 per cent) compared to those unemployed as shown in Table 4.7. The difference in perceiving risk of cervical cancer between these two groups was not statistically significant with a *p-value* >0.05 (95 per cent confidence interval).

The relationship between perceived risk of cervical cancer and number of years respondents had spent living with HIV was also investigated. The results also revealed that respondents who had HIV for 6 to 8 years perceived themselves to be at risk of cervical cancer followed by those with at least 11 years living with HIV (82.1 per cent and 81.3 per cent respectively) compared to those who had spent fewer years with the virus.

For example, the odds of perceived risk of cervical cancer was 2.13 times more for those who had spent more than 11 years with the virus compared to those who had less than 2 years living with HIV. However, the difference is not statistically significant across all categories (*p-value >* 0.05).

Table 0.8: Association between perceived risk of cervical cancer and socio-demographic characteristics

	Total	(% Yes)	Odd ratio (95 % C.I)	p-value
Age				
<24	12(5.8)	7(58.3)	1	
25-29	10(4.8)	6(60.0)	1.17(0.21-6.62)	0.861
30-34	39(18.8)	30(76.9)	2.29(0.55-9.58)	0.254
35-39	42(20.2)	37(88.1)	5.05(1.08-23.66)	0.040
40-44	37(17.8)	26(72.2)	2.11(0.48-9.37)	0.326
45-49	19(9.1)	17(89.5)	7.16(0.95-54.23)	0.057
50+	49(23.6)	37(75.5)	2.74(0.63-11.87)	0.177
Total	207(100.0)	160(77.3)		
Education				
No formal education	19(9.1)	12(63.2)	1	
Primary	81(38.9)	61(75.3)	2.22(0.69-7.19)	0.182
Secondary	100(48.1)	80(80.8)	3.15(0.91-10.96)	0.071
Tertiary	8(3.9)	7(87.5)	3.15(0.23-44.09)	0.394
Total	207(100.0)	160(77.3)		
Employment				
Employed	22(10.6)	18(81.8)	1	
Not employed	162(77.9)	124(77.0)	1.52(0.39-5.93)	0.556
Other	24(11.5)	18(75.1)	1.42(0.29-7.02)	0.665
Total	207(100.0)	160(77.3)		
Number of years infected by HIV				
< 2 years	50(24.0)	35(70.0)	1	
3-5 years	72(34.6)	57(79.2)	1.51(0.61-3.71)	0.369
6-8 years	57(27.4)	46(82.1)	1.73(0.65-4.62)	0.272
9-11 years	18(8.7)	13(72.2	0.97(0.25-3.82)	0.968
>11 years	11(5.3)	9(81.3)	2.13(0.35-13.17)	0.414
Total	207(100.0)	160(77.3)		

4.1.5 Practices on Cervical Cancer Screening

Women were asked on how often they should get screened for cervical cancer. About 6.3 per cent said in less than 6 months, more than half (52.4 per cent) said after every 6 months, 23.1 per cent said yearly and 2.9 per cent said every 2 years as shown in Fig 4.3. The other 15.3% gave various wild answers or gave no answer at all.

Figure 0.3: Opinion on how often one should screen for cervical cancer
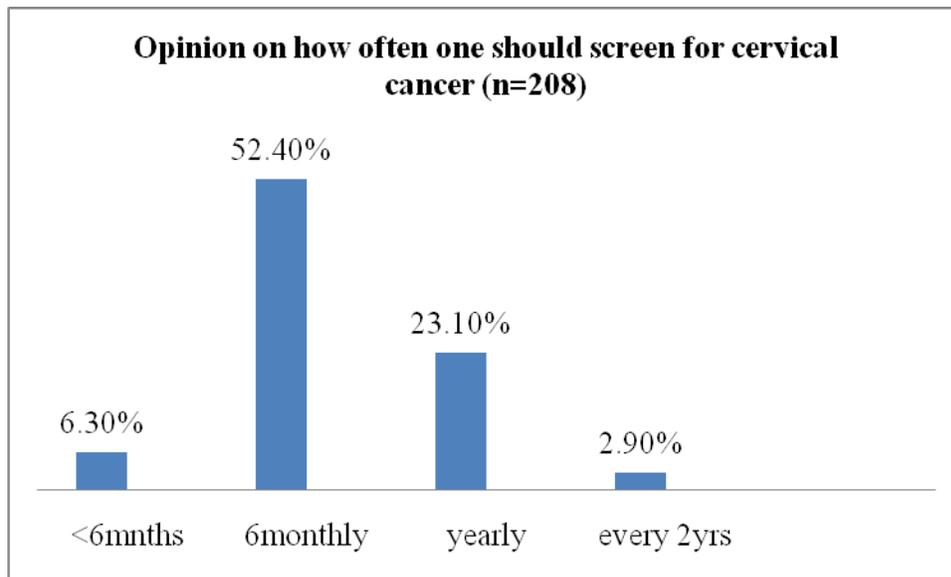
Table 4.9 gives a summary of whether women have screened for cervical cancer and also the association between socio-demographic characteristics and cervical cancer screening. The results showed that only 8.7 per cent (18) of all participants had screened for cervical cancer before.

The highest proportion of women who had screened for cervical cancer was in the 25-29 age group 2 (20.0 per cent) and the odds of screening for cervical cancer was higher (4.52 times) in this group compared to those less than 24 years. The odds of screening for cervical cancer was 0.35 times in the 30-34 year olds relative to those less than 24 years of age. However, these differences were not statistically significant across all age groups (*p-value*>0.05) at 95 per cent confidence interval.

Having an educational background seemed to increase the likelihood to screen, 1.19 times if a woman had primary education (odds ratio 1.19) and almost three times (odds ratios 2.89 and 3.1) if a woman had a secondary and tertiary education respectively. Those who were employed were more likely to screen for cervical cancer than the unemployed.

The highest proportion of women who had screened for cervical cancer were in those who had spent 6-8years living with HIV 7(12.3 per cent) and the odds of screening for cervical cancer was higher (4.82 times) in this group compared to those who had spent less than 2 years living with HIV. Among those who had spent more than 11 living with HIV, none had screened for cervical cancer. The odds of screening for cervical cancer was 3.09 times in those who had spent 9-11 years living with HIV relative to those with less than 2 years of HIV infection as shown in table 4.9

 There was no statistical evidence to show the significance of the association between cervical cancer screening and each of the demographic factors as shown by a *p-value* > 0.05 across all categories.

Table 0.9: Cervical cancer screening by demographic factors

	Total	(per cent Yes)	Odd ratio (95 per cent C.I)	p-value
Age				
<24	12(5.8)	1(8.3)	1	
25-29	10(4.8)	2(20.0)	4.52(0.28-72.04)	0.285
30-34	39(18.8)	2(5.1)	0.35(0.25-5.05)	0.444
35-39	42(20.2)	1(2.4)	0.99(0.00-2.22)	0.145
40-44	37(17.8)	4(10.8)	0.78(0.68-8.93)	0.842
45-49	19(9.1)	2(10.5)	0.69(0.04-10.87)	0.789
50+	49(23.6)	6(12.2)	1.85(0.16-21.83)	0.626
Total	208(100.0)	18(8.7)		
Education				
No formal education	19(9.1)	1(5.3)	1	
Primary	81(38.9)	6(7.4)	1.19(0.12-11.66)	0.884
Secondary	100(48.1)	10(10.0)	2.89(0.26-32.21)	0.388
Tertiary	8(3.9)	1(12.5)	3.1(0.11-87.67)	0.507
Total	208(100.0)	18(8.7)		
Employment				
Employed	22(10.6)	4(18.2)	1	
Not employed	162(77.9)	12(7.4)	0.23(0.50-1.08)	0.062
Other	24(11.5)	2(8.3)	0.21(0.03-1.64)	0.138
Total	208(100.0)	18(8.7)		
Number of years infected by HIV				
< 2 years	50(24.0)	2(4.0)	1	
3-5 years	72(34.6)	7(9.7)	4.26(0.66-27.37)	0.127
6-8 years	57(27.4)	7(12.3)	4.82(0.74-31.59)	0,101
9-11 years	18(8.7)	2(11.1)	3.09(0.29-33.40)	0.353
>11 years	11(5.3)	0(0.0)		
Total	208(100.0)	18(8.7)		

Exactly half of the women who had screened for cervical cancer before reported that they experienced pain during the procedure. 33.3 per cent (6) reported that the procedure was "ok", "not painful", "not harmful" and 16.7 per cent (3) gave different statements like;

I was bleeding for 3months

My brain celebrated for having been not yet affected

Ndakanga ndichinzwa musana ndokubva ndanzi ndinofanira kuenda kuVIA

Reported the third woman literally meaning, "I was having backache and was told that I was supposed to go for VIA".

The women who had not had cervical cancer screening before were asked to give their reasons of not having the screening test. The majority of the respondents stated lack of knowledge as their reason for not having screened for cervical cancer before. Ignorance, lack of symptoms, lack of time, money and motivation were other reasons cited by the respondents for not having screened for cervical cancer before. There was evidence of misconception as illustrated by the response from other women for instance one woman aged 41 years said;

I last had sex long back so I don't expect to have cervical cancer.

I didn't know I will have cervical cancer since I am on ART

the another woman commented.

One respondent who was 37years old and seeing herself as not at risk of cervical cancer answered

Handina kumboita mwana

literally meaning

I have never had a child

Nearly 200 (95.8 per cent) respondents said they would like to screen for cervical cancer in the future.

Of these 14.5 per cent said they would do so at a district hospital, 64.8 per cent said at a mission hospital, 19.1 per cent at a clinic and only 1.5 per cent would get screened by a private doctor as shown in Fig 4.4.
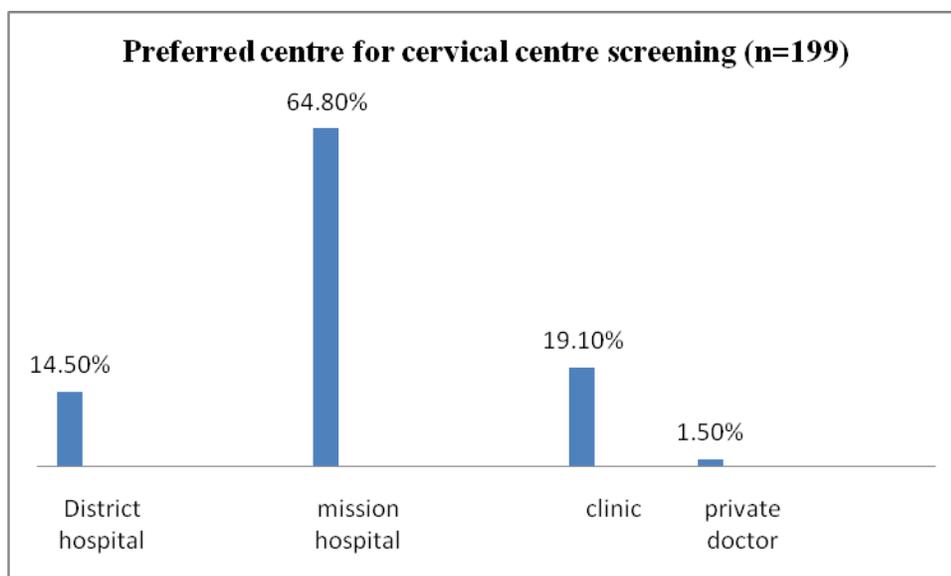
Figure 0.4: Preferred centres for cervical cancer screening.

Those who did not want to go for cervical cancer screening in future (4.2 per cent) gave various reasons which included fear because of the pain, lack of time and low perceived risk, for example one woman said;

> *Handifungidzire kuti ndingavanayo,*

which literally mean" I don't think i have the disease"

The other woman reported

> *Ndachembera,*

which literally means "I am too old".

Relationship between knowledge, attitudes and practices on cervical cancer and screening

Relationship between knowledge on cervical cancer and participants' attitudes and practices were also investigated. Of the 45 participants who knew what cervical cancer is, 77.8 per cent acknowledged that they were at risk of getting cervical cancer.

Investigations on knowledge of cervical cancer and whether or not participants were screened for the disease were done as shown in table 4.10. There was a significant difference in the proportions screened (*p-value* = 0.002) between those who knew what cervical cancer is and those who did not.

Table 0.10: Relationship between knowledge, attitudes and practices on cervical cancer and screening

	Cervical cancer screening		
Knowledge on what cervical cancer is	Yes	No	Total
Yes	9 (20.0)	36 (80.0)	45 (100.0)
No	9 (5.5)	154 (94.5)	163 (100.0)
Total	18 (8.7)	190 (91.4)	208 (100.0)
p-value	0.002		

Nearly 96 per cent of the 45 participants who knew what cervical cancer is, said they would be interested in getting screened for cervical cancer in the future. There was no significant difference (*p-value* = 0.965) on intentions to get screened in the future between those who knew what cervical cancer is and those who did not.

There was a significant difference (*p-value* = 0.016) between participants who perceived self risk of getting cervical cancer and those who did not, regarding their intention to get screened in the future. A higher proportion (95.7 per cent) of those who perceived self risk wanted to get screened in the future compared to those who did not perceive self risk (89.4 per cent).

4.1.6 Discussion

The mean age showed that most of the women interviewed were within the child bearing age group and according to American Cancer Society, (2012), cervical cancer tends to occur in midlife, with most cases found in women younger than 50, however more than 20 per cent of cases of cervical cancer are found in women over 65 especially when they have not been having regular screening. The sample was therefore representative of the group at risk of cervical cancer.

The level of education was important in this study because education is believed to facilitate the assimilation of health education given to women in health institutions on common acute and chronic illnesses (Fransen, 2003).

The results from the study showed lack of knowledge regarding cervical cancer, its causes, and prevention and screening tests among HIV infected women. The same findings were found in a study done by Rabiu et al., (2011), where 74.7 per cent of the women had not heard about cervical cancer and also in other studies done in Uganda, Turkey and Nigeria (Urasa et al., 2011).

Although 55 per cent of the respondents reported that cervical cancer can be prevented, only 39 per cent of these respondents were able to mention screening as a prevention method. Like in a study done in Nigeria and in Kenya, use of condoms (24.3 per cent) were also stated as a preventive method for cervical cancer. (Abiodun, (2013), Rositch et al., (2012).

The use of HPV was not mentioned as a preventive method at all in this study showing a big knowledge gap. Similar findings were found in Nigeria where only 3.1 per cent of the women could identify vaccination as a way to prevent cervical cancer (Abiodun, 2013). The situation is different in developed countries for example, Donders et al., (2009) showed that awareness of the cause of cervical cancer and HPV vaccines was very high and above 78percent in Belgium population.

Knowledge of cervical cancer screening tests was low (7.2 per cent) comparing with India (100 per cent) and South Africa (41.9 per cent) according to Thippeveeranna et al., (2013) and Hoque and Hoque, (2009) respectively.

Older women, those with tertiary education and the employed showed high levels of knowledge on cervical cancer and cervical cancer screening. A *p-value* of 0.001 shows evidence of relationship between employment status and knowledge of cervical cancer and a *p-value* of and 0.032 shows evidence of relationship between employment status and knowledge of cervical cancer prevention. These findings are supported by the results from a study done in Lao PDR (South East Asia) which showed that civil servants were more than 9 times more aware about cervical cancer than housewives. Those who had reached at least the secondary school education level were 3.2 times more aware than illiterates ones (Sichanh et al., 2014).

Thirty- nine (56.4%) of the respondents who had mentioned a screening test reported health care workers as the source of information. This figure is low considering that women in rural populations rely mostly on health care professionals to educate and recommend health care practices that are beneficial in terms of health promotion, Ndlovu, (2011) and also the fact that the sample was drawn from women who seek health care services on a monthly basis.

The results of this study also showed that the respondents had a positive attitude on cervical cancer and screening. About 77 % believed that they were at risk of having cervical cancer though only 18 (8.7%) had screened for cervical cancer. This might show a negative attitude towards screening which changed to positive after awareness was created following the encounter since nearly 200 (95.8%) respondents said they would like to screen for cervical cancer in the future. A statistically significant result was found on willingness to get tested in the future between participants who said they were at risk and those who perceived no risk. Those who perceived risk were more willing to get screened in the future.

Like with knowledge, the older women in 45-49 age-groups (89.5%) followed by those in the 35-39 age-groups (88.1%), those with tertiary education (87.5 %) and the employed (81%) had the highest proportion of perceived risk of cervical cancer. The odds of perceiving self risk of cervical cancer was 5.05 times more in 35-39 age group compared to those less than 24 years and this difference was statistically significant (*p-value* = 0.040). These results are better than those from the study done in Laos, among rural women where approximately one third (38%) considered themselves to be at risk of cervical cancer (Phongsavan et al., 2010) and in South

Africa where more than half (60.8%) of the respondents considered themselves at risk for cervical cancer.

According to CDC (2009); ACOG (2010) women with HIV infection are recommended to have more frequent screening with cervical cytology: twice in the first year after diagnosis of HIV and, if normal, annually thereafter. Unlike screening programs in developed countries which target the risk groups, in Zimbabwe there is no mass screening policy Mupepi et al. (2011), hence women in this study gave varying opinions on how often they should get screened for cancer.

A recent study estimated that 63.0% of women in developed countries receive cervical cancer screening with the highest ranging from 80.0% to 90.0% whilst in developing countries screening is estimated at 19.0%, ranging from 1.0% in Bangladesh, Ethiopia and Myanmar to 73.0% in Brazil (Denny et al., 2010).

As has been seen in other studies done in other countries like Laos, Nigeria, Ethiopia, Tanzania and South Africa by Phongsavan et al., (2010), Jedy-Agba and Adebamowo, (2012) Abiodun, (2013), Terefe and Gaym, (2008), Lyimo and Beran, (2012), Hoque and Hoque, (2009) and Ndlovu, (2011), the results of this study which was done at a hospital in Zimbabwe one of the developing countries showed that only 8.7 percent of the participants had screened for cervical cancer. This shows that there are inadequate cervical screening practices among HIV infected women though the results cannot be generalised to represent the whole country due to the small sample size.

The results from this study supports evidence from earlier studies done in Zimbabwe for example a study done by Mupepi et al., (2011) revealed that 91% of the 514 participants had never had cervical screening. Another study done by Gundani and Chipfuwa, (2013) to establish the extent to which HIV positive women at Bindura hospital access cervical cancer services showed that most of the women (88.6%) did not get a Pap smear and only (11.4%) had a Pap smear. The results show the need to make cervical screening services readily available to the community and mostly the high risk group like HIV infected women. There is need to have educational campaigns on cervical cancer and screening to clear the knowledge gap and misconceptions as well as to motivate them as was echoed by some women. For example one woman said

73

Hatina kumbonzwa zvichikurudzirwa

Literally meaning "we never heard it being encouraged".

4.1.7 Conclusion

Chapter 4 presented the management, analysis, presentation and discussion of the results of the study to determine the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening at Musiso Mission Hospital. The results showed that the majority of HIV infected women were not knowledgeable; their attitude was positive and their practices inadequate on cervical cancer and cervical cancer screening. The next chapter will present the summary of findings, implications where possible the conclusion drawn and recommendations suggested.

5. SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

The results of the study were presented and discussed in the previous chapter therefore it is necessary to draw conclusions based on those findings. This chapter presents a summary of the most significant findings and conclusions for this study on knowledge, attitude and practices of HIV infected women on cervical cancer screening at Musiso mission Hospital**.**

5.1.1 Summary and interpretation of research findings

The results were interpreted in accordance with the research question. The research question which was answered by this study is as follows:

- What is the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening?

Socio- demographic characteristics

208 interviews were conducted. Minimum age was 19, Maximum age was 78 and Mean age was 41. About 48 per cent of all respondents had learnt up to secondary level, 9.1 per cent had no formal education and only 3.9 per cent had learnt up to tertiary level. The majority of respondents (77.9 per cent) had no formal employment. All participants interviewed were HIV positive and all were confirmed positive between year 2001 and 2014.

Knowledge, attitude and practices on cervical cancer and screening

Out of the 208 participants, 45 (21.6 per cent) respondents claimed to know what cervical cancer is. About 55.3 per cent said cervical cancer is preventable. The majority (92.8 per cent) did not know any screening tests. Just above three quarters (77.3 per cent) of the respondents believed they were at risk of having cervical cancer. About 9 per cent (18) of all participants had screened for cervical cancer before and 95.8 per cent respondents reported would like to screen for cervical cancer in the future.

5.1.2 Conclusions

The sample for this study was drawn from women who were receiving services at Musiso mission hospital on monthly. Surprisingly HIV infected women at this hospital were found to be having inadequate knowledge, positive attitude and inadequate practices on cervical cancer and cervical cancer screening. The results also are suggestive of poor dissemination of information by health care professionals. There is need to equip these women with knowledge on cervical cancer and cervical cancer screening to increase cervical cancer screening uptake.

5.1.3 Contribution of the study

This study sought to determine the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening. The study has brought to surface the knowledge gap regarding cervical cancer prevention and shortcomings of the women regarding cervical cancer screening which need intervention of health workers.

The study results may influence policy development at institutional level, provincial level and most probably at national level. Based on the study findings recommendations have been made on how to improve the knowledge attitude and practices on cervical cancer screening. The findings may also serve as a data base for future studies.

5.1.4 Limitation of the study

The study was conducted in one hospital only and cannot be generalised to other hospitals in Masvingo Province of Zimbabwe. A self reported questionnaire was used in this study and information given may not be a true representation of the actual practice.

5.1.5 Recommendations

The following recommendations were made:

- There is need for the institutional head to ensure availability of pamphlets through the district and provincial offices for distribution to these women as they come for their monthly services.
- The use of audio-visual aids presented in the local language (for example video clips in clinic/hospital waiting rooms) should be implemented.
- Cervical cancer and screening messages should form part of the basic health education package offered to all women, irrespective of their health status
- There should be a national screening guideline which should include cervical cancer screening in HIV positive women.
- Health educational intensification should also target men since studies suggest that male partners could play a vital role in increasing the awareness of this service, this will encourage women and their partners to comply with diagnostic and treatment regimes. This can be done in form educational campaigns as with other programmes like tuberculosis, malaria and HIV.
- It is recommended that further large scale studies be conducted to focus on exploring health care resources that influence access across the district so as to better understand reasons for the low uptake of the screening service in this rural community.
- The government should incorporate HPV vaccine in its immunisation programme for adolescents

5.1.6 Concluding remarks

This study revealed that there is limited information about cervical cancer, and cervical screening among this population and is suggestive of poor dissemination of information by health care professionals. Also low screening rate implicated that cervical screening is not often practised as a health seeking behaviour and the high percentage of unscreened women (91.3percent) of women who had not had cervical screening done serves as a pointer to the large extent to which cases of cervical cancer go without being detected at least till advanced diseases have emerged.

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7.APPENDICES

Appendix 1a: Informed consent in English

My name is Olivia Matangaidze. I am a student at the University of Limpopo, conducting a study to determine knowledge, attitude and practices of HIV infected women on cervical cancer screening at Musiso Mission Hospital.

The information from this study will provide insight into the knowledge level and experiences of HIV infected rural women to cancer screening and also explore the factors influencing access to management of these women in an effort to influence health authorities in planning for a comprehensive management of these women.

I kindly request you to complete a questionnaire which seeks information on yourself, your knowledge, attitude and practices regarding cervical cancer . The entire questionnaire will take about 15 minutes to answer. All information you give me about yourself will be strictly confidential and will be kept safe and secure in a lockable drawer. Information will be destroyed when the report is complete. Your name should not appear anywhere on the questionnaire to ensure anonymity.

You are completely free to take part or not in this study. If you decide that you do not want to be part of the study, this will not be held against you and you will not be disadvantaged in any way. You are also free to withdraw from the study at any time if you feel that you cannot proceed. For any questions or queries contact Olivia Matangaidze at 0779542146.

Thank you for your co-operation
Yours sincerely
Olivia Matangaidze
If you have understood the information above and would want to take part in the study, please sign this form on the space provided.

NAME…………………………………………

SIGNATURE……………………………DATE……………………………………………….

Appendix 1b Informed consent in Shona

Kubvuma kupa umbowo pasina kumanikidzwa

Zita rangu ndinonzi Olivia Matangaidze. Ndiri mudzidzi pa University ye Limpopo ari kuita tsvakurudzo yeruzivo, matorero nemaitiro emadzimai ane utachiona hwe HIV pamusoro pe gomarara remurommo wechibereko nekutariswa kwaro pachipatara che Musiso Mishoni.

Ruzivo rwandichawana mutsvakurudzo iyi ruchashandiswa kuonesa udzamu hweruzivo nemagamuchirirwo echirongwa chokutariswa kwegomarara remuromo wechibereko nemadzimai ekumaruwa ane utachiona hwe HIV pamwechete nekuburitsa pachena zvingakanganisa kuongororwa nekubatsirwa kwemadzimai awa nevavariro yokukurudzira vakuru vezveutano kuti varonge kubatsirwa kwemadzimai awa kwakazara.

Ndinokukumbiraiwo kuti mupindure mibvunzo iripapepa remibvunzo inotaura pamusoro penyu, ruzivo, matorero pamwechete nemaitiro enyu takatarisana negomarara remuromo wechibereko. Mibvunzo iyi ingangotora maminitsi gumi nemashanu kuipindura. Umbowo wamuchapa huchachengetedzwa zvakanyanya panzvimbo ino kiyiwa zvokuti hakuna unomboziva kuti ndimi mapa umbowo uhwu. Zita renyu haridiwe pamapepa emubvunzo amuchapiwa kuitira kuchengetedza kuti musazikanwe nezita.

Makasunnunguka kuti mupe pfungwa dzenyu muongororo iyi kana kurega. Kana mafunga kusapa pfungwa dzenyu hapana chakaipa uye hazvikanganise kurapiwa kwenyu pano pachipatara. Kana mazofunga kuti hamuchadi kuenderera mberi netsvakurudzo imi mambotanga, makasunnunguka kubuda mutsvakurudzo ipi zvayo nguva.

Kana mune mibvunzo kana zvichemo ridzai nhare panhamba dzinoti 0779542146 motaura na Olivia Matangaidze. Kana manzwisisa tsanangudzo dziri pamusoro uye muchida kupinda muongororo munokumbirwa kusaina pazasi pebepa iri.

Maita basa nekunzwisisa kwenyu

Wenyu anotendeseka

Olivia Matangaidze

ZITA……………………………….   RUNYORO……………………………………

MUSI WA……………………………………

Appendix 2a: English Questionnaire

QUESTIONAIRE TO ELICIT KNOWLEDGE, ATTITUDE AND PRACTICES ON CERVICAL CANCER AND CERVICAL CANCER SCREENING

PLEASE ANSWER ALL QUESTIONS

Institution………………………………………………….   Record No…………………

SECTION A: PERSONAL AND DEMOGRAPHIC DETAILS

1. How old are you?

   ………………………

2. What is your level of education?

   No formal education

   Primary level

   Secondary level\

   Tertiary level

3. How can you describe your employment status?

   Employed

   Unemployed

   Others
   (Specify)

   …………………………………………………………………………………

4. When were you confirmed HIV positive?

………………………………………..

5. What other chronic health conditions do you have?

……………………………………………………………………………

SECTION B: KNOWLEDGE ON CERVICAL CANCER AND CERVICAL CANCER SCREENING

6. Do you know what cervical cancer is?

Yes

No

7. If the answer to Q6 is yes, what is cervical cancer?

……………………………………………………………………………………………
……………………………………………………………………………………………..

8. Is cervical cancer preventable?

Yes

No

I don't know

9. If the answer to question 8 is Yes explain how……………………………………….

10. What tests for screening cervical cancer do you know?

………………………………………………………………..

………………………………………………………………..

11. What was the source of information for the screening tests mentioned in Q10 (tick what is relative to you)

Health workers

Friend/relative

Media

Others

SECTION C: ATTITUDE ON CERVICAL CANCER AND CERVCAL CANCER SCREENING

12. Do you see yourself as being at risk of cervical cancer?

YES

NO

SECTION D: PRACTICES ON CERVCAL CANCER SCREENING

13. How often do you think women should screen for cervical cancer?

6 monthly

Yearly

Every 2 years

Others (specify)

14. Have you ever screened for cervical cancer?

    Yes

    No

15. If the answer to Q14 is Yes, what was the experience in not more than 3 sentences?

    ………………………………………………………………………………………………
    ………………………………………………………………………………………………
    ………………………………………………………………………………………………

16. If the answer to Q14 is No, give reasons

    ………………………………………………………………………………………………
    ………………………………………………………………………………………………
    ………………………………………………………………………………………………

17. Would you screen for cervical cancer in future?

    Yes

    No

18. If the answer to Q 17 is Yes, where would you go for the test (tick one answer)

District hospital

Mission hospital

Clinic

Private Doctor

19. If the answer to Q 17 is No, give reasons

…………………………………………………………………………………………………

……………………………………………………………………………………………............

THE END

Appendix 2b: Shona Questionnaire

BEPA REMIBVUNZO INOTSVAKA RUZIVO MATORERO NEMAITIRO TICHITARISANA NEGOMARARA RE MUROMO WECHIBEREKO PAMWECHETE NOKUONGORORWA KWARO

PINDURAI MIBVUNZO YOSE

Nzvimbo……………………………………………. Nhamba…………………

CHIKAMU A: TSANANGURO PAMUSORO PAKO

1. Une Makore mangani?

   ………………………

2. Wakadzidza kusvika papi?

   Vasina kuenda kuchikoro

   Dzidzo yedanho repazasi

   Dzidzo yedanho repakati

   Dzidzo yedanho repamusoro

3. Ungatsanangura muraramiro wako sei?

   Uri pabasa

   Hausi pabasa

   Zvimwe
   (Tsanangura)

   ………………………………………………………………………………………

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4. Wakaonekwa riinhi kuti une utachiona uhu?

………………………………………..

5. Zvimwe zvirwere zvinorapiwa kwenguva refu zvaunazvo ndezvipi?

……………………………………………………………………………………

CHIKAMU B: RUZIVO PAMUSORO PEGOMARARA REMUROMO WECHIBEREKO NEKUTARISWA KWARO

6. Unoziva here kuti gomarara remuromo wechibereko chii?

Hongu

Kwete

7. Kana mhinduro yemubvunzo wepanhamba 6 iri hongu, chii chinonzi gomarara remuromo wechibereko?

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……………………………………………………………………………………………..

8. Gomarara remuromo wechibereko rinodziviririka here?

Hongu

Kwete

Handizivi

9. Kana mhinduro yepanhamba 8 iri hongu tsanangura kuti rinodzivirirwa se?……………………………...

10. Ndedzipi nzira dzokutarisa gomarara remuromo wechibereko dzaunoziva?

   …………………………………………………………..
   …………………………………………………………..

11. Wakanzwa kupi nezvenzira dzawataura pamubvunzo wenhamba 10 (tsvunha zvinoenderana newe)

   Kuvashandi vezveutano

   Kushamwari/ Hama

   Kumapepa nhau/ Nhepfenuro

   Dzimwewo nzira

CHIKAMU C: MATORERO AKO GOMARARA REMUROMO WECHIBEREKO NEKUONGORORWA KWARO

12. Iwe unofunga unogona kubatira gomarara remuromo wechibereko here?

   Hongu

   Kwete

CHIKAMU D: MAITIRO AKO MARINGE NEKUONGORORWA KWEGOMARARA REMUROMO WECHIBEREKO

13. Iwe unofunga madzimai anofanira kuongororwa kana vaine gomarara remuromo wechibereko mushure menguva yakadini?

   Mwedzi mitanhatu

   Kamwe pagore

   Kamwe pamakore maviri

   Dzimwe pfungwa (tsanangura)

14. Wakambotariswa here kana uine gomarara remuromo wechibereko?

Hongu

Kwete

15. Kana mhinduro yako kumubvunzo wenhamba 14 iri hongu, tsanangura zvawakasangana nazvo pachiitiko ichi mumutsara isingadariki mitatu?
……………………………………………………………………………………………
……………………………………………………………………………………………
……………………………………………………………………………………………

16. Kana mhinduro yako pamubvunzo wenhamba 14 iri Kwete, ipa zvikonzero
……………………………………………………………………………………………
……………………………………………………………………………………………
……………………………………………………………………………………………

17. Ungada here kuzoongororwa kana uine gomarara remuromo wechibereko munguva inotevera?

Hongu

Kwete

18. Kana mhinduro yako iri Hongu kumubvunzo wenhamba 17, ungada kunoongororwa kupi? (Tsvunha mhinduro imwechete)

Chipatara chehurumende chikuru mudunhu

Chipatara cheMishoni

Kiriniki

Chiremba akazvimiririra

19. Kana mhinduro yako kumubvunzo wenhamba 17 iri Kwete, ipa zvikonzero
………………………………………………………………………………………………
……………………………………………………………………………………............

THE END