

**KNOWLEDGE AND PRACTICES OF WOMEN REGARDING  
CERVICAL CANCER PREVENTION AT THULAMELA  
MUNICIPALITY OF VHEMBE DISTRICT IN LIMPOPO  
PROVINCE**

*by*

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*A thesis submitted in fulfillment of the requirements for the degree:*

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# DECLARATION

I, **Doris Ngambi**, declare that “**Knowledge and Practices of Women Regarding Cervical Cancer Prevention at Thulamela Municipality of Vhembe District in Limpopo Province,**” hereby submitted for the degree of Masters in Nursing (MCur) completed in the Department of Advanced Nursing Sciences at the University of Venda has not been submitted previously by me at this or any other university, and that all materials contained herein have been duly acknowledged.

**Doris Ngambi** : .....

**Date Signed** : .....

## DEDICATION

*This research is dedicated to my husband, who prayed for my success in education. He believes that tough times do not last, but tough people do. It is also dedicated to my mother, children and in memory of my late father.*

# ACKNOWLEDGEMENTS

*I thank Almighty God for giving me the courage and the determination, as well as guidance in conducting this research study, despite all the difficulties.*

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# ABSTRACT

## Background

Cervical cancer remains one of the major public health problems globally, despite the fact that it is preventable and curable if identified at an early stage. Currently, cervical cancer is the leading cause of death among women in Sub-Saharan Africa where the knowledge about the disease is scarce among the affected population.

## Methods

A quantitative cross-sectional survey was conducted in Thulamela Municipality of Limpopo Province. The purpose of the study was to assess the knowledge of cervical cancer prevention among women in four villages in Thulamela Municipality. The population of the study was composed of all women aged above 30 in the villages Malamulele, Mhinga, Muledane and Phiphidi. A sample of one thousand five hundred and forty-six (1546) was drawn using random sampling. Quantitative data were collected using a twenty-six-item questionnaire. The data were coded and then processed using the Statistical Package for Social Sciences to produce frequency tables and descriptive statistics such as chi-square and correlation.

## Results

A number of findings were made in this study. The majority of the women in this study had little or no knowledge about cervical cancer, human papilloma virus and vaccines. The majority of the women had little or no knowledge on cervical cancer risk factors and how the disease is spread. These findings were confirmed by chi-squared values at  $p < 0.05$  and showed significant association between variables: that young women were likely to be aware of cervical cancer compared to elderly women, educated women were more likely to be knowledgeable about cervical cancer than those with low education attainment, elderly women were more likely to be not worried about cervical cancer compared to young women. Correlation, Pearson rho scores at  $p < 0.05$  showed significant correlations knowledge of cervical cancer and age (negative), knowledge and education (positive). The findings signified the need for cervical cancer prevention education in Vhembe District, and the need for primary health care nurses to promote access to such services through robust health education.

## **Recommendations**

The study made a number of practical recommendations likely to educate women about cervical cancer, human papilloma virus and its prevention. These include: The possibility of large hospitals having their own small broadcasting stations that will frequently disseminate information throughout the local municipalities, road shows and use of informal sector like politicians and traditional healers in disseminating information.

**Keywords:** cervical cancer, cervical cancer screening, knowledge, practices, women, prevention, human papilloma virus, human papilloma vaccine

# ABBREVIATIONS

<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>ASIR</b>	Age Standardized Incidence Rate
<b>CANSA</b>	Cancer Association of South Africa
<b>CDC</b>	Centers for Disease Control and Prevention
<b>DNA</b>	Deoxyribonucleic Acid
<b>DoH</b>	Department of Health
<b>EPI</b>	Expanded Programme in Immunization
<b>FDA</b>	United States Food and Drug Administration
<b>GAVI</b>	Global Alliance for Vaccine and Immunization
<b>HBM</b>	Health Belief Model
<b>HIV</b>	Human Immunodeficiency Virus
<b>HPV</b>	Human Papilloma Virus
<b>MCC</b>	South African Medicines Control Council
<b>MCWH&amp;Y</b>	Maternal, Child, Women's Health and Youth
<b>PAP SMEAR</b>	Papanicolaou Smear
<b>PHC</b>	Primary Health Care
<b>SA</b>	South Africa
<b>SABC</b>	South African Broadcasting Corporation
<b>SPSS</b>	Statistical Package for Social Sciences
<b>STI</b>	Sexually Transmitted Infection
<b>UK</b>	United Kingdom
<b>USA</b>	United States of America
<b>VIA</b>	Visual Inspection with Acetic Acid
<b>WHO</b>	World Health Organization

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# CHAPTER 1

## ORIENTATION TO THE STUDY

### 1.1 Introduction

Cervical cancer is a public health problem both in developed and developing countries although it is preventable and curable if identified at an early stage (Magawa, 2012:1). Cervical cancer is the second most common cancer among women worldwide, but the commonest in developing countries. It accounts for approximately 12% of all cancers in women worldwide (Bologun, Odukoya, Oyediran & Ujomu, 2012:76). The fact that cervical cancer screening is under-utilised and the mortality and morbidity rate of women due to cervical cancer remain high, is because women lack knowledge about human papilloma virus (HPV), HPV vaccine and cervical cancer prevention as confirmed by Hoque (2010:127).

It was indicated that women from poorer communities are mostly affected with the disease (Hoque, 2010:127). The South African Cancer Registry reported that over 80% of women who are diagnosed with cervical cancer annually are black African women resulting in nearly 60% mortality (Deny, 2010:11). A prevalence survey suggested that 80% of women had never had a Papanicolaou smear (pap smear) previously even though cervical cancer screening is one of the government's initiatives in detecting cervical cancer at an early stage (National Department of Health's Strategic Plans, 2011-2012:86). Throughout the world, prevention, control and treatment of diseases, including cervical cancer, have been a public health priority (WHO, 2012:3). The disparity in prevalences between the developing and developed world can be attributed to lack of awareness of cervical cancer and lack of effective cytological screening programmes in developing countries (Wright, Faseru, Kuyini &

Faduyile, 2011:3). Other reasons include the constant focus on competing health priorities such as HIV/AIDS, tuberculosis and malaria (Bologun et al., 2012:76). The world pattern of cervical cancer indicates that this is predominantly a problem of low-resource-setting countries. The main reason is limited access to screening and treatment facilities. Cytological screening has been one of the most successful public health measures available for cancer prevention (Wright et al., 2011:3).

Results confirmed that countries that have organized screening programmes have substantially reduced cervical cancer incidence and mortality. Screening programmes have the potential to be effective because cervical cancer is easily detectable by biopsy, there is a long latent period easily recognizable before the development of cancer and there is effective treatment in the precursor disease state (Mc Carey, Pirek, Tebeu, Boulvain, Doh & Petignat, 2011:2).

Genital human papillomavirus (HPV) is the most common sexually transmitted infection (STI). There are more than 40 types of HPVs that can infect the anogenital areas of males and females. These HPV types can also infect the mouth and throat. HPV can cause serious health problems, including genital warts and certain cancers. There is no certain way to tell who will develop health problems from HPV and who will not. In most cases HPV goes away by itself before it causes any health problems, and most people who become infected with HPV do not even know that they have it.

HPV is not the same as herpes or the Human Immunodeficiency Virus (HIV), the virus that causes Acquired Immune Deficiency Syndrome (AIDS). Both viruses can be passed on during sexual contact, but they have different symptoms and cause different health problems such as cervical cancer and the need to be vaccinated with HPV vaccine reduces the risks of one developing the cancer (Centers for Disease Control and Prevention, <http://www.cdc.gov/std/>).

## 1.2 Background to the Study

Cancer of the cervix is the commonest genital tract malignancy in females (Uzem, 2007:2). In 1999, the South African National Department of Health adopted and introduced the national cancer control policy, which includes a programme for cervical cancer screening. The programme makes provision for women attending public sector health services to access screening services. The Department of Health (DoH) proposes three smears per life time with a 10-year interval between each smear commencing at the age not earlier than 30 years. Cervical cytology (Pap smear) is proposed for the programme (Herbst & Phil, 2010:37).

Cervical cancer continues to be the leading cause of death for women in America. The incidence rate of cervical cancer in America is 8.9 per 100,000. More than 10,000 new patients develop cervical cancer each year, and 3,600 women in the United States of America (USA) die from the advanced stage of this disease annually. Approximately 16 out of every 100,000 women in USA will develop cervical cancer and approximately 9 out of 100,000 will die from it (Denny, 2010:70).

It was reported that cervical cancer was second only to breast cancer as a cause of cancer-related mortality in women worldwide (Cermak, Cottrell & Murnan, 2010:229). Despite decades of progress in cancer prevention and early detection in the USA, cancer health disparities persist among racial and ethnic minorities. Cancer mortality rates are often higher among ethnic minorities (Cermak et al., 2010:229). In addition, more Asian women are diagnosed with cervical cancer at late stage (Lee-Lin, Pett, Menon, Lee, Nail, Mooney & Itano, 2007:1203). Early detection through regular screening plays a vital role in reducing mortality from cervical cancer. In the Appalachian Ohio region of the USA, an area characterized by lower income, higher unemployment rates, and lower level of education, recent research has shown both greater cancer incidence and mortality rates, along with lower prevalence of cancer



screening behaviours (Mc Aleamey, Song, Rhoda, Tatum, Lemeshow, Ruffin, Harrop & Paskett, 2010:1). Another study conducted in the USA showed that lower class and extreme poverty areas in the USA were more likely to have later stage diagnoses of cervical cancer (Bologun et al., 2012:76).

In the USA, incidences of invasive cervical cancer have declined substantially since the wide spread introduction of Pap smear screening. Cervical cancer rates have fallen by 36.9% (McDougal, Madeleine, Daling & Christopher, 2007:117). Approximately 2,800 women in the United Kingdom (UK) are diagnosed with cervical cancer each year. As many as 1,100 women die from the disease which is the 12<sup>th</sup> most common cause of death (Denny, 2010:70). In Western countries, the decline in cervical cancer incidence and mortality has been attributed to extensive screening programmes after cervical screening policies were put in place.

The primary purpose of the policy was to identify and treat precancerous lesions and to detect and treat invasive cervical cancer at an early stage (Montgomery, 2009:107). A study conducted in the UK revealed that Pap smear screening has lowered worldwide annual deaths by approximately 2% each year. This has reduced the overall death rate by approximately 74% since the test was implemented. The test is considered the most successful cancer screening technique ever introduced by the government (Chankapa, Pal & Tsering, 2011:48).

A study conducted in Turkey indicated that knowledge and beliefs about cancer have been shown to be important in determining behaviours related to cancer prevention. In Turkey, greater emphasis has been placed on increasing awareness of the public about the importance of early detection. But this is still inefficient, due to poor health care, access and unorganised health care systems coupled with poor participation of women in the cervical screening programme and lack of awareness of the indication

and the benefits of cervical cancer testing, lack of knowledge of cervical cancer and its risk factors; fear of embarrassment, pain, lack of female screeners or convenient clinic times, anxiety caused by receiving abnormal results, poor understanding of cervical screening procedure and a need for additional information (Duran, 2011:1179).

South Africa is no exception; in rural areas there is a severe lack of knowledge concerning cancer preventive practices, as there are limited screening services in the health care facilities. The DoH has just piloted HPV vaccination among primary school girls as one of the preventive measures. In Mexico, the Papanicolaou (Pap) examination is the most effective screening test for increasing early intervention opportunities to reduce cervical cancer incidence and mortality (Wall, Rocha, Martinez, Baraniuk & Day, 2010:1263).

A study conducted in India revealed that the incidence and mortality among women of low socio-economic status and minority women are at a particular risk of not adhering to recommended cancer screening guidelines (Chankapa et al., 2011:2). Previous studies have also shown high prevalence of major risk factors that include low socio-economic level, early age at first sexual intercourse, multiple sexual partners and previous history of sexually transmitted diseases (Bologun et al., 2012:76).

Sub-Saharan Africa has by far the highest burden and mortality associated with cervical cancer in the world (Okonofua, 2007:7). In less developed countries, this type of cancer is the second most common in women and accounts for up to 300,000 deaths annually, 80% of cases occur in low income or middle income countries. Southern Africa has one of the highest incidence rates of deaths in the world (Sibiya & Grainger, 2010:15). A study conducted in Nigeria revealed that cutting across different socio-economic strata, there has been little focus on women living in urban

slums. These slum dwellers are disadvantaged in terms of their socio-economic status. They often have limited income, restricted access to health care services, poor nutrition and low levels of awareness about health issues and preventive behaviours. Even in more developed countries, a coverage level for cervical cancer screening was found to be low among women of low socio-economic status. Nwankwo, Aniebue, Aguwa, Anarado & Agunwah (2011:2) indicated that the most important factors hindering the use of available cervical cancer screening services were lack of knowledge and the feeling that they had no medical problems.

There is very poor knowledge and practice of cervical cancer screening among Nigerian women (Nwankwo et al., 2011:364). In Nigeria, the estimated incidence rate of cervical cancer is 25 per 100,000 women with estimated 8000 new cases diagnosed in the country each year (Fua, 2007:1). Another study conducted in Nigeria indicated lack of awareness, being unnecessary, fear and anxiety as the major reasons cited for not doing the test (Mc Aleamey et al., 2010:1).

Similar rates of cervical cancer have been reported from several African countries, including Uganda, Malawi, Ethiopia and Kenya. Recent data from the World Health Organization (WHO) indicate that while a woman in the USA has a 70% chance of surviving cervical cancer, the chance is reduced to 58% in Thailand and 42% in India and to only 21% in Sub-Saharan Africa (Okonofua, 2007:7). In 2008 Sub-Saharan Africa had an estimate of 6 67000 incidences of cancer diagnosed and 518,000 deaths recorded.

For example, of the 78% of all people diagnosed with cancer and died, 61.6/100,000 were from Lesotho, 58.9/100,000 from Swaziland, 30.4/100,000 from Botswana and 22.2/100,000 from Namibia (Denny, 2010 :70). There were regional variation in age-standardised incidence rates (ASIR) of cervical cancer in Africa, with ASIR of

42,7/100,000 reported in Eastern Africa, 28/100,000 in middle Africa, 12.1/100,000 in Northern Africa, and 29.1/100,000 in Western Africa (Denny, 2010:70). Approximately 3680 women died from cervical cancer each year representing nearly 60% mortality. The ASIR of cervical cancer in the Southern African region as a whole was estimated to be 38.2/100,000 (Denny, 2010:72). Cervical carcinoma is still the most common cancer of women on the African continent. Mortality remains high worldwide at 50%, mainly because of late presentation, advanced stage of the disease and absence of a functioning screening process (Botha, Cooreman, Dreyer, Lindequ, Mouton, Guidozi, Koller, Smith, Hoosen, Marcus, Dyson, Moodley & Soeters, 2010:23).

A total of 5318 new cases of cervical cancer were detected in South Africa in 1997, while the risk of development of cervical cancer in South African women has been estimated to be 1 in 29 (Okonofua, 2007:7). In developing countries, lack of a population-based screening programme accounts for women presenting in the advanced and often untreatable stage of the disease (Pillay, Knight & Rmah, 2009:18). Cervical cancer is a major problem in South Africa and it is the second most common cancer and affects one out of every 41 women. (Pillay et al., 2009:18). The women from poorer communities are most affected with this condition (Hoque, 2010:127).

In South Africa, current estimates are that 493,000 women are diagnosed with cervical cancer per year and 274,000 die from the disease (Hogue & Hogue, 2009:21). A study conducted in KwaZulu Natal revealed that cervical cancer was identified as health priority (Sibiya & Grainger, 2010:16). A study conducted in Mdantsane, South Africa indicated that organised cervical screening programmes have reduced the incidence and mortality in developed countries, but owing to a lack of organised screening programmes, 83% of cervical cancer now occurs in the underdeveloped countries. Scarce resources, poverty, lack of infrastructure and disenfranchisement of women

have been major obstacles in the effective implementation of routine screening programmes (De Kubber, Peters & Soeters, 2011:70). The population-based screening programme reduced the incidence of invasive cervical cancer and mortality in developed countries where screening quality and coverage have been high (Pillay et al., 2009:18). Cervical cancer is highly curable if it is detected early. In the USA, the significant decline in deaths related to cervical cancer is attributed to the routine use of the pap screening test (Lee-Lin et al., 2007:1207).

In Limpopo Province, South Africa, estimates for cervical cancer deaths in 2000 was 5.6% (Bradshaw, Nannan, Laubscher, Groenewald, Joubert, Nijilana, Norman, Pieterse & Schnelder, 2000:12). The Cancer Association of South Africa (CANSA) has declared cervical cancer as one of the priority areas for health promotion and that there is a need for Afro-centric research into the psychosocial aspects of cancer (Pillay, 2002:105). In November 2000, the South African DoH launched the national guideline on cervical cancer screening programme to reduce the incidence and the burden of cervical cancer. The aim of the programme was to screen all women over 30 years three times in their life time at a 10-year interval (Pillay et al., 2009:18) and to reduce mortality and morbidity from cervical cancer and decrease the number of patients suffering from the disease (Botha et al., 2010:23).

In South Africa, nurses are responsible for carrying out cervical screening in the public sector primary level clinics. The integral roles nurses play in cervical cancer screening includes health promotion and health education of women (Pillay et al., 2009:8). According to the study conducted in Soshanguve, South Africa, the South African government has changed the focus on health care provision from curative to preventive by adopting a primary health care (PHC) approach (Mookeng, Mavundla & McMcFarland, 2010:27).

Cervical cancer screening is a test which collects cells from the surface of the cervix and looks for any abnormal cells. Screening by Papanicolaou test or Pap smear is a simple; cost effective and useful test for identifying those at risk of developing cervical cancer (Reyes-Ortiz, Camacho, Amador, Valez, Ottenbacher & Markides, 2011:2). The goal of cytology screening is to sample transformational zone, the area where physiological transformation from columnar endo-cervical epithelium to squamous ecto-cervical epithelium takes place and where dysplasia and cancer arise (Reyes-Ortiz et al., 2011:2).

Researchers say that virtually all cervical cancers - more than 99% - are caused by the 'high-risk' HPVes. The most common of the high-risk strains of HPV are types 16 and 18, which cause about 70% of all cervical cancers. Risk factors for HPV infection include number of sexual partners, the greater your number of sexual partners the more likely you are to contract a genital HPV infection. Having sex with a partner who has had multiple sex partners also increases your risk. A weakened immune system also predisposes one to greater risk of HPV infections. Immune systems can be weakened by HIV/AIDS or by immunosuppressive drugs used after organ transplants. Personal contact by touching someone's warts or not wearing protection before contacting surfaces that have been exposed to HPV such as public showers or swimming pools may increase one's risk of HPV infection.

One important way to prevent cervical cancer is through regular screening with the Pap smear test. Certain HPV types cause cancer, including cervical, vulvar, vaginal, penile, anal, and oropharyngeal (base of the tongue, tonsils and back of throat) cancers. Certain HPV types also cause most cases of genital warts in both men and women. HPV is a common virus that is easily spread by skin-to-skin contact during sexual activity with another person. It is possible to have HPV without knowing it, so it is possible to unknowingly spread HPV to another person (Herbst, 2013:6).

An HPV test can also be used at the same time as the Pap smear test for women 30 years and older. The Pap smear and HPV tests can find early problems that could lead to cervical cancer over time. The HPV vaccine is a strong weapon in prevention. HPV vaccines are available to protect individuals against some of the most common HPV types and the health problems that the virus can cause (Herbst, 2013:6).

Strategies for introducing or strengthening cervical cancer prevention programmes should focus on ensuring that appropriate cost-effective services are available and that women who mostly need the services will use them (Denny, 2010:70). Lessons learned from countries that have successfully implemented mass organised screening programmes are that cumulative reduction in cervical cancer incidence is achieved by selecting appropriate target groups for screening and by extending the coverage to 100% of targeted women (Denny, 2010:70). Coverage in a life time has been shown to be more important than frequency screening and even by screening women over the age of 30 years and offering symptomatic women three free smears (Denny, 2010:70).

According to the National Health Plan for South Africa, the high maternal mortality rates are a great concern, especially among the disadvantaged. A key focus of the policy is improving the health status of women and ensuring that mechanisms for the mother, women youth and adolescent (MCWH&Y) are created so that no mother dies because of lack of access to health services (African National Congress, 1994:3). During the presidential health visit to Limpopo Province, 07 July 2011, the Minister of Health, Dr Aron Motsoaledi indicated that there were a number of challenges that still remain in the delivery of health care in the province, including women mortality. The Minister indicated the need to monitor and evaluate progress made by the DoH in improving the health output of the public health system which focuses on increasing life expectancy, decreasing maternal and child mortality rates.

The majority of women in SA are underutilising the cervical cancer screening services either because of lack of knowledge, or screening services that are inaccessible to those who need it. Health promotion campaigns regarding cervical cancer prevention need to be strengthened to ensure that all women particularly those 30 years and older, continue to be educated on cervical cancer and HPV as well as the importance of regular Pap test in order to motivate women to be screened for early detection (Shand, Burney & Fletcher, 2010:202). The underutilisation of health services for cervical cancer screening prompted the researcher to assess knowledge regarding cervical cancer, the HPV vaccine and preventive measures among rural women in Thulamela Municipality of Vhembe District in Limpopo Province

### **1.3 Problem Statement**

Burns & Grove (2000:16) defined a research problem as a situation in need of solution, improvement or alterations a discrepancy between the way things are and the way things are supposed to be. The DoH adopted and introduced the National Cancer Control Policy, which includes a programme for cervical cancer screening. Women are entitled to three free Pap smears per life time, starting at the age of 30 years or older with a 10-year interval between each smear (Herbst & Phil, 2010:37). The researcher observed a trend of rural women presenting with late stage of the disease. Despite the screening programme that is in place, the available cervical cancer screening services are not optimally utilized as expected. There is a limited number of rural women aged 30 and older accessing the screening services. Cervical cancer is a killer disease and incurable, especially when discovered at a late stage (Lewis, Heiptkemper, Dirksen, O'Brien & Butcher, 2007:1403).

In Thulamela Municipality, the current death rate due to cervical cancer was 20 women according to the gynaecological register in two hospitals within the district for the financial year 2011/2012. These deaths are considered unnecessary because of the



advent of the Pap test, HPV test and its usefulness in early detection and hence the potential for early treatment (Ayres, Atkins & Lee, 2010:197). Table 1.1 indicates the number of women who accessed cervical cancer screening per facility for the four selected clinics, which is an indication of low cervical screening coverage (Data retrieved from district health information services for April 2011 - March 2012).

**Table 1.1:** Cervical cancer screening of women 30 years and older in selected clinics

Year	Malamulele	Mhinga	Muledane	Phiphidi
Apr 2011	2	2	2	16
May 2011	4	11	3	10
Jun 2011	2	9	8	4
Jul 2011	0	2	3	20
Aug 2011	21	6	11	47
Sep 2011	16	1	5	15
Oct 2011	19	6	9	18
Nov 2011	9	2	4	5
Dec 2011	14	1	3	12
Jan 2012	6	6	4	7
Feb 2012	20	4	2	14
Mar 2012	4	4	3	8
<b>Total</b>	<b>117</b>	<b>54</b>	<b>57</b>	<b>176</b>
Source: Vhembe District Health Information Services 2011-2012				

#### 1.4 Purpose of the Study

The purpose of the study was to determine the knowledge and practices of cervical cancer prevention, among women in Thulamela Municipality at Vhembe District in Limpopo Province.

## 1.5 Research Question

A research question is a concise, interrogative statement that is worded in the present tense and can also include one or more variables (Burns & Grove, 2003:170; Brink, 2008:80). The following question underpins this research study:

**“What is the knowledge and practices of women regarding cervical cancer prevention?”**

## 1.6 Research Objectives

This refers to clear, concise declarative statements that are expressed in the present tense and focus on one or more variables (Burn & Grove, 2003:169; Brink, 2008:79).

The objectives of the study were to:

- Assess the knowledge of rural women regarding cervical cancer.
- Assess the knowledge of rural women regarding cervical cancer prevention.
- Describe the practice of cervical cancer prevention.
- Recommend ways to improve screening uptake.

## 1.7 Significance of the Study

According to Burns & Grove (2009:559), the significance of a study is associated with its importance to the body of knowledge. The findings of this study will provide information about knowledge regarding cervical cancer, HPV, HPV vaccine and preventive measures and will also give insight into rural women who do not use preventive measures. The study will add to the new information to the existing body of knowledge about cervical cancer prevention strategies. Health services may improve with regard to strategies to disseminate information on cervical cancer

screening, prevention, treatment and benefits by marketing the service. The reduction of morbidity and mortality associated with cervical cancer will reduce the expenditure on the treatment of invasive cancer. Therefore, knowledge obtained from the research findings could be implemented to improve the services offered by the health system.

## **1.8 Assumption of the Study**

The basic assumption of the study was that rural women with knowledge regarding cervical cancer, HPV and HPV vaccine are more likely to use preventive practices than those without knowledge.

## **1.9 Theoretical Framework**

### **1.9.1 The Health Belief Model**

The study was guided by the Health Belief Model (HBM). Based on the model (Strechor & Rosenstock, 1997), the likelihood that an individual will take action to prevent illness depends on their perception that they are personally vulnerable to the conditions, the consequences of the condition would be serious, the precautionary behaviour effectively prevents the condition and the benefit of reducing the threat of the condition exceeds the cost of taking action (Montgomery, Bloch & Bhattacharya, 2010:240). The underlying concept of the original HBM is that health behaviour is determined by personal belief or perception about the disease and the strategy available to decrease its occurrence. Personal perception is influenced by the whole range of intrapersonal factors affecting health behaviour (Glanz, Lewis & Rimer, 2002:3).

The model was developed in the 1950s by a group of social psychologists to explain the widespread failure of people to participate in programmes to prevent or detect disease, or explore reasons related to decreased participation in preventive health programmes. The model is a conceptual framework used to understand health

behaviour and possible reasons for noncompliance with recommended health action. It can provide guidelines for programme development, allowing planners to understand and address reasons for noncompliance. The model also addresses four major components for compliance with recommended health action (Glanz et al., 2002:31).

### **1.9.2 The Theoretical Construct**

The following four perceptions serve as the main constructs of the model: perceived seriousness, perceived susceptibility, perceived benefit and perceived barriers. Each of these perceptions, individual or in combination can be used to explain health behaviour. More recently, other constructs have been added to the HBM. Thus, the model has been expanded to include cues to action, motivating factors and self-efficacy.

#### **1.9.2.1 Perceived Seriousness**

The construct of perceived seriousness speaks to an individual belief about the seriousness or severity of the disease, while the perception of seriousness is often based on medical information or knowledge, it may also come from the beliefs a person has about the difficulties a disease would create or the effect it would have on his/her life in general (Glanz et al., 2002:31).

#### **1.9.2.2 Perceived Susceptibility**

Personal risk is one of the powerful perceptions in promoting people to adopt healthier behaviours. The greater the perceived risks the greater the likelihood of engaging in the behaviour to decrease the risk. Perceived susceptibility motivates women to be screened for cervical cancer. It is only logical that when women believe they are at risk for a disease, they will be more likely to do something to prevent it from happening. Unfortunately, the opposite also occurs when women believe they are not at risk or

have a low risk of susceptibility, unhealthy behaviour tends to result. Perception of increased susceptibility or risk is linked to healthier behaviour and decreased susceptibility or risk is linked to unhealthy behaviour (Glanz et al., 2002:32). When the perception of susceptibility is combined with seriousness this results in perceived threat, if the perception of threat is to a serious disease for which there is serious risk, behaviour often changes (Glanz et al., 2002:32).

### **1.9.2.3 Perceived Benefit**

The construct of perceived benefit is a woman's opinion of the value or usefulness of a new behaviour in decreasing the risk of developing disease. Women tend to adopt healthier behaviour when they believe that the new behaviour will decrease their chances of developing a disease. Would women strive to be screened for cervical cancer for early detection if they did not believe it was beneficial? Perceived benefit plays an important role in the adoption of secondary prevention behaviour such as screening for cervical cancer. Among women, those who perceive a benefit from cervical cancer screening for early detection are more likely to undergo screening than those who do not see screening as having benefits. (Glanz et al., 2002:32).

### **1.9.2.4 Perceived Barriers**

This is an individual's own evaluation of obstacles in the way of him/her adopting a new behaviour of all the constructs. Perceived barriers are the most significant in determining behavioural change in order for a new behaviour to be adopted. A person needs to believe that the benefit of the new behaviour outweighs the consequences of continuing the old behaviour. This enables barriers to overcome the new behaviour to be adopted trying to increase cervical cancer screening in women would seem obvious that the threat of cervical cancer would motivate the adoption of early detection practices.

Cervical cancer is a very serious disease for which women are at risk and for which perception of threat is high. Barriers also stand on the way of women seeking Pap smear tests though they perceive cervical cancer as being serious and believe there are benefits to having pap tests. The fear that the test is painful and not knowing where to go for testing are not outweighed by the benefit of the test or minimised by the seriousness of the disease. It is interesting that these barriers (beliefs) are greatest among women who have never had a pap test (Glanz et al., 2002:33).

#### **1.9.2.5 Modifying Variables**

Four major constructs of perception are modified by other variables, such as culture, educational level, past experiences, skill and motivation. These are individual characteristics that influence perception. For example, if a woman is diagnosed to have cervical cancer and is successfully treated, she may have a heightened perception of susceptibility because of this past experience. Conversely, this past experience could diminish the person's perception of seriousness because the cancer was easily treated and cured (Glanz et al., 2002:33).

#### **1.9.2.6 Cues to Action**

The HBM suggests that behaviour is also influenced by cues to action. Cues to action are events, people or things that move people to change their behaviour, for example, illness of a family member, media reports and mass media campaigns (Glanz et al., 2002:33).

#### **1.9.2.7 Self-Efficacy**

Self-efficacy is the belief in one's own ability to do something. People generally do not try to do something new unless they think they can do it. If someone believes a new behaviour is useful, but does not think they are capable of doing it, perceived barriers are that it will not be tried. According to the HBM, modifying variables cue to action

and self-efficacy affect perception of susceptibility, seriousness of benefit, perceived barriers and therefore people's behaviour (Glanz et al., 2002:35). The HBM is the most commonly used theory in health education and health promotion (Glanz et al., 2002:31). In addition, cues or stimuli such as fear of the disease and illness symptoms (internal cues) and publicity or educational materials (external cues) are needed to trigger the appropriate action (McFarland, 2003:168). The model also involves behavioural change as a process.

Research conducted over the past years showed that the relationships among knowledge awareness of the need to change, intention to change and an actual change in behaviour are very complex. Sustained health behaviour change involves multiple action and adaptation over time (Montgomery, Bloch, Bhattacharya & Montgomery, 2010:3). Women's health programmes largely use behavioural science theories to help develop core intervention and train managers to conduct programmes for women, for example, cervical cancer screening programmes. The HBM is clearly relevant to the intervention to reduce risk factors for cervical cancer (Montgomery et al., 2010:3)

### **1.9.3 Application of the Health Belief Model**

Based on the HBM, the researcher found it imperative to outline that women aged 30 years and older are susceptible to contracting HPV infections coupled with high risk sexual behaviour. perceived susceptibility, multiple partners, Pap smear compliance, women not screened three times in their life time according to the cervical cancer screening policy and perceived seriousness and Pap smear test compliance, including sexual contact without the use of condoms during their last sexual intercourse. Perceived seriousness of the condition and pap test compliance, for example, not taking into consideration the seriousness of the cervical cancer and adhering to screening programmes (Montgomery et al., 2010:3).

The HBM allows us to better understand the cognitive aspects influencing cervical screening participation in women. Lack of awareness about cervical cancer, HPV and HPV vaccine leads the population to perceive themselves as less vulnerable to cervical cancer and delay their active participation in preventive screening programmes (Marccela, 2006:58). The model is useful for determining the main aspects that might influence positively or negatively the women's uptake of cervical cancer screening and predicts the adoption and maintenance of the behaviour (Marccela, 2006:57).

The HBM has been applied most often for health concerns that are prevention related and symptomatic such as early cervical cancer detection. The HBM purports that the decision to take preventive action against a particular disease is influenced by the individual perceived susceptibility to the disease - a person's opinion of the chances of getting a certain condition, perceived severity of the disease - a person's opinion of how serious this condition is, perceived benefit - a person's opinion of the effectiveness of some advised action to reduce the risk of seriousness of the impact, and perceived barriers to a person's opinion of concrete and psychological cost of this advised action. Cues to action these are events(internal or external) which can activate a person's readiness to act and stimulate an observable behaviour, the example of external strategies to activate readiness can be delivered in print with educational materials through mass media or one-to-one counselling (Glanz et al., 2002:34). The model further asserts that modifying factors also influence preventive action.

These include:

1. Demographic factors such as age, education, and ethnicity;
2. Socio-psychological factors such as social class and personality;



3. Structural factors such as knowledge about the disease and prior experience with the disease and practices regarding cervical cancer prevention.

In addition, cues or stimuli such as fear of the disease and illness symptoms (internal cues) and publicity or educational materials (external cues) are needed to trigger the appropriate action (McFarland, 2003:168). The construct of perceived seriousness speaks to an individual's belief about the seriousness or severity of a disease while the perception of seriousness is often based on medical information or knowledge. It may also come from beliefs a person has about the difficulties a disease would create or the effect it would have on his/her life in general. It is only logical that when women 30 years and older believe that they are at risk for a disease, they will be more likely to do something to prevent it from happening. Unfortunately, the opposite also occurs when women 30 years and older believe they are not at risk or have low risk to susceptibility (Glanz et al., 2003:32)

#### **1.9.4 Reason for Choosing the Health Belief Model**

The HBM was selected as the conceptual model for the study because of its focus on an individual's perception about illness, their beliefs about actions related to prevention of the disease and how these factors affect their health actions. The model emphasises individual health belief and can be used to explain and intervene in cancer screening behaviour. A number of HBM variables are believed to influence cancer screening beliefs and practices such as perception of susceptibility and perceived benefits and barriers. The model claims that women 30 years and older are more likely to participate in health promoting behaviour if they believe they are susceptible to a health condition and that the condition is serious. An increase in perceived susceptibility and severity has been linked to an increase in cervical cancer screening. The model focuses on prevention and asymptomatic disease such as cervical cancer early detection (Lee-Lin et al., 2007:1204).

## 1.10 Definition of Concepts and Operational Definitions

<b>Knowledge</b>	Refers to information understanding and skills that you gain through education or experience (Oxford Advanced Learners Dictionary, 2006:821). In this study, knowledge shall refer to what you know regarding cervical cancer prevention.
<b>Practice</b>	Practice refers to action rather than ideas (Oxford Advanced Learners Dictionary, 2006:1137). In this study, practice shall refer to habit or custom.
<b>Woman</b>	Refers to an adult female (Million, 2004). In this study, woman shall refer to any woman 30 years and older in the Vhembe District.
<b>Cervical cancer</b>	Refers to abnormal or malignant cells that begin at the cervix, which is the opening of the womb, begin to grow and sometimes if not treated become cancer. In this study, cervical cancer shall refer to a wound that develops on the mouth of the womb.
<b>Human papilloma virus (HPV)</b>	HPV is a virus that is the cause of common warts (The Free Dictionary, Farlex, 2003:1). In this study, HPV shall refer to a virus that causes cervical cancer.
<b>Prevention</b>	Refers to the act of stopping a bad thing from happening (Oxford Advanced Learners Dictionary, 2006:1149). In this study, prevention shall refer to avoiding risk factors for cervical cancer by early cervical cancer screening.

## 1.11 Outline of the Study

- Chapter 1:** Orientation to the Study
- Chapter 2:** Literature Review
- Chapter 3:** Research Methods and Design

**Chapter 4** Data Presentation, Analysis and Interpretation

**Chapter 5** Discussion of the Findings, Conclusions and Recommendations

## **1.12 Conclusion**

This chapter provided an orientation to the study which encompassed a concise background to the study and literature, an outline of the problem statement, the purpose of the study and the research questions and objectives. The significance of the study was encapsulated based on the underlying assumptions of the study in the context of the HBM, its theoretical constructs, application and rationale for choosing it in the research undertaken. Chapter 2 will cover the literature review in greater detail.

# CHAPTER 2

## LITERATURE REVIEW

### 2.1 Introduction

This literature review covers the knowledge and practices regarding cervical cancer prevention globally, in both the developed and developing countries, South Africa and finally in Thulamela Municipality of the Vhembe District in Limpopo Province. Cervical cancer prevention is even more important in the developing countries where it is the most common malignant disease.

About half a million new cases are reported worldwide each year; most occurring in developing countries where women present late, when palliative treatment can be given. Cancer is responsible for about 51 million deaths yearly (Uzem, 2007:2). Since a substantial proportion of women in the world are at high risk for developing neoplasia, they should be made aware of those factors that result in risk status.

Nurses should take an active role in the prevention of cervical cancer. Cervical cancer is the 16<sup>th</sup> leading cancer in Australian women; while worldwide it remains the second most common cancer in females. Until recently, the prevention of cervical cancer has relied almost exclusively on detection of abnormal cell changes in the cervix through regular Papanicolaou (Pap) test.

These malignant cells manifest from the abnormal development of cells caused by the infection with the HPV. Symptoms associated with cervical cancer usually present in middle aged women with progression from precancerous lesion to invasive cancer occurring over a period of 10 to 15 years. (Shand et al., 2010:202).

## 2.2 The Natural Origin of Cervical Cancer

The main oncogenic cancer-causing HPV strains are strains number 16 and 18. HPV is highly transmissible, with a peak incidence soon after the onset of sexual activity; it is transmitted through direct skin contact, often by sexual intercourse by the vagina, oral or anal routes. A break in the mucous membrane increases the risk of HPV transmission. HPV affects both men and women - that is why boys should also be included in the HPV prevention programme. Symptoms are often absent because the virus may be inactive for weeks, months, or even years after successfully entering the body (Shand et al., 2010:202).

## 2.3 Risk Factors Associated with Cervical Cancer

Although HPV infection is the major cause of cervical cancer, few women with HPV infection actually progress to a cancerous stage diagnosis, long term use of oral contraceptive pills, and other STIs. A number of factors have been cited in the literature as increasing young women's vulnerability to cervical dysplasia and susceptibility of the adolescent cervix to STIs (Duffett-Leger et al., 2008:572). There are some risk factors that may influence the progression of cervical cancer such as leaving the HPV infection untreated and allowing it to persist for a long period of time.

Other related risk factors include early onset of sexual intercourse, parity (HPV is less common among women with decreased parity, smoking (women who smoke are more susceptible to cervical cancer), failure to always use barrier methods during sexual intercourse and ineffective management and treatment of STIs like *Chlamydia* and Herpes simplex virus, immune suppression, nutritional status. Low socio- economic status has also been identified to be a risk factor for cervical cancer (Bello, Enabor & Adewole, 2011:25), and predispose women to cervical cancer (Herbst & Phil, 2010:37).

A study conducted in Karala India reported that one in every five women suffering from cervical cancer in India. The study further indicated that the majority of respondents did not know (89.2%) any risk factors for cervical cancer and out of 809 women studied 6.9 had undergone screening (93.1%) had not done screening test due to various factors such as no symptoms, not being aware of the pap test, no time, no money, lack of interest, fear of the procedure, do not know where to go, no one ever thought of it (Aswaty, Quereshi, Kuman & Laelanoni, 2012:205).

A study conducted in Tshwane community reported that long term use of oral contraceptives, smoking and multiple parity can double and even triple the risk of women infected with oncogenic type HPV to develop cervical cancer. Cultural norms such as early marriage and polygamous marriage also increase the risk of cervical cancer.

Socio-economic factors also influence the incidence of cervical cancer and poverty endemic in South Africa add to the risk. Furthermore, women living in resource poor communities tend to be unaware of cervical cancer and cervical cancer screening services (Marree, Lu & Wright, 2012:5). The women in this study lacked knowledge about cervical cancer.

A study conducted in Bangkok Thailand indicated that risk factors for cervical cancer include age at first intercourse, parity, smoking, socio-economic status and reproductive tract hygiene. Many countries have had improvement in socio-economic indicators which led to improvement in cervical cancer screening programmes.

Sub-Saharan-Africa is lacking behind in almost all socio-economic indicators and is one of the only regions of the world showing increases in cervical cancer. This is illustrated by the trend in Mali and Uganda where there has been a significant increase in the incidence of cervical cancer (Sanghvi, Lacoste & McConie, 2001).

## 2.4 Cultural Factors

Research on the factors that influence the use of the Pap smear by Latinas usually falls under two major categories—being economic and cultural. Economic factors, in particular having health insurance, are that most important predictors of cervical cancer screening in this population, many investigators have suggested the possible role of culture in predicting preventive service use. Some of the issues included language and beliefs about the disease (McMullin et al., 2005:4). A study conducted in Canada indicated that there was low level knowledge and prevalence of cervical cancer screening among South Asian women. South Asian women experienced unique socio-cultural issues while adjusting to Western societies.

Cultural beliefs that ignore preventative medicine create isolation from the community at large and enforced language barriers may interfere with a woman's access and utilization of health care. In addition, sexuality is a very sensitive and secretive topic in many Eastern cultures and it is unlikely to be discussed in homes or within small community settings. A study conducted in Nigeria revealed that women had been reluctant to undergo cervical screening because of embarrassment about having to expose their genital organs for public examination and even the fear of cancer results.

Also, the study confirmed what was said about the fact that some men could hinder their wives involvement in screening if they do not approve of it especially because of their cultural and religious beliefs/values (Adentola, 2011:9). However, some studies have found that single women are more likely than married women to have Pap smear screening. Perhaps negative attitude among the male partners, who may serve as key decision-makers, prevent women from seeking screening. The men's role may thus be important to take into consideration to determine whether women will access screening or not (Lyimo & Beran, 2012:2). Culture can serve as a barrier for women to access cervical cancer screening where male partners dominate as decision

makers, hence women need to be informed about their rights so that they can take charge of their own body.

## 2.5 HPV Infections

Cervical cancer remains a major source of illness and death among women globally and infection with oncogenic HPV is its principal cause. Men are assumed to be the main reservoirs of genital HPV infections for women. Over 100 subtypes of HPVs have been identified and regarding their association with cervical cancer, high-risk subtypes are found in 99% of cervical cancers from which HPV types 16 and 18 are associated with over 70% of cases of cervical cancer (Allameh, Moghim & Asadi-Zeidabadi, 2011:1510). Although, HPV infection is common and its consequences can be severe, information about it among the majority of the population is low or non-existent.

Previous studies have shown inadequate knowledge about HPV prevention method among women. This is particularly true among people with lower socio-economic status. Attitudinal and cultural aspects of HPV infection and cervical cancer can play an important role in infection rate, prevention methods, including vaccine uptake, the cost, morbidity and mortality associated with HPV-related diseases (Farzaneh, Shirvani, Barouti, Salehpour, Khodakarami & Alizadeh, 2011:468).

People's perceptions of the risk of HPV infections and the benefit of prevention methods will lead to greater acceptance of the prevention policy. Diagnosing the knowledge gaps of populations concerning HPV and attitudinal obstacles for considering prevention methods, including vaccination, are valuable pieces of information for health administrators and clinicians to take a stand and educate the public (Farzaneh et al., 2011:468). Cervical cancer is still a major public health problem being the leading cause of cancer death followed by breast cancer (National DoH Strategic Plan, 2011-2012:86).



Cervical cancer is considered to be the second most common cancer among women worldwide, especially in developing countries. The incidence of cervical cancer was estimated to be 500,000 cases per year with a 50% case fatality rate, 4% of detected cases occur in Asian countries and 80% of related deaths occur in developing countries which are estimated to increase to 90% by 2020 (Allameh et al., 2011:1509). Although the related mortality rate is high, according to epidemiological studies cervical cancer kills 260,000 patients annually, it is considered as a preventable death due to the development of HPV vaccination programmes and effective screening methods (Allameh et al., 2011:1510).

In Canada several studies have shown that some health professionals have a relatively low level of knowledge about HPV infections and its prevention (Daval, Gilca, Boullian, Halparen, Anne, Simpson, Sauvageau, Quakki, Dube & Lavole, 2009:3). The South African Cancer Registry reported that over 80% of women who are diagnosed with cervical cancer annually are black African women, with a nearly 60% mortality (Deny, 2010:11). HPV infections place women at risk and similar trends are being observed among women in Thulamela Municipality as women diagnosed with HIV have also reported cervical neoplasm, it is thus important to encourage women to go for treatment of STIs early to prevent the risk of getting cervical cancer.

## **2.6 Educational Status**

A study conducted in the USA indicated that despite the overall downward trend in cervical cancer, there still exists a disparity in mortality rates for cancer-related deaths among certain ages as well as geographic and socio-economic groups. It has been found that lower education, lack of health coverage and rural location are associated with inadequate preventative cervical cancer screening (Uysal & Birsal, 2009:346). In a similar study conducted in Turkey, it was stated that as the level of education and age increased and in the presence of social security, the frequency of having Pap

smear testing also increased (Uysal & Birsal, 2009:346). The study conducted in California, amongst Thai Americans suggested that most women had seldom or never talked about cancer before and after learning more about the disease were uncomfortable or fearful (Love & Tanjasiri, 2012:3). It was further indicated that women with high screening rates had a high level of education. However, women with high education may not necessarily seek screening, thus additional factors must be considered. Community-based education programmes about cervical cancer improved knowledge and screening behaviour in Honduran women (Perkins et al., 2007:187).

Research shows a positive association between a woman's knowledge about cervical cancer screening and her likelihood of obtaining a Pap smear. The recommendation of a health care provider can also influence screening behaviour (Perkins et al., 2007:187). Effective female education and free mass screening are necessary for any successful cervical cancer screening programme in Nigeria. To make the most sustainable programme possible, local health providers and other community members worked alongside project staff to create a two part education programme that addressed the knowledge deficit of the community (Nwankwo et al., 2011:362).

Pilot projects are important in improving knowledge about cervical cancer prevention and promote acceptance of Pap smear screening (Perkins et al. 2007:188). There is an urgent need for community health nurses and various sectors of government to increase the level of knowledge and awareness of cervical cancer and screening methods among Nigerian women and also to provide screening facilities. The objective of this pilot project was to improve knowledge about cervical cancer prevention and promote acceptance of Pap smear screening. In countries without organized cervical cancer screening, patient education is crucial to increase the number of women screened. The study further indicated that inexpensive educational

programmes utilizing existing community resources can successfully improve cervical cancer screening knowledge and screening behaviour (Perkins et al., 2007:192). Many women present with late stage disease (Nwankwo et al., 2011:363).

The natural history of the disease yields opportunities for prevention throughout the cycle. In adolescents, health information and education about healthy behaviours, including delayed sexual initiation, reduced number of sexual partners and condom use, as well as cervical cancer prevention is critical (Washington, 2008:2). In adult women, screening for precancerous cervical lesions, followed by treatment of the lesions, has been the most effective way to halt the progression to invasive cancer (Washington, 2008:2).

Education plays an important role in encouraging women to go for cervical cancer screening, so it is important to intensify the educational programmes through campaigns and mass media so that women can become aware of cervical cancer screening programmes. Cervical cancer campaigns are limited in Thulamela, the routine of sensitising women about cervical cancer during the health calendar month is not enough, much more needs to be done, so that information should be ongoing throughout the year in order to increase cervical screening uptake.

## **2.8 Attitudes Regarding Cervical Cancer**

A study demonstrated that South Asian women had a low baseline knowledge of cancer and associated test. In addition, many South Asian women's strong beliefs about cancer as a stigmatizing painful and untreatable disease prevent them from participation in screening and make it difficult to accept health care professional's concern about early detection of cervical cancer (Love & Tanjasiri, 2012:3). According to a study that was conducted in the USA, the majority of women for lasting immigrants had limited knowledge about cervical cancer and no knowledge about HPV.

They believed that infections were caused by physical trauma, certain sexual activities, and poor hygiene caused cervical cancer; they believed that they only needed a Pap smear if they developed symptoms of a pelvic infection and felt that women, who engaged in unwise sexual behaviour in particular, should receive regular Pap smear examination (McMullin, De Alba, Chavez & Hubbell, 2005:3). The study conducted in Mexico revealed that reasons for women not obtaining Pap smear included anxiety regarding physical privacy, lack of knowledge and difficulty in accessing health care and also reported fear that any gynaecological treatment would leave them sexually disabled. In Bolivia, women believed that cancer was a death sentence (Reyes-Ortiz et al., 2011:393).

In China, a study reported that lack of knowledge about cervical cancer may be one of the important factors for the high incidence rate of cervical cancer in Uyghur women in Xinjiang province and the study further indicated that a large number of participants were totally unaware of HPV(90%) and did not know the link between HPV and cervical cancer (Kadeer, Azam, Mutallipu, Quan, Guilin & Mijiti, 2015:2). A study conducted in America among Chinese American immigrants suggested that women believed that they did not need a Pap test if they: had no symptoms, were not having intercourse with a man, and after menopause (Lee-Lin et al., 2007:1206). The top 5 risk factors that women believed increased their risk of developing cervical cancer were as follows: poor hygiene, using birth control pills for a long time, using an intrauterine device, history of miscarriage, having very frequent several sexual activity with the same man will increase the risk of getting cervical cancer (Lee-Lin et al., 2007:1206).

In Kenya, Gichangi, Estambale, Bway, Rogo, Ojwang, Opiyan & Temmorman (2003) reported that the level of knowledge among in Kenya, there is a need to increase the level of knowledge and awareness cervical cancer and screening among Kenya

women to increase uptake of current available screening facilities. A study conducted in Tanzania, the majority of nurses had inadequate knowledge of HPV transmission, HPV causes, risk symptoms, treatment and prevention of cervical cancer as has been reported in other studies in Uganda, Turkey and Nigeria (Urasa & Darj, 2011:5). The study further concluded that results from this study as well as those done in Tanzania, Uganda and Nigeria indicated that the utilization of screening services is depended on an individual' awareness of the importance of cervical cancer screening services as well as the ability of the health sector to make this service available and accessible. The results call for creation of health promotion and disease prevention policies as well as awareness campaigns and screening programmes at all levels. Integration of screening services into already existing programmes such as family planning and reproductive health services would be an effective strategy in an already financial and human resource challenged health sector (Urasa & Darj, 2011:5).

In Tanzania, a study indicated that many women thought that cervical cancer was fatal and fewer thought that cervical cancer could be treated in terms of general vaccination. Nearly all women believed that vaccination was beneficial (WHO.2006). Another study in Tanzania also indicated that women's knowledge was also implicated in screening uptake. Women with low levels of knowledge about cervical cancer and its prevention were unlikely to access screening services. Although awareness may be a significant factor, some women, nevertheless, did not seek screening. In addition to knowledge, women's attitudes towards screening may be relevant. In Thailand, researchers found that female sex workers with negative attitudes about Pap smear services were less likely to have ever had a cervical smear taken than those with a positive attitude (Lyimo & Beran, 2012:2). Cervical cancer knowledge was a strong predictor of screening status while knowledge of the disease and its prevention may motivate women to seek screening themselves. (Urasa & Darj, 2011:5)

In Uganda, Mutyaba et al. (2002) reported that reasons for women not being screened were: not feeling at risk, lack of symptoms, carelessness, fear of vaginal examination, lack of interest, test being unpleasant and not yet not being at risky age. The study further indicated that those who never had a Pap smear did not feel at risk of developing cervical cancer. The largest barrier reported by women was being unaware that preventative screening tests exist (Urasa & Darj, 2011:5). In West Africa, a study reported that low resource countries now prevent this cancer by using the HPV vaccine and effective and affordable screening tests and the study further indicated that women had low levels of knowledge regarding cervical cancer screening (Chounga, Jaquet, Coffie, Horo, Sauvaget & Adoubi, 2014:2).

In Somalia women developed a negative outlook on screening due to embarrassment associated with female genital mutilation. Other cultural barriers may lead to negative opinion about screening including concern about exposure of private body parts. The sex of the health worker who performs the Pap test, therefore, may be important as women may prefer a female (Lyimo & Beran, 2012:2). In Botswana, a study indicated that women view cervical cancer as a disease that eats the inside of the womb and associate hysterectomy with loss of sexual pleasure, divorce and failure to get a husband. (Mosavel, Simon, Oakar & Meyer, 2009).

The majority of women in less developed countries believed that screening for cervical cancer was not necessary as they perceived cervical cancer screening as an unnecessary diagnostic procedure rather than a preventive health measure. Most people in underdeveloped countries do not view preventive health action such as cancer prevention as a priority; rather, they believe in curative health action instead of preventive health practices. Infrequent use of Pap smear test is attributed to factors such as lack of a national cytology screening programme, lack of knowledge, access and financial constraints (Ibekwe et al., 2010:16-17).

Attitude can serve as a barrier for cervical cancer screening, hence it is important to educate women about cervical cancer and how to prevent it. The benefits of cervical cancer screening should be emphasised and the information should be culture sensitive so that the behaviours and attitudes can change. A study in Cape Town indicated that cervical cancer is the most common in black women and black women had never received a Pap test. Research has demonstrated that South African women who are less likely to know about and obtain Pap smears tend to be poor, less educated and unemployed.

A variety of factors are barriers to routine cervical cancer screening among women, including accessibility, cost, waiting time and quality of services. The discomfort associated with the procedure and an overall distrust of the medical system also affect screening behaviour. Furthermore, characteristics of health providers such as negative attitudes or lack of suggestions that a woman should obtain a Pap smear also play an important role. Additionally, research has demonstrated that women's knowledge about cervical cancer and Pap 'screening is extremely low in developing countries and knowledge among immigrant women in the Western world is equally poor. Cultural beliefs about cervical cancer also contribute to low screening rates—many rural South African women felt that screening is unnecessary when a women does not feel ill. Certain ethnic groups, including Latina, Korean American and African American women may be more likely to entertain fatalistic beliefs about cancer preventing them from seeking appropriate preventative care similar to women in South Africa (Mosavel, Simon, Oakar & Meyer, 2009).

## **2.9 Origin of Cervical Cancer**

The cervix is the lower part of the uterus and is divided into two major parts the endocervix and the exocervix. Squamous epithelial cells line the outside of the cervix and columnar epithelium of the endocervix joins the squamous epithelium of the exo

cervix and is called the squamous columnar junction. Often referred to as transformation zone, most cases of cervical carcinoma originate at this junction. Cervical cancer begins with neoplastic alteration of the squamous columnar junction. Abnormal cells can progress to involve a full thickness of the epithelium and invade the stroma tissue of the cervix. The cancer develops over a period of 2-3 decades in nature, but during adolescence the majority of these will spontaneous regress back to normal. Those that do not regress undergo cellular changes ranging from cervical intraepithelial neoplasia to pre-malignant changes to carcinoma in situ (Lyimo & Beran, 2012:2).

## **2.10 Knowledge of Women Regarding Cervical Cancer**

Rates of screening are substantially lower in younger women aged 20-29 years and elderly women aged 60 years and above. Also, unmarried and widowed women are less likely than married women or women living with a partner to obtain screening (Lyimo & Beran, 2012:2). Cervical cancer among Asian Americans reveals a singular trend in the USA while incidence rates for all other major racial groups have fallen in recent years. The rate of cervical cancer among Asian Americans alone show small but significant increases. Although many studies in the USA have shown that low levels of knowledge about cancer aetiology are negatively associated with regular screening practices, transportation, rising health care cost, work and family conflicts present even greater challenges to practitioners working to reduce cervical cancer disparities (Luque, Castaneda, Tyson, Vargas, Proctor & Meade, 2010:101).

A study conducted in Mexico indicated that women believed that having a Pap smear performed included that the Pap smear was an evaluation of the women's ability to bear children rather than to detect cancer, the most common beliefs about sexual behaviours related to a women's likelihood for cervical cancer included having an abortion and poor hygiene. Although most believed cervical cancer was related to an



infection caused by behaviour. None of respondents reported knowledge of HPV because the beliefs for cervical cancer risk were mostly related to socially undesirable behaviours. Women reported that they would not get Pap smear because they did not want other people to think they were bad. Beliefs regarding cervical cancer also included the relationship of susceptibility to cervical cancer and seriousness of cervical cancer.

The study further reported that most women perceived cervical cancer as life threatening, but otherwise had limited knowledge regarding HPV. Both groups indicated that Pap smear was used for STI (McMullin, De Alba, Charez & Hubbell 2005:4). In Mexico for the most common evaluated knowledge about the aetiology and prevention of cervical cancer among undergraduate medical and nursing students revealed that students knew theoretical concepts about cervical cancer. However, it seemed that they did not receive the specific elements about the practice (Gonzalez-Losa, Canto- Perez, Puerto-Solis & Noguchi, 2006:2).

A study conducted in Hindu revealed that radio broadcasting increased the proportion of women who were familiar with the term cervical cancer who could identify the means of preventing it and who understood the purpose of the Pap smear. In addition, older and underscreened women were successfully recruited for screening via radio (Perkins et al., 2007:191). A study conducted in India revealed that most women presented with cancer of the uterine cervix extending beyond the cervix.

The majority of women belonged to lower socio-economic status, were rural, aged between 35 and 64 and were highly noncompliant for complete treatment and follow-up (Chankapa et al., 2011:7). Death due to cervical cancer is considerably unnecessary because of the advent of the Pap smear test and its usefulness in early detection and hence to potential treatment (Ayres et al., 2010:197-198).

A study conducted in America among Indian women living in the Hopi reservation in northern Arizona indicated that women knew that having had multiple sexual partners was a risk factor for cervical cancer. Furthermore, the study indicated that women believed that cervical cancer screening was not viewed as a healthy behaviour per se and also indicated knowledge deficit about cervical cancer prevention (Coe, Martin, Nuvayestewa, Attakai, Papenfuss, Dezapien, Seymour, Hunter & Giuliano, 2006:775). Another study revealed that cervical cancer screening resulted in the reduction in cervical cancer incidence and mortality in women in the USA. Its benefits have not been equitably distributed through all socio-demographic groups based on age, socio-economic, cultural and racial/ethnic categories (Luque et al., 2010:85).

A study conducted in the USA suggested that outreach programmes should be placed on improving awareness among women, the importance of male role in aetiology of cervical cancer (Coe et al., 2006:775). The study recommended that screening should commence three years after women start engaging in vaginal intercourse and not later than the age of 21 after two normal annual smears, testing may be reduced to once every 3 years. Despite a growing number of screening programmes across Canada, young women continue to underutilize the Pap screening programme and often fail to return to Pap screening or follow up appointment as recommended by their health practitioners (Duffett-Leger, Letoumeau & Croll, 2008:572).

According to the study that was conducted in the USA, there was lack of knowledge with regard to both screening itself and the possible causes of cervical cancer. The main causes were seen as higher sexual activity among those aged below 37 years and smoking. The majority of women showed preference for a female professional to take the smear. The main reasons cited for noncompliance were fear and dislike of the test itself. A population based screening programme even in countries where screening is less than perfect has significantly decreased the incidence of cervical

cancer in large parts of the world. Cervical cancer, most often, develops in women of age of 30 and above to infrequent among women in fifties and sixties (Coe et al., 2006:775).

A study that was conducted in British Columbia, Canada, among Chinese immigrant women revealed that invasive cervical cancer is the second leading cancer among women in mainland China and it is also an important health problem for Chinese immigrant women to North America. These immigrants have a higher incidence and mortality from the disease compared to the general North American population. This was due to inadequate Pap screening and average knowledge levels about cervical cancer. Risk factors are low in Chinese Canadian women, especially those with less education and those who received their usual care from male doctors. Knowledge of the risk factors influence Pap screening behaviour. Culturally and linguistically appropriate education intervention to address Pap testing and risk factors for cervical cancer are needed in the Canadian Chinese community. Education resources are also needed for their primary care givers (Hislop, Teh, Lai, Shu & Taylor, 2004:167).

A study conducted in British Columbia revealed that South Asian women are at a higher risk for invasive cervical cancer. Early marriages, multiparty, multiple abortions, lack of health services have been linked to the high rate of cervical cancer. Clinical observation indicates that the high incidence in British Columbia may be related to South Asian women's low participation rates in cancer screening programme (Grewal, Bottorff & Balneaves, 2004:413). In Bolivia, information regarding HPV infection is very scarce, especially in regions like the Amazonian low land. It was further indicated that HPV particularly affect women of reproductive health with low income (Cervantes, Lema, Tado, Andrade, Quiroga, Garcia, Torricos, Zegarra, Vera, Panosa, Artcaga, Segurondo, Romero, Dulon, Asturizaga, Gomez, & Sonodo, 2003).

The study in Ghana showed less than 1500 Pap smears were performed per year in the capital city Accra and despite the fact that most women in Ghana presented with late stage of disease there was limited capacity to manage large pre-cancerous lesions or invasive cervical cancer (Sanghvi et al., 2001). Another study in Ghana indicated that that less was known about risk factors and screening interval. The study also revealed that although the relationship between sex and cervical cancer was known, less was known about other risk factors (their partner's prior sexual experience, smocking, diet and family history) and very little was known about the link between HPV and cervical cancer (Abotchie, Phil, Navkirah & Shoka, 2009:1). In Kenya, approximately 85% of cases present in late stage of the disease, similar challenges are found throughout East and Central Africa where many women had an advance stage of the disease upon first presentation (Sanghvi et al, 2001).

In Tanzania, a study indicated that for most women who had never had a Pap smear the most common reason was not knowing where to go followed by seeing no reason for the test, the other reason being afraid of the test and being afraid of the bad results (Urasa & Davj, 2011:50). The study further indicated that for the test women's knowledge was also implicated in screening uptake. Women with low levels of knowledge about cervical cancer and its prevention were unlikely to access screening services. Although awareness may be a significant factor, some women, nevertheless, did not seek screening. In addition to knowledge, women's attitudes towards screening may be relevant.

In Thailand, researchers found that female sex workers with negative attitudes about Pap smear services were less likely to have ever had a cervical smear taken than those with a positive attitude. In Somalia, women developed a negative outlook on screening due to embarrassment associated with female genital mutilation. Other cultural barriers may lead to negative opinion about screening including concern about

exposure of private body parts, the sex of the health worker who perform the Pap test, as most women may prefer one who is a female (Lyimo & Beran, 2012:2). The study that was conducted in Vanuatu suggested that the majority of women for lasting immigrants had limited knowledge about cervical cancer and no knowledge about HPV. A comprehensive study conducted in 2008 in Vanuatu showed that general embarrassment and lack of knowledge were the greatest limitations reported to affect that ability and confidence for women to investigate health concerns.

Vanuatu women are poorly educated regarding health issues particularly cervical cancer. Health awareness and health prevention strategies in developing countries are dependent on the existing infrastructure and the level of commitment provided by the government and access affordable to cervical cancer screening. Treatment and preventive education are limited for many women in the developing countries. Lack of resources for scientifically trained staff and funding to support on-going testing, treatment follow-up procedure, and associated transport and specimen cost are key limitations in this area of preventive health (Fontinatos, Warmington, Walker & Pilbean, 2010:127).

A study conducted in Lagos, Nigeria, demonstrated a very low awareness of cervical cancer and absence of cervical cancer screening practices among the female urban slum dwellers. Efforts need to be intensified to increase awareness of this condition and promote low-cost cervical cancer screening among this underserved population at high risk for cervical cancer (Bologun et al., 2012:75). The study further indicated that women were not willing to undergo a screening test for cervical cancer the commonest reasons for this being lack of awareness, absence of symptoms. Another study conducted in Nigeria revealed that women with low level of education about cervical cancer and its prevention are unlikely to access screening services (Ocheo, Kaoje, Gana & Ango, 2013:7).

The natural history of cancer of the cervix is now thought to be associated with causation strains of sexually transmitted HPV. The role of other STIs is unclear. To date, studies of the association between invasive cancer of the cervix and HIV infections are inconclusive. Knowing the risk factors helps us to focus on those that can be changed or avoided rather than those that we have no control over. Understanding risk factors that cannot be changed is important in convincing women with the factors to get a Pap test for early detection of cervical cancer (Perkins, Langris, Stem & Simon, 2007:187).

Tshwane University of Technology (TUT) suggested that visual inspection with acetic acid (VIA screening) was acceptable, however, the knowledge of women despite having a higher level of education was low, reason for not having had a Pap smear on previous occasions were primarily that they had not known about screening, distance from health care facility, lack of money, level of knowledge was low and cervical screening was low. It was also found that knowledge of cancer was related to higher levels of education (Marre, Lu, Maselo & Wright, 2009:4). Another study at TUT suggested that a large number of women included in the study were at risk of contracting STIs or cervical cancer in later life due to lack of knowledge and awareness about cervix cancer.

The study provided evidence that women were not able to protect themselves from cervical cancer by insisting on condom use. These women lacked knowledge about cervical cancer and therefore could not associate condom use with self-protection against the disease (Maree, 2007:101). The transmission of knowledge should be done in such a way that it also manifests in healthy behaviour by women. Only if the women are knowledgeable to such an extent that they are also willing to act and change their behaviours, can their health be promoted and will they be able to take responsibility for their own health (Maree, 2007:95).

A study conducted in Mdantsane, Eastern Cape, indicated lack of knowledge in the Mdantsane community about the aetiology, symptoms and risk factor of cervical cancer (De Kubber, Peters & Soeters, 2011:72). Lack of knowledge about cervical cancer and the risk factors make women to be ignorant and delay seeking medical help, however, if women in rural communities are informed about diseases and their risk factors, signs and symptoms, it will increase their likelihood of utilising the services and presenting themselves early for screening.

## **2.11 Knowledge Regarding Cervical Cancer Preventive Strategies**

### **2.11.1 Pap Smear**

A study conducted in the USA suggested that women have a multitude of attitudes and sentiments towards cervical cancer and cervical cancer screening—beliefs are affected by the individual's perception of acceptability, stigma, provider influence and ease of obtaining a cervical cancer screening. The study further indicated that several reports accentuate that women were not told by health care providers that they needed a screening and failed to clearly provide information on the benefits for screening exams to detect cancer early (Throop, McMullin, 2009:2)

According to Canadian guidelines, Pap testing is recommended once women become sexually active or turn 18 years old. Cervical cancer screening by Pap smear lowers the incidence and provides early detection of cervical cancer and it is a preventable health measure that could be available on a regular basis to all women at risk (Duffett-Leger et al., 2008:572). A study conducted in Canada revealed that for complete treatment and follow-up, opportunistic screening with cytology colposcopy and test for HPV and appropriate treatment are available on payment at urban private medical centres, but are not available at urban and rural government health centres that are accessed by women of the lower socio-economic status who need it most, as the cytology screening in this setting is not feasible (Chankapa et al., 2011:48).

Health promotion campaigns need to ensure that all women, and particularly young women, continue to be educated on cervical cancer and the HPV as well as the importance of having regular Pap tests. Cervical cancer screening by Pap smear lowers the incidence and provide early detection of cervical cancer and it is a preventable health care measure that could be available on a regular basis to all women at risk. As the population of ethnic women increases it is important to assess whether these women are aware of and utilising these services (Shand et al., 2010:202). The natural cervical cancer screening programme which was set up in 1988 to invite all women between 24 and 64 for cervical cancer screening has fallen dramatically. Early detection and treatment prevent around 75% of cancer developing (Shand et al., 2010:202).

It is important that the following recommendations are enforced: Education of a healthy person concerning the importance of cervical screening, training of health personnel in taking smears correctly; and educating the community about the importance of vaccination of boys and girls against HIV (Herbst & Phil, 2011:39). In Sub-Saharan Africa, cervical cancer comprises 20-25% of all cancer among women. This is about double that of women worldwide. Currently, there is no national cervical cancer service policy guideline in Tanzania. Screening is a universally accepted early detection strategy, yet the utilization of screening in many developing countries is still poor (Lyimo & Beran, 2012:2).

A study that was conducted in Nigeria showed that 28.7% women possessed a good knowledge of cervical cancer with 46% of them being aware of what cervical cancer screening was all about. It was revealed that 31.4% of women had never had a cervical cancer screening done in the past. Some of the women did not perceive cervical cancer as a serious disease and 7.3% of them did not even see themselves at risk of contracting the disease despite their being sexually active (Adentola,2011:2).



A study conducted in Nigeria in 2007 revealed that women presented with the late stage of the disease. It further revealed that the most important factors hindering the use of available cervical cancer screening were lack of knowledge and the feeling that they had no medical problems. The study showed that there was very poor knowledge and practice of cervical cancer screening among Nigerian women (Nwankwo et al., 2011:365). In developing countries, organised cervical cancer screening or preventive programmes are an exception rather than routine, and it is yet to be given consideration by health policy-makers. Most screening tests done so far in Nigeria were opportunistic or spontaneous screenings. The trend has always been for women to present for treatment with the advanced stage disease (Nwankwo et al., 2011:363).

The ministry of health in Botswana came up with a national guideline for cervical cancer screening in order to reduce the incidences of women presenting with late-stage cervical cancer. According to the policy document, women should have the first cervical cancer screening test done three years after the first sexual intercourse or at the age of 18 years, whichever comes first, and then annually for three consecutive years. If they have normal Pap smear results, they can continue with cervical cancer screening every three years while those with abnormal smear results repeat the screening more frequently, annually or every six months depending on doctor's recommendation (Ibekwe et al., 2010:16).

The current status of cervical cancer screening in South Africa is that the cervical cancer screening policy has been implemented in some areas, but not throughout the country. The results are that currently there is no population-wide screening programme in South Africa. In several areas, partial screening takes place. In the private sector opportunistic screening is commonly practised (Botha et al., 2010:23). In the meantime, Pap smear remains the cornerstone of gynaecological practice, but clinicians will now use the test ever more discriminately (Kent, 2011:14).

A study conducted by the University of Pretoria on women who are 30 years and older, cytology testing every three years is safe and cost effective for low risk women of 30 and above who have had three consecutive negative Pap test results. HPV testing can be used in women 30 years and above with or without cytology (Richter, 2011:199). Women should be made aware through health education about the screening programmes that are in place in the government and in the private sector so that they can see the importance of screening. Information regarding the benefits of Pap smear, that it is a simple procedure, non-painful test that has no side effects to remove fear of the unknown.

### **2.11.2 Vaccine**

The vaccines, Gardasil and Cervarix, became available and were registered by the United States Food and Drug Administration (FDA) in 2006 and in South Africa by the Medicines Control Council (MCC) in 2006. Gardasil also known as Silgard is a vaccine proven to prevent certain types of HPV, specifically HPV types 6, 11, 16 and 18. HPV types 16 and 18 are currently associated with about 70% of cervical, 26% of head and neck and many vulvas, vaginal, penile and anal cancer cases, HPV types 6 and 11 are associated with about 90% of genital warts cases.

Gardasil prevents HPV infection, but does not treat existing infection. Cervarix is a vaccine against certain types of cancer causing HPV which was designed to prevent infection from HPV types 16 and 18, which currently cause about 70% of cervical cancer cases. HPV vaccine is typically given to women at the age of 9-26 years and it is effective if given before infection occurs. The vaccine has shown to be effective up to 31 years (Herbst & Phil, 2010:38). According to a study in Australia, many women do not understand the risk factors for HPV infection, the clinical problem it may cause and the potential long-term complications of infection. HPV vaccines have undergone phase 3 clinical trials in Australia (Giles & Garland, 2006:311).

During the last two years, the vaccines were marketed to prevent cervical infections with HPV in most countries worldwide. Knowledge about HPV and cervical cancer and the benefit of vaccination is low in women, in general, but also in health providers and patients suffering from dysplasia or cervical cancer (Dander et al., 2009:1016). There is a dire need for cervical cancer awareness and education for women. Health care providers are perfectly positioned to act as catalysts to improve cervical cancer knowledge and preventative practice to ensure optimum health promotion of all women (Montgomery, 2009:3). In 2007, the Australian government commenced a national HPV vaccination programme—the first in the world—and provided females aged between 12 to 26 years with the HPV vaccine (Shand et al., 2010:203).

Presuming that the vaccine remains effective in preventing HPV infections, it is predicted that vaccination of all women below 25 years will lead to a 60-70% reduction in cervical cancer related mortality within 30 years. There is no evidence to suggest that the vaccine prevents cervical cancer in women who have already been exposed to HPV. Therefore, the ideal time to vaccinate is prior to the onset of sexual activity and potential exposure to the virus (Shand et al., 2010:202). The incidence of cervical cancer has declined in developed nations due to routine use of cervical cancer screening services (Nwankwo et al., 2011:362). In Tanzania, although prevention in a form of HPV vaccine is shown to be effective, the vaccine is expensive and generally unavailable in low-income countries.

The WHO recommends a preventive approach of cervical cancer screening involving a defined referral system for diagnosis, treatment and follow-up (Lyimo & Beran, 2012:2). In developing countries, WHO recommends that routine HPV vaccination should be included in national immunisation programmes, provided that prevention of cervical cancer or other HPV-related disease constitutes a public health priority (Bello et al., 2011:27).

A study conducted in Nigeria revealed that for the developed world, education, advocacy, acceptance and evaluation of long term vaccine efficacy appear to be crucial to increasing uptake of the HPV vaccine. Secondary prevention of cervical cancer is already established in Europe and Scandinavia with an increase in the use of HPV testing for triage of women with suspicious lesions (Bello, Enabor & Adewole, 2011:26-27).

In Tanzania, current vaccinates against six diseases through the expanded programmes on immunization (EPI) and uptake of these vaccinations has been high reaching 75% in children 12-23 months. Although women themselves reported that their intention of high acceptance of HPV vaccine their husbands/partners acceptance of the vaccine was lower, women may not feel confident on behalf of their partners. However, in general it has been suggested that women make the majority of health decisions for their children in these contexts. Cervical cancer screening programmes that are affordable, acceptable and effective remains a priority and the ethics of implementing such a programme should be considered in the light of availability of treatment.

Introduction of quadrivalent vaccines that protect against 70% of cervical cancer is a promising and important shift towards prevention of these disease and recently announcement of vaccination plans by global alliance for vaccines and immunization (GAVI) represent are important steps towards national introduction of HPV vaccine in Tanzania. Public education are a particular concern that could be addressed within campaigns in order to ensure higher wide spread acceptance. Overall, participation in all four countries failed that vaccines is important for preventing illness and has significant benefits (WHO, 2006). Another study conducted in Tanzania revealed that the recent introduction of HPV vaccine provides the opportunity to substantially reduce transmission of both high risk type 16, 18 and low risk types 6, 11; by doing so it will

reduce not only morbidity and mortality related to cervical cancer, but also the financial burden brought about by diagnosis and treatment. It prevents infection when given to the adolescent before the sexual debut. Due to high cost the vaccine, it is not available to the public in low-resource countries (Urasa & Darj, 2011:50).

In Bulgaria, the vaccine which protects against infection with HPV about vaccinations is a controversial topic in current debates about health prevention and policies worldwide. It has recently been introduced to the pharmaceutical market and questions about the efficacy and effectiveness of the new product have been raising debates both in public spheres as well as professional circles. On the other hand, the vaccines have been celebrated as a revolutionary discovery which for the first time in history prevent against a cancer that is the second most frequent cause of cancer-related deaths among women worldwide (Tondorova, Karamanova, Dimitrova, 2012).

The study further indicated that women often explained that in order to overcome the fears and doubts about the vaccine, they need more information, more knowledge, solid evidence that must be provided from officials. They also emphasized that mass media through advertising campaigns in which representatives of the state and distinguished medical professionals guarantee the efficacy of the vaccine could reduce the fear and anxieties surrounding the image of the vaccine.

In the Bulgarian context, some moral considerations and stigma over the sexuality-related origin of HPV infections shape also how the public image of the HPV vaccine has been constructed—they might have lesions and even cancer especially if they have HIV infection. In systemic cytological smear screening programmes, it is known that precancerous lesions are detected for 10 years or more before cancer develops. There was a need for sensitisation of health workers about cervical cancer and the importance of screening.

Training curriculums of nurses and medical students need to be revised to include more practical cervical cancer screening skills (Mutiyaba, Mmiro, & Weiderpass, 2006:2). Community-based education programmes about cervical cancer improve knowledge and screening behaviour in Honduran women (Perkins et al., 2007:189). Research shows a positive association between a women's knowledge about cervical cancer screening and her likelihood for obtaining a Pap smear (Perkins et al., 2007:187). Many women present with late stage disease (Nwankwo et al., 2011:2).

A study conducted in South Africa revealed that advisory bodies also recommended rigorous follow-up of all abnormal cytology in HIV-positive women with colposcopy and subsequent Pap smear of frequency of less than every year. In addition, it is emphasized that cervical screening should be integrated into HIV management services that women already make use of (Wake, Rebe & Burch, 2009:46).

A study conducted in urban South Africa indicated that lack of knowledge about cervical cancer and screening has been found to impede the screening programme in South Africa. This is reflective of a general lack of awareness about symptoms and consequences of other STIs (Wake et al., 2009:46).

According to the study that was done by de Jonge, Makin & Lindeque (1999:44), black women presented late with advanced stage of disease due to unfavourable lack of cancer awareness and knowledge among the black population. On-going inequalities in opportunistic screening were pivotal to this situation (Sibiya & Grainger, 2007:49).

It is also supported by the study that was done in King Edward Hospital, Durban by the Hypertension Unit of the Medical Research Council that revealed that 65% of women questioned had no knowledge about this form of cancer or Pap smear (Sibiya & Grainger, 2007:49).

## 2.12 Practices Regarding Cervical Cancer Prevention

A study conducted at Durban Tertiary Hospital reported that only 27% of patients have had a Pap test. Another study conducted in Kwazulu-Natal, Ilembe Region, revealed that screening efforts in developing countries have had only limited success for a number of reasons, including constrained screening services, failure of programmes to target or reach women at risk, limited awareness of cervical cancer as a health problem and cultural obstacles to providing services.

The Provincial DoH Kwazulu Natal has developed a cervical cancer screening policy and protocol (2004) to implement the National policy through a PHC approach which aims to detect women at risk of developing cancer. The Cervical Cancer Screening Policy states that cervical cancer screening will be available to all women from the age of 30 years at intervals of 10 years, provided no smear has been taken within the previous five years (Sibiya & Grainger, 2007:49). The level of knowledge on risk factors for cervical cancer test were considered poor as was the utilization.

A study conducted at Mangosuthu University of Technology in Transkei, South Africa, revealed low levels of knowledge on cervical cancer, its risk factors and detection methods. The study further indicated that 15.6% of the respondents did not know about any risk factors for cervical cancer while 96% knew of risk factors, but did not know that cervical cancer is preventable and 86% did not have the test done mainly because of personal factors such as fear of the procedure of the Pap test, cultural or religious reasons, and the fact that they were not ill (Hoque & Hoque, 2009:21).

Pap smear uptake was low among these women. One should therefore consider improving awareness of the programme to further their knowledge by educating them about risk factors and practising preventive measures. Another study that was conducted at Mangosuthu University of Technology found that as many as 60% of

college aged women had some form of HPV, which is causally linked to cervical cancer (Hoque, 2010:127). The study further revealed that the majority of respondents were young and sexually active, having initiated sexual activity at 17 years. A study found that there was a high prevalence of the major risk factors for cervical cancer among the respondents, and this included initiation of coitus before 18 years, multiple sexual partners, previous history of sexually transmitted disease and vulva warts.

Risky behaviour, lack of knowledge and preventive care, such as regular Pap test, led to high incidences of HPV infection in college women that, in turn, led to cervical cancer later. Lack of HPV knowledge coupled with misperception about susceptibility, impacted college students on attitudes and behaviours regarding cervical cancer prevention. The study also revealed that students had never heard of HPV infection and were unaware of related cervical cancer risk (Hoque, 2010:127-128). The very same study further indicated that women of poorer communities were mostly affected with the disease (Hoque, 2010:127).

A study conducted in Pretoria provided evidence that women were not able to protect themselves from cervical cancer by insisting on condom use, poverty and physical abuse. A primary prevention strategy should focus on empowering women to protect them from cervical cancer (Maree, 2010:1). According to the study that was conducted in Soshanguve, South Africa, the South African government changed the focus on health care provision from curative to preventive health care through adopting a PHC approach (Mookeng et al., 2010:27).

According to the alliance for cervical cancer prevention (2007:2), every woman has the right to cervical screening at least once in her lifetime (Mookeng et al., 2010:27). Nurses are the backbone of PHC, especially in rural areas and they should be at the forefront of making the services available to the communities by informing and



encouraging women to make use of the screening services. If health workers are knowledgeable and are pro prevention they will encourage women to use the screening services.

### **2.13 Conclusion**

Chapter 2 discussed literature regarding cervical cancer screening and prevention, and also reviewed the knowledge and practices of women regarding cervical cancer prevention at various sites, including the Thulamela Municipality at Vhembe District at Limpopo Province.

# CHAPTER 3

## RESEARCH METHODS AND DESIGN

### 3.1 Introduction

Methodology is a blueprint for conducting the study that maximizes control over factors that could interfere with the validity of the findings. The research design guides the researcher in planning and implementing the study in such a way that it is more likely to achieve the intended results (Burns & Grove, 2003:261). According to Polit & Beck (2004:233), methodology refers to the way of obtaining, organising and analysing data. Methodological decisions depend on the nature of the research question. For instance, methodology includes the study design, setting, sample, methodological limitation of the data, collection and analysis techniques. For this study, methodology refers to how the research was done and its logical sequence. The main focus of the study was to assess the knowledge and practices regarding cervical cancer prevention among women in Vhembe District in Limpopo Province. Therefore, the research approach was quantitative (Burns & Grove, 2003:488).

### 3.2 Research Design

A research design is an integrated statement and justification for the more technical decision in planning a research project and a process analogous to the activities of an architect designing a building (de Vos et al., 2011:142). In this study, a quantitative, cross-sectional descriptive research design was used to assess knowledge regarding cervical cancer and preventive measures among rural women in Vhembe District in Limpopo Province. A descriptive design is also called observational because the researcher only describes the results without intervening. Descriptive studies are

aimed at providing an accurate portrayal or account of the characteristics of individuals, events or groups with the purpose of problem identification, justifying actions, making judgments or finding out what others are doing in similar situations. The design does not involve manipulation of variables and there is no attempt to establish causality (Polit & Beck, 2006:22).

A cross-sectional descriptive study generates insight about a phenomenon under study. Data collection takes place during one data collection period from a cross-sectional sample, appropriate for the description of the phenomenon under study (Polit & Beck, 2006:239). Descriptive studies, on the other hand, are aimed at determining the frequency with which events occur and classify information (Burns & Grove, 2005:26). A questionnaire was used to collect data from the respondents. Data were collected from the four selected clinics in the Thulamela Municipality.

### **3.2.1 Quantitative Research**

Quantitative research is an overall plan, recipe or blueprint used for conducting the research study as a whole (de Vos et al., 2011:142; Burns & Grove, 2009:41). In this study, the objective was to assess the knowledge of rural women regarding cervical cancer, HPV and HPV vaccine, knowledge regarding cervical cancer prevention, describe practices of women aged 30 years and older regarding cervical cancer prevention. Quantitative research (also referred to as the survey of the study) refers to those studies whose findings are quantified and reported as summary statistics and analysis—mainly numerical data are dealt with. In a quantitative design, the researcher's role is that of an objective observer focusing on specific questions and objectives that remain constant throughout the study (Schneider et al., 2007:639). Quantitative research is referred to as a hard science. It tends to overemphasize deductive reasoning, the rule of logic and the measurable attributes of human experiments. It has its roots in logical positivism. The special attributes of quantitative

research, according to Burns & Grove (2001:27), are that it focuses on a relatively small number of concepts, which are concise and narrow. It begins with preconceived ideas about how the concepts are interrelated, uses structured procedures and formal instruments to collect information, collects information under conditions of control, emphasises objectivity in the collection and analysis of information, and analyses numeric information through statistical procedures. The investigator does not participate in the events under investigation and is more likely to collect data from a real distance and incorporate logical deductive reasoning.

### **3.2.2 Descriptive Research**

This study was descriptive because it aimed at exploring and describing the knowledge and practices of women aged 30 years and older regarding cervical cancer prevention. Descriptive research aims at describing a phenomenon in real life situations, discovering new meaning and determining the frequency with which something occurs (Brink, 2003:109). In this study, a descriptive approach was adopted for describing the phenomenon. Through descriptive research, the concepts were described and relationships that provided the basis for further research were identified.

Descriptive designs are used for the development of a database for any science. In this study, a database about knowledge and practices regarding cervical cancer prevention in Thulamela Municipality was initiated. Descriptive design describes concepts and identifies relationships. In the study, knowledge regarding cervical cancer, HPV and HPV vaccine was described from the information obtained from the respondents. Burns & Grove (2003:200) stated that the purpose of descriptive research is to provide a picture of a situation as it occurs naturally. This design provides the researcher with new insights and highlights potential strategies for future improvement on current knowledge of cervical cancer prevention.

### **3.2.3 Study Setting**

Vhembe District is one of the six regions of the Limpopo Province situated in the north eastern side of the Province. It is further divided into four municipalities: Venda rural areas according to the new municipal demarcations. The study was conducted in Thulamela Municipality with two demarcations, Thulamela A and B.

### **3.2.4 Population**

Population refers to individuals in the universe who possess specific characteristics; it is the totality of persons, events, an organisation's units, case records or other sampling unit with which the research problem is concerned (de Vos et al., 2011:223). Target population is the specific pool of cases that the researcher wants to study. Accessible population refers to those cases that conform to the eligibility criteria and are accessible to the researcher (de Vos et al., 2011:225; Polit & Beck, 2008:761; Mouton, 2009:134). In this study, the population were all rural women age 30 years and older in Thulamela Municipality of Vhembe District in Limpopo Province. Target population is the aggregate of cases about which the researcher would like to make generalizations (Polit & Beck, 2004:290). The target population were all women who were coming for consultation in four selected clinics.

### **3.2.5 Sample and Sampling Methods**

#### **3.2.5.1 Sample**

A sample comprises elements or a subset of a population considered for actual inclusion in the study (de Vos et al., 2011:223). The sample for this study was women aged 30 years and older in Thulamela Municipality selected from the population of women aged 30 years and older in four specific selected clinics of Thulamela Municipality of Vhembe District in Limpopo Province (Table 3.1).

**Table 3.1:** DHIS Vhembe District—Information for midyear 2011- 2012

Name of Clinic	Total	10%	Grand Total*
Malamulele	3150	315	
Mhinga	3921	392	
Muledane	2524	252	
Phiphidi	5290	529	1488
*Grand Total= Population for Selected Clinics Mid Year 2011- 2012			

### 3.2.5.2 Sampling

Sampling means taking a portion or a smaller number of units of a population as representative or having particular characteristic of that total population (de Vos et al., 2011:223). There are various forms of sampling techniques, including probability and non-probability sampling. Probability sampling is the random selection in choosing the elements with the probability that each element will be included in the sample. Elements selected by probability include methods such as random, stratified, cluster and systematic sampling (de Vos et al., 2011:228-231). Non-probability sampling implies that not every element of the population has an opportunity for selection in the sample. Elements are selected by non-random methods such as convenience, quota, purposive and networking and it has limited representativeness (de Vos et al., 2011:231-234). In this study, non-probability sampling was used.

### 3 2.5.3. Sampling of Local Areas

Non-probability purposive sampling implies that not every element of the population has an opportunity for selection in the sample. Elements are selected by non-random methods (De Vos et al., 2011:231). In this study, the four local areas under Thulamela A & B were selected purposefully based on the two hospitals' gynaecological register reports of 20 women who died of cervical cancer during the financial year 2011-2012. Thulamela Municipality has seven local areas, namely, Mphambo, Shingwedzi,

Mhinga, Sibasa, Tshaulu, Shayandima and William Eadie. The four local areas under Thulamela A and B were selected purposefully, namely, Sibasa, Shayandima, Mphambo and Mhinga (Tables 3.2 and 3.3). Purposive sampling is the conscious inclusion of an element in the study based on the researcher's knowledge of the issue under study (Polit & Beck, 2004:294).

**Table 3.2:** Sample of local areas in Thulamela A and B

Names of Local Areas	Sampled Local Areas
Shayandima	X
Mphambo	X
Mhinga	X
Sibasa	X
William Eadie	
Tshaulu	
Shingwedzi	
<b>Total=7</b>	<b>Total=4 local areas selected</b>

**Table 3.3:** Purposively selected clinics under Thulamela A and B

1. Malamulele Clinic	2. Mhinga Clinic
3. Muledane Clinic	4. Phiphidi Clinic

### 3.2.5.4 Sampling of Participants

One thousand four hundred and eighty eight (1488) participants were required. Therefore, convenience sampling was used. The rationale for choosing convenient sampling is that it involves the choice of readily available subjects or objects for the study until the required number of participants are obtained. Elements are included in the sample because they happen to be in the right place at the right time (de Vos et al., 2011:230).

### **3.2.5.5 Eligibility Criteria**

The criteria specify the characteristics that people in the population must possess in order to be included in the study (Polit & Beck, 2004:290). The eligibility criteria in this study were that the participants:

- Should be 30 years and older;
- Present on that day of the study at the selected clinics; and
- Declare voluntary participation.

### **3.2.5.6 Sample Size**

For the sample size to be representative, 10% of the total population was included, according to the clinic turnover.

## **3.3 Data Collection**

Data collection is the gathering of information to address a research problem. In this study, self-administered questionnaires were used. The principles for formulating the questions of a questionnaire are, information needed, creative thinking and a high level of precision by the researcher, length of a questionnaire, format of the questionnaire, pilot testing the questionnaire, ways to ensure completion of the questionnaire, data analysis, response systems (de Vos et al., 2011:190). Women aged 30 years and older were asked questions related to cervical cancer prevention. A questionnaire which is clear, neat, adequate and easy to follow with well-defined and precise directions and instructions has been drawn. The questionnaire was written in English, Tshivenda, Xitsonga and Sepedi so that it could be easily understood by participants. The participants were able to make a cross or a statement where necessary. The questionnaire was validated with a statistician before data were collected.



The researcher was present at the study sites in order to attend to problems that may arise. Questionnaires were distributed to the respondents who were participating. Considering the nature of the study, there was a need to recruit professional nurses to assist. Data were collected at the respective clinics on a particular day that the researcher visited the clinic and the professional nurses working as research assistant assisted in data collection. All the participants were followed to all the selected four clinics under the two hospitals when they reported for consultation. The questionnaires were given to the participants as they visit the clinic and were completed on site to reduce non-response. Then, after answering, the participants handed the questionnaires to the researcher (Brink, 2006:147).

### **3.3.1 Research Instrument**

Research instruments are devices used to collect data. These can be in the form of questionnaire, tests and observation schedules (Polit & Beck, 2006:502). The research instrument that was used in this study was a questionnaire (Annexure D). The questionnaires adopted from Donati et al., (2009:246) and Avis, Kaufert, Lock, McKinlay & Vass (1993:345) were used to design a self-administered questionnaire to collect relevant data regarding knowledge and practices of women regarding cervical cancer prevention. Questions were derived from the literature review. The questionnaire was translated into the local languages (Tshivenda, Xitsonga and Sepedi) by language experts to ensure its validity. It was designed following the objective of the study and divided into sections as follows:

**Section A:** Demographics of participants

**Section B:** Assessment of participants' knowledge of cervical cancer prevention. Multiple choice and yes or no questions were used to measure their knowledge.

**Section C:** Assessment of participants' knowledge of HPV and prevention practices

**Section D:** Assessment of participants' knowledge HPV vaccine and practices

For those participants who were unable to read or write, the researcher read the questionnaire and wrote the responses as the participant spoke (De Vos et al., 2011:186).

### **3.3.2 Rationale for Choosing the Questionnaire to Collect Data**

The questionnaire was chosen because the researcher was interested in determining the extent to which respondents hold a particular attitude or perspective and the researcher wanted to obtain facts and opinions about phenomena from people who were informed.

### **3.4 Validity and Reliability**

Validity refers to truthfulness, accuracy, authenticity, genuineness and soundness and is all about the test or instrument you are using; it actually measures what you need to have measured. Validity of the measurement instrument is the extent to which the instrument measures what it is supposed to measure. It is the strength of the design to produce accurate results (de Vos et al., 2011:172-173). In this study, attention was given to face and content validity to determine validity of the quantitative instrument.

#### **3.4.1 Face Validity**

Face validity refers to the extent to which an instrument "looks" valid. It concerns the superficial appearance or value of measurement procedure. In this study, the instrument was scrutinized by supervisors who are experts of the Nursing Science Department at the University of Venda; it was also presented to the DoH to ensure a high degree of face validity (de Vos et al., 2011:173).

### **3.4.2 Content Validity**

Content validity refers to the extent to which the instrument covers the complete content of the particular construct that it is set out to measure. To ensure the content validity of the instrument, the researcher presented a provisional version of the instrument to experts in the field for comments and inputs before finalizing the instrument (de Vos et al., 2011:173).

This was addressed by an extensive literature research of the studies which were similar in nature to this one, which were conducted locally and abroad in order to identify the domain of the construct before developing the questionnaire. The tool was presented to people who were knowledgeable in the field research and in this case, the supervisor of this research project had expertise in assessing the representativeness of the questions on the variables under study.

### **3.4.3 Reliability of the Research Instrument**

Reliability is the degree of consistency or dependability with which an instrument measures an attribute (Polit & Beck, 2008:764; Mouton, 2009:144) and checking if the instrument will yield same results in more than one occasion. Something that is reliable will perform in the future as it has in the past. This has been done by checking the respondents' consistency in answering the questions. The test-retest method was done to ten people by administering the questionnaire twice to the same respondents.

The first set of responses was compared with the second set by calculating the correlation coefficient. If the correlation coefficient is close to zero, it means the instrument has a low reliability and if it is close to one it means high reliability of the instrument (de Vos et al., 2011:177). The interval between the test-retest took a period of two weeks to avoid the respondents from memorising the tool.

#### **3.4.4 Pre-Test**

Pre-test refers to a small-scale study conducted before the main study (Brink, 2006:166). It is useful in the validation of the process. Pretesting enables the researcher to determine the training needs of the fieldworkers who will assist in gathering the data. Pre-test participants should indicate what they understood, anything that was unclear to them and give comments (Botma et al., 2012:137). The questionnaire, in their semi-final form was pre-tested before they were utilised in the main data collection (de Vos et al., 2011:171). The language best understood by the participants was used and in cases where respondents could not read or write, assistance was given. The pre-test study of this research was conducted at Tshilidzini Hospital with 10 women age 30 years and older and the respondents were not included in the main study (Brink, 2006:166).

#### **3.5 Data Analysis**

Data analysis is regarded as the techniques by which researchers convert data to a numerical form and subject it to statistical analysis. Statistical analysis is viewed as procedures for assembling, classifying, tabulating and summarising numerical data to obtain meaning or information. Statistics is used to describe some characteristics of a sampled group or to test similarities and differences between groups. Statistical analysis needs that the raw data be in a numerical code or numbers depending on how data were collected (de Vos et al., 2011:143). In quantitative research, statistical or numerical data is used to extract clusters of attributes comprising a new concept and depicting those attributes that do not belong to the concept (Walker & Avant, 2005:42). Univariate analysis is when one variable is analysed with a view to describe that variable using frequency distribution (de Vos et al., 2011:143). Graphic presentation is used to illustrate that data in order to comprehend the essential features of frequency distributions and in the comparison of one frequency distribution with another.

In this study, statistical analysis was done, using numbers. The descriptive statistical analysis, from the computer software spreadsheet programme, Microsoft Excel and descriptive statistical frequencies and percentages to summaries of collected data were used. Frequency distribution and graphic presentations was done to illustrate the data. Data from the questionnaire were coded using a code sheet and were analysed with Statistical Package for Social Sciences (SPSS) software. Descriptive statistics was used to analyse the data. Frequency tables were used to check the correctness of the values. If there were any missing data, they were cross-checked with the data collection form and questionnaire. The analysis results were presented in the form of tables and pie/bar charts (de Vos et al., 2011:249).

### **3.6 Ethical Considerations**

Ethics is a set of moral principles that are suggested by individual persons or a group of people. These morals need to be followed by individual persons or a group of people. They offer rules and behavioural expectations about the most correct conduct towards experimental subjects and respondents, employers, sponsors, other researchers, assistants and students (de Vos et al., 2011:115). In this study, everything that was agreed upon by the researcher and respect for human rights was considered in that the rights of participants were respected throughout the study

#### **3.6.1 Permission to Conduct the Research**

The proposal went through the school health degree committee, then was submitted to the University higher degree committee for granting of ethical clearance so that the researcher could proceed with the study in order to ensure safety and well-being of the participants. When the ethics committee has approved it was submitted to the Limpopo Provincial DoH research committee requesting permission to carry out the study in all 4 clinic under Thulamela Municipality at Vhembe District, then it went to District Health Services at Vhembe region (Annexures A, B1-B3).

### **3.6.2 Informed Consent**

Obtaining informed consent implies that all possible or adequate information on the goal of the investigation, the expected duration of the participants' involvement, the procedure which was followed during investigation, the possible advantages and disadvantages and dangers as the credibility of the researcher and voluntary participation were disclosed (de Vos et al., 2011:117). Consent forms were given to every participant to be completed (Annexure C).

Each of the respondents was informed that their participation was voluntary. The following essential information was included as part one of the consent form to enable the participant to take an informed decision before signing the consent: purpose of the study, explanation of the procedures, description of risk or discomfort, benefit of the study, .e.g., reward for participation, assurance of anonymity and confidentiality. They then signed their consent form to indicate their willingness (de Vos et al., 2011:116).

### **3.6.3 Confidentiality**

According to Polit & Beck (2008:177), the researcher must ensure that confidentiality is maintained and data collected will be held in anonymous form (Polit & Beck, 2008:178). In this study, participants' identities and their residences were not exposed in any form or published with the results; the data collected were not attached to any participant. The collected data were handled by people who were involved in processing the research, i.e., people who knew how to ensure confidentiality.

The research report findings were not in any way linked with the participants. Information provided by the subjects was treated as confidential and under no circumstances shall the information be divulged or made available to any other person, except the researcher (Brink, 2006:35).

### **3.6.4 Anonymity**

The participants did not write their names or any identification in the questionnaire in order to ensure complete anonymity and such instruction appeared at the beginning of the questionnaire. The respondents were left to answer the questionnaire in the absence of the researcher. If anonymity was threatened, such record was to be destroyed immediately. The subjects' identity would not be made available in reports and research publications. A signed consent form was not stapled to the instrument, but will be kept under lock and key by the researcher. Each subject questionnaire had a number on it and not names. The researcher kept the original questionnaires under lock and key. The data were analysed in groups - not individually, to avoid identifying respondents by their responses (Brink, 2006:34).

### **3.6.5 Freedom from Harm and Exploitation**

The researcher has respected the choices and agreements made with the participants. The initial agreement made was not changed without the knowledge of the participants. The participants were not influenced during the completion of the questionnaire. No participant was victimised because they participated in the study (Brink, 2006:32).

### **3.6.6 Freedom from Harm and Exploitation**

Participants decided voluntarily whether to participate or not; they had right to withdraw from participating at any time without risk, or any penalty or prejudicial treatment. The researcher did not exercise any power or authority to deceive participants at any stage (Brink, 2006:32).

### **3.6.7 Right to Privacy**

Privacy is to keep to oneself that which is normally not intended for others to observe or analyse. Every individual has the right to privacy or it is his/her right to decide when,

where, to whom and to what extent his/her attitudes, beliefs, behaviour will be revealed. It is imperative that researchers be reminded of the importance of safeguarding the privacy and identity of respondents and to act with the necessary sensitivity where privacy of subjects is relevant. All possible means of protecting the privacy of respondents were applied (Brink, 2006:33).

### **3.6.8 Right to Fair Treatment**

This right is based on the ethical principle of justice and includes the right to fair selection of participants and treatment. The researcher selected a population that has autonomy in order to make decisions on whether to participate or not and give consent. Women from the age 30 years and above were the population of the study and were treated with dignity and respect. Risks and benefits were distributed on the basis of their efforts, needs and rights, activities and procedures were not changed without the subject's consent. Participants received equal benefits irrespective of age, race socio-economic status. They were promised a copy of the study findings when the study was completed (Brink, 2006:33).

### **3.6.9 Protecting the Rights of Participants**

Human rights are claims and demands that have been justified in the eyes of an individual or by the consensus of a group of individual and include the right to self-determination, privacy, anonymity and confidentiality, fair treatment and selection and protection from discomfort and harm (Brink, 2006:35). Health institutions were utilized without mentioning the names of participants as part of feedback in the form of research report and then published as articles in subject journals.

### **3.7 Limitation of the Study**

The research was conducted in 4 clinics under two hospitals within the Vhembe District only. This shows that the scope was limited. It did not represent the whole of



Limpopo Province. However, the results may be vital in establishing a basis for comparing the level of knowledge and practices of women aged 30 years and older regarding cervical cancer prevention. Another limitation can be that some of the participants might choose not to answer the questionnaire due to some other personal reasons.

### **3.8 Plans for Dissemination and Interpretation of the Results**

The study report will be submitted to the provincial DoH and the district health services. A copy of the final dissertation will be kept at the university library. The information will also be published in scientific journals. Workshops will also be conducted to present the findings in Thulamela Municipality and in different provinces. Another other report will be handed to the traditional leader of Thulamela Municipality so that the information can be disseminated to the rest of Thohoyandou Shayandima, Thohoyandou Block J, Lwamondo, Sibasa, Malamulele, Mphambo, Shingwedzi, Mavhambe, Mhinga and other areas around Thulamela Municipality.

### **3.9 Conclusion**

Chapter 3 described the research design and methodology, including the population and sample, research setting, data collection and instrument for data collection, reliability and validity as well as ethical considerations applied in this study.

# CHAPTER 4

## DATA PRESENTATION, ANALYSIS AND INTERPRETATION

### 4.1 Introduction

This chapter covers data presentation, analysis and interpretation. The data presented in this research was collected using a questionnaire from clinics in Thulamela Municipality. The four clinics from which data were collected were Malamulele, Mhinga, Muledane and Phiphidi. The sample used in this study consisted of 1546 women aged 30 years and older. Raw data were coded, entered into SPSS Version 22 and processed quantitatively. The outputs are presented as frequency tables, bar graphs and pie charts in the subsequent sections. The results were analysed quantitatively and interpretations given under respective research objectives. The objectives of the study were to:

1. Assess the knowledge of rural women regarding cervical cancer, HPV and HPV vaccine;
2. Assess the knowledge of rural women regarding cervical cancer prevention;
3. Describe the practice of cervical cancer prevention; and
4. Recommend ways to improve screening uptake.

The structure of the chapter is as follows: introduction, data presentation, analysis and interpretation done under each objectives, summary of findings and conclusion to the chapter.

## 4.2 Data Presentation, Analysis and Interpretation

### 4.2.1 Section A: Demographic Data

**Question 4: Where do you come from?** The distribution of respondents by clinics they visited is shown in Table 4.1.

**Table 4.1:** Distribution of respondents by clinic visited

Clinic's Name	Frequency	%
Phiphidi	580	37.5
Mhinga	396	25.6
Malamulele	315	20.4
Muledane	255	16.5
<b>Total (N)</b>	<b>1546</b>	<b>100</b>

Table 4.1 shows that in this research study the distribution of the respondents were as follows: 580 (37.5%) were from Phiphidi Clinic, 396 (25.6%) were from Mhinga, 315 (20.4%) from Malamulele, and 255 (16.5%) from Muledane. In this study, Phiphidi Clinic provided the highest number of respondents while Muledane Clinic provided the lowest.

**Questions 1 to 3, 5 and 6:** The frequency distributions of respondents by age range, marital status, ethnicity, duration of living in the area, highest standard passed and employment status are shown Table 4.2.

**Age range results:** The results show that 336 (21.7%) of the respondents were within the age range 30 to 35, 490 (31.7%) age range 36 to 40 and 720 (46.6%) were aged 41 and above. The sample used consisted mainly of women aged above 41 years.

**Marital status:** The majority of the respondents 886 (57.3%) were married, 488 (31.6%) were single, 112 (7.2%) were widows while 60 (3.9%) were divorcees.

**Table 4.2:** Distribution of respondents' demography

Variable	Frequency	%
<b>AGE RANGE (YEARS) (N=1546)</b>		
30 to 35	336	21.7
36 to 40	490	31.7
41 and above	720	46.6
<b>Total</b>	<b>1546</b>	<b>100</b>
<b>MARITAL STATUS (N=1546)</b>		
Married	886	57.3
Single	488	31.6
Widow	112	7.2
Divorcee	60	3.9
<b>Total</b>	<b>1546</b>	<b>100</b>
<b>ETHNICITY (N=1546)</b>		
Venda	1066	69
Tsonga	396	25.6
Sotho	84	5.4
<b>Total</b>	<b>1546</b>	<b>100</b>
<b>DURATION FOR LIVING IN THE AREA (YEARS) (N=1546)</b>		
1 to 5	106	6.9
6 to 10	116	7.5
11 to 15	88	5.7
16 to 20	134	8.7
21 to 25	90	5.8
26 to 30	212	13.7
31 and above	800	51.7
<b>Total</b>	<b>1546</b>	<b>100</b>
<b>HIGHEST STANDARD PASSED (N=1546)</b>		
Never attended school	140	9.1
Grade 1 to Grade 7	558	36.1
Grade 8 to Grade 11	600	38.8
Grade 12 and above	248	16.0
<b>Total</b>	<b>1546</b>	<b>100</b>
<b>EMPLOYMENT STATUS (N=1546)</b>		
Unemployed	1292	83.6
Employed	254	16.4
<b>Total</b>	<b>1546</b>	<b>100</b>

These results show that the sample is composed mainly of married and single respondents.

**Ethnicity:** The results show that the majority of the respondents 1066 (69.1%) were Venda by ethnicity, 296 (25.6%) Tsongas and 84 (5.3%) Sotho. The findings made in this study could be generalized to the two Venda and Tsongas ethnic groups.

**Duration of living in one area:** The majority of the respondents 800 (51.7%) have been living in the same locations for 31 and more years. These were mainly from those aged were 41 and above. The results also show that 212 (13.7%) respondents had been staying continuously in one area for between 26 and 30 years. The rest of the respondents have been living in the area for a shorter period. This means that this study was conducted with the majority of people staying one area for many years, above 25 years.

**Highest level of education:** Most of the respondents have either completed Grade 7, 558 (36.1%) or Grade 11, 600 (38.8%) while 248 (16.0%) had completed Grade 12 and above and 140 (9.1%) never attended school. This means that the majority of sample members were educationally literate, and could thus read and write.

**Employment status:** The majority of the respondents 1229 (83.6%) were unemployed while only 254 (16.4%) were employed. The findings of this study could be generalized mainly the unemployed women in a rural setup.

A cross-tabulation of results of **Question 1 (Age) and Question 4 (Where do you come from?)** are shown in Table 4.3. The results show a fair distribution of women in the age range 30 to 35 among the four places in which the data were collected. Phiphidi had the highest number of respondents in the age ranges 36 to 40 and 41 and above. Muledane had the least number of women in all age ranges.

**Table 4.3:** Cross-tabulation results of age and place of residence of respondents

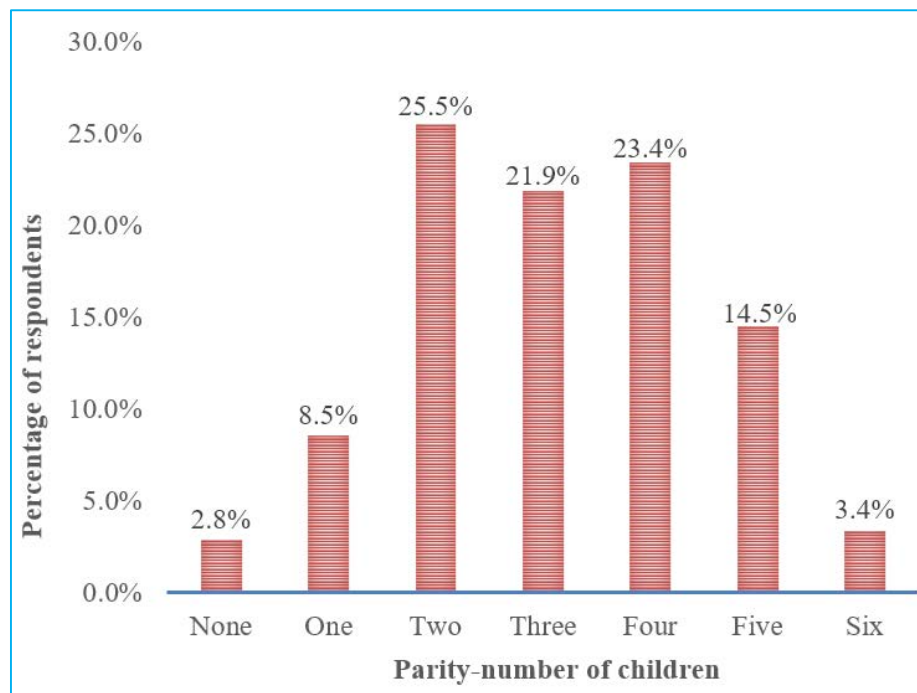
Question 1: Age range	Question 4: Which area do you come from?								Total	
	Phiphidi		Mhinga		Malamulele		Muledane		N	%
	N	%	N	%	N	%	N	%		
30 to 35	72	4.7	130	8.4	74	4.8	60	3.9	336	21.7
36 to 40	200	12.9	106	6.9	108	7.0	76	4.9	490	31.7
41 and above	308	19.9	160	10.4	133	8.6	119	7.7	720	46.6
<b>Total</b>	<b>580</b>	<b>37.5</b>	<b>396</b>	<b>25.6</b>	<b>315</b>	<b>20.4</b>	<b>255</b>	<b>16.5</b>	<b>1546</b>	<b>100</b>

**Question 7: Parity-number of children:** The results in Figure 4.1 show the distribution of respondents according to parity-number of children. Figure 4.1 depicts results of parity-number of children within the sample. The results show that 2.8% of the respondents indicated that they had no parity-number of children, 8.5% had one, 25.5% had two, 21.9% had three, 23.4% had four, and 14.5% had five while 3.4% had six. The majority of the respondents had indicated a parity-number of children two to five. The high number of parity children was an indicator that the majority of the women in the Thulamela Municipality were at risk of developing cervical cancer.

#### 4.2.2 Section B: Knowledge Regarding Cervical Cancer Prevention

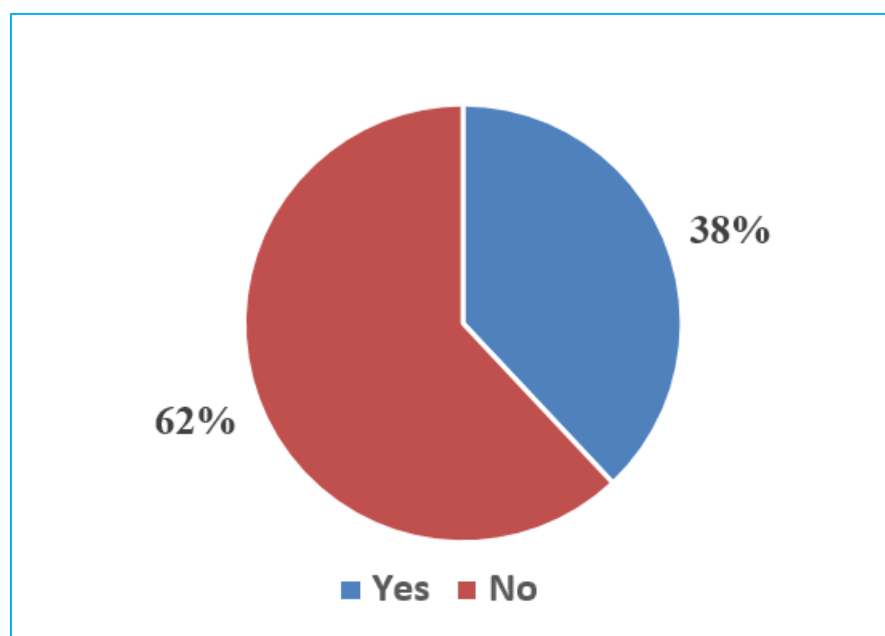
This subsection deals with data on the knowledge regarding cervical prevention. Ten questions were used to gather data from the respondents.

**Question 1: Have you ever heard about cancer of the cervix?** was intended to ascertain whether the respondents have ever heard about cervical cancer. The results are shown on Figure 4.2. The results show that the majority of the respondents, 62% (958) indicated that they had never heard about cervical cancer while 38% (588) indicated that they had heard about cervical cancer. These results show that the majority (62%) of women of the age of 30 and above were not aware of cervical cancer, only 38% were.



(N=1546)

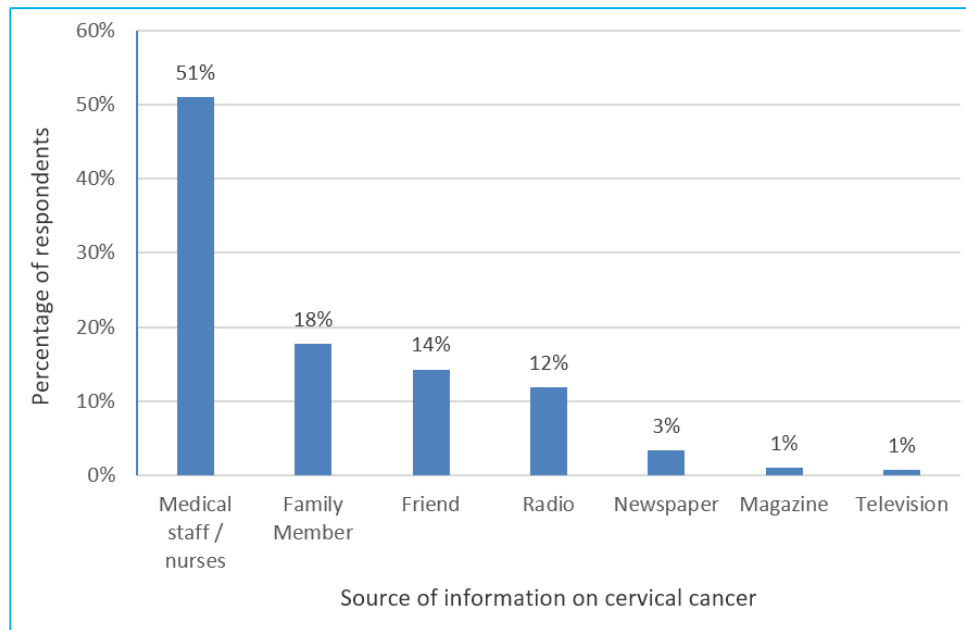
**Figure 4.1:** Distribution of respondents according to parity-number of children



(N=1546)

**Figure 4.2:** Distribution of respondents according to the question whether they have ever heard about cancer of the cervix

**Source of cervical cancer information:** The respondents who indicated that they have heard about cervical cancer, 588, were asked to indicate their source of information. Figure 4.3 shows the distribution of respondents with respect to the source of information.



(N=588)

**Figure 4.3:** Distribution of respondents according to sources of information on cervical cancer

The majority of the respondents, 51%, indicated that their source of information as from medical staff (nurses), 18% indicated family members, 14%, indicated friends, 12%, indicated radios, 3% indicated newspapers, while 1% indicated magazines and televisions. These results show that only those respondents who would have access to nurses are likely to get information on cervical cancer. Media does not play a significant role in spreading the information on cervical cancer.

**Content of information about cervical cancer:** A follow-up was made on the content of information about cervical screening that the respondents had received. The results are shown in Table 4.4.



**Table 4.4:** Distribution of respondents on cervical of information

Information on cervical cancer screen (N=588)	Frequency	%
Pap smear	244	41
Absconded	344	59
<b>Total</b>	<b>588</b>	<b>100</b>

These results show that 244 (41%) acknowledged that the content information on cervical cancer they received dealt with Pap smear while 344 (59%), the majority of the respondents, absconded this question. The results show that the content information was relevant to cervical cancer, however, only 15.8% (244/1546) of the whole sample indicated that the content information was relevant to cervical cancer.

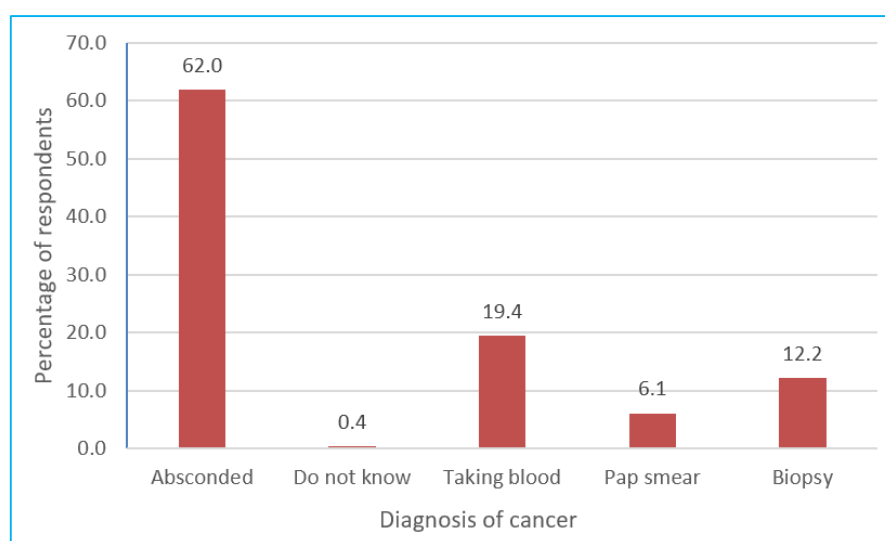
**On cervical cancer risks factors**, respondents were asked to indicate from given factors which one they thought were relevant from the six given by the researcher. The results are presented in Table 4.5. The results show the distribution of respondents according to whether they acknowledge or not that each of the given factor is a risk factor for cervical cancer. Only 588 respondents who had heard about cervical cancer went on to answer these questions.

**Table 4.5:** Distribution of respondents according to risk factors of cervical cancer

Risk factor	Responses (N=1546)							
	Yes		No		Absconded		Total	
	N	%	N	%	N	%	Total	%
Multiple sex partners	203	13.1	385	24.9	958	62.0	1546	100
Having genital virus	189	12.2	399	25.8	958	62.0	1546	100
Sexual intercourse before age 18	200	12.9	388	25.1	958	62.0	1546	100
Having contracted STIs	213	13.8	375	24.3	958	62.0	1546	100
Smoking cigarettes	228	14.7	360	23.3	958	62.0	1546	100
Use of oral contraceptives	158	10.2	430	27.8	958	62.0	1546	100

The results show that 203 (13.1%) of the respondents acknowledged that having multiple sex partners was a cervical cancer risk factor while 385 (24.9%) indicated that this was not a risk factor. On having genital virus, 189 (12.2%) confirmed this as a risk factor for cervical cancer and 399 (25.8%) indicated that it was not. On sexual intercourse before age 18 as a risk factor for cervical cancer, 200 (12.9%) affirmed this as true while 388 (25.8%) thought it was not a risk factor. Of the respondents, 213 (13.8%) indicated that contracting STIs was a risk factor for cervical cancer and 375 (24.3%) indicated that it was not. Smoking cigarettes was confirmed to be a risk factor by 228 (14.7%) while 360 (23.3%) refuted this. For use of oral contraceptives, 158 (10.2%) confirmed this as a risk factor for cervical cancer and 430 (27.8%) said it was not. The majority of the respondents, 958 (62%), absconded this question. The results show that the minority of the respondents, less than 233 (15%), seemed to have some knowledge about risk factors on cervical cancer while the majority 1313 (85%) did not have the knowledge about cervical cancer risk factor.

**Knowledge on the diagnosis of cervical cancer:** Results on the knowledge of the diagnosis of cervical cancer from 1546 respondents are presented on Figure 4.5.

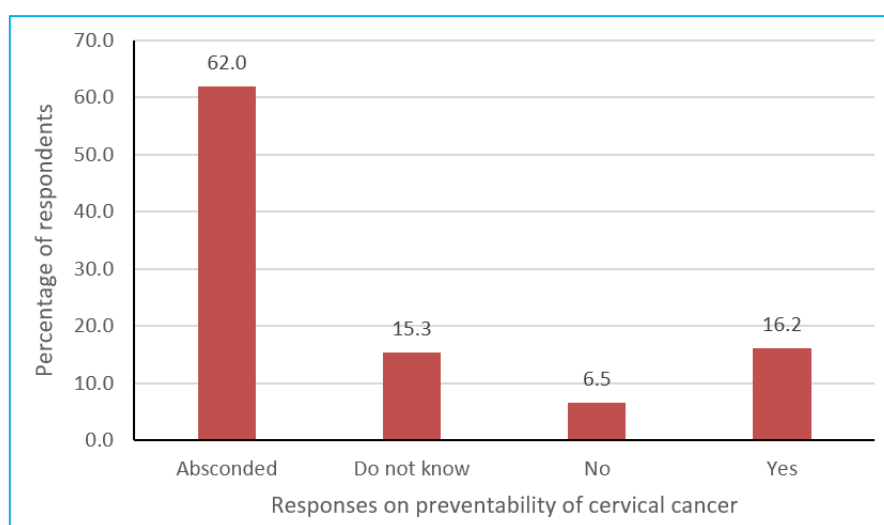


(N=1546)

**Figure 4.4:** Distribution of respondents by methods of cervical cancer diagnosis

The results show that only 6.1% (97) of the respondents indicated that cervical cancer could be diagnosed using the Pap smear, 12.2% (188) indicated biopsy and 19.4% (302) indicated taking blood. These results indicate that in this sample, 18.2% (282) of the respondents knew the diagnosis of cervical cancer while the majority 81.8% (1264) of the respondents did not know the diagnosis of cervical cancer.

**Preventability of cervical cancer:** On whether cervical cancer can be prevented or not, results show different opinions from the respondents. The results are shown in Figure 4.5. The results show that 15.3% (237) of the respondents did not know whether cervical cancer was preventable or not, 6.5% (101) said it was not preventable while 16.2% (250) indicated that it was preventable, regardless of them not having enough knowledge about cervical cancer, 62% (958) respondents did not answer this question. Only 16.2% (250/1546) of the whole sample were aware that cervical cancer was preventable. Of those respondents (250) who indicated that cervical cancer was preventable, were asked to indicate how it could be prevented. The results in Table 4.6 are for the 250 respondents who indicate “yes” on the preceding question.



(N=1546)

**Figure 4.5:** Distribution of respondents on the preventability of cervical cancer

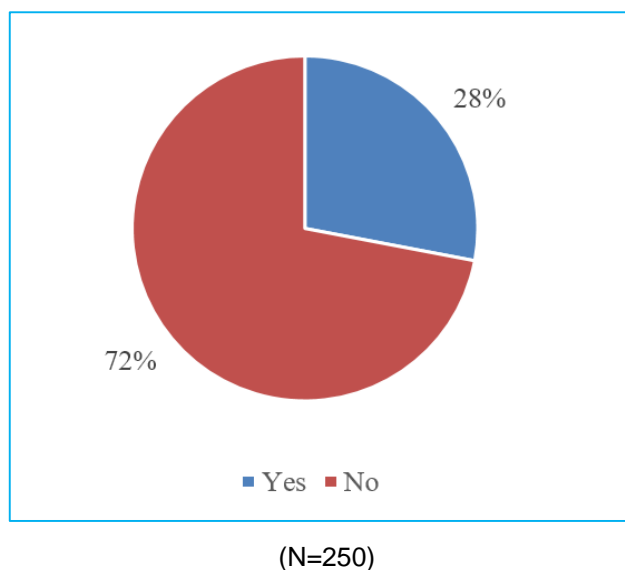
**Table 4.6:** Cervical cancer preventive measures

Preventive measure (N=250)	Frequency	%
Delaying age of sex	5	2
Pap smear	15	6
HVP vaccine	16	6
Not smoking	20	8
Using condoms	35	14
Good hygiene	59	24
Exercise	100	40
<b>Total</b>	<b>250</b>	<b>100</b>

These results show that the majority of the respondents did not know the measures used to prevent cervical cancer. The majority indicated 'exercise', 100 (40%) and 'good hygiene' 59 (24%), accounting for 64% of the 250 respondents who claimed to that cervical cancer was preventable. Only 36% (159/250) indicated those methods could possibly be used to prevent cervical cancer. In terms of the whole population, this accounts for 10.3%.

**On cervical cancer screening**, only 250 respondents answered this question. The results in Figure 4.6 show that only 28% (70/250) of the respondents knew about cervical cancer screening and 72%, (180/250). Overall, only 4.5% of the whole sample have heard about cervical screening.

**Taking of Pap smear and Pap smear offered at local clinic:** The results in Table 4.7 show the distribution of respondents on taking of Pap smear and also on whether Pap smear was offered at their local clinics. On taking of Pap smear, only 50 (3.2%) respondents acknowledged to have taken one. However, 1496 (96.8%) of the respondents confirmed that they did not take any Pap smear. The minority of respondents 132 (8.5%) indicated that their local clinics offer Pap smear, 358 (23.2%) indicated that their clinics did not offer any Pap smear.



**Figure 4.6:** Distribution of respondents according to cervical screening

However, the majority 1056 (68.3%), did not know whether such tests were being carried out in their clinics. These results showed that a small percentage of respondents were taking Pap smear, 3.2% and 8.5% who knew that their clinics offered Pap smear test services. These findings were indicators of lack of awareness of cervical cancer also lack of knowledge on the importance of taking the screening. When asked for the reasons for not taking the screening test, the majority of the respondents could not do so.

**Table 4.7:** Distribution of respondents taking Pap smear and Pap smear offered at clinics

Variable	Yes		No		Do not know		Total	
	N	%	N	%	N	%	Total	%
Taking Pap smear	50	3.2	1496	96.8	0	0	1546	100
Pap smear offered at local clinic	132	8.5	358	23.2	1056	68.3	1546	100

**Reason for not taking Pap smear:** Only 122 respondents gave reasons to why they were not going for Pap smear. Table 4.8 shows the distribution of respondents according to the reasons given for not taking a Pap smear.

**Table 4.8:** Distribution of respondents according to reason for not taking a Pap smear

Reason for not taking Pap smear	Frequency	%
No reason	44	36.1
Fear	38	31.1
No information	27	22.1
Time factor	13	10.7
<b>Total</b>	<b>122</b>	<b>100</b>

The results show the distribution of respondents according to the reasons for not taking a Pap smear: 44 (36.1%) indicated that there was no reason for not taking a Pap smear, 38 (31.1%) indicated fear, 27 (22.1%) indicated that they did not have information on Pap smear, while 13 (10.7%) cited time as a factor. On the possibility of getting tested when one was given a pamphlet about Pap smear, results are shown Table 4.9.

**Table 4.9:** Distribution of respondents on the willingness to take a cancer screening test

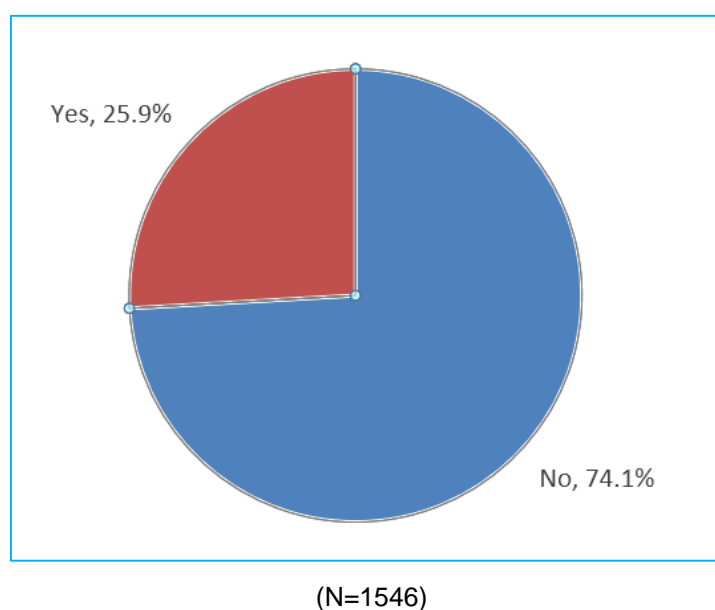
Response	Frequency (N=1546)	%
Do not know	264	17.1
No	348	22.6
Yes	930	60.3
<b>Total</b>	<b>1542</b>	<b>100.0</b>

The results show that 264 (17.1%) respondents were not decided about taking a cancer screening test when given a pamphlet on Pap smear, 348 (22.6%) indicated that they were not willing to take the screening test and the majority, 930 (60.3%), indicated their willingness to take a screening test once they had a pamphlet. These results are an indication that probably lack of information on cervical cancer was a cause for not taking a screening.

### 4.2.3 Section C: Knowledge About HPV

The results for this section were intended to determine the knowledge of respondents about the HPV. All respondents were eligible to answer the first question on whether they ever heard about the HPV. Results on hearing about HPV are shown Figure 4.7. The results show that only 25.9% (400) of the respondents had heard about HPV and the majority 74.1% (1146) had not heard about HPV. These results show that the majority of the respondents did not have any information about HPV.

**Source of information about HPV:** The results in Table 4.10 show that 1146 (74.1%) respondents indicated that they did not know, 246 (15.9%) indicated nursing staff as their main source of information, the second source of information were family members, 58(3.8%) respondents, then radios 36 (2.3) respondents, neighbour, 30 (1.9%), newspapers 18 (0.8%) respondents and television was the least source of information as only 12 (0.8%) of the respondents indicated it as their source. For the minority of respondents who had information on HPV the results show that the main source of information was nursing staff while the least indicated television.

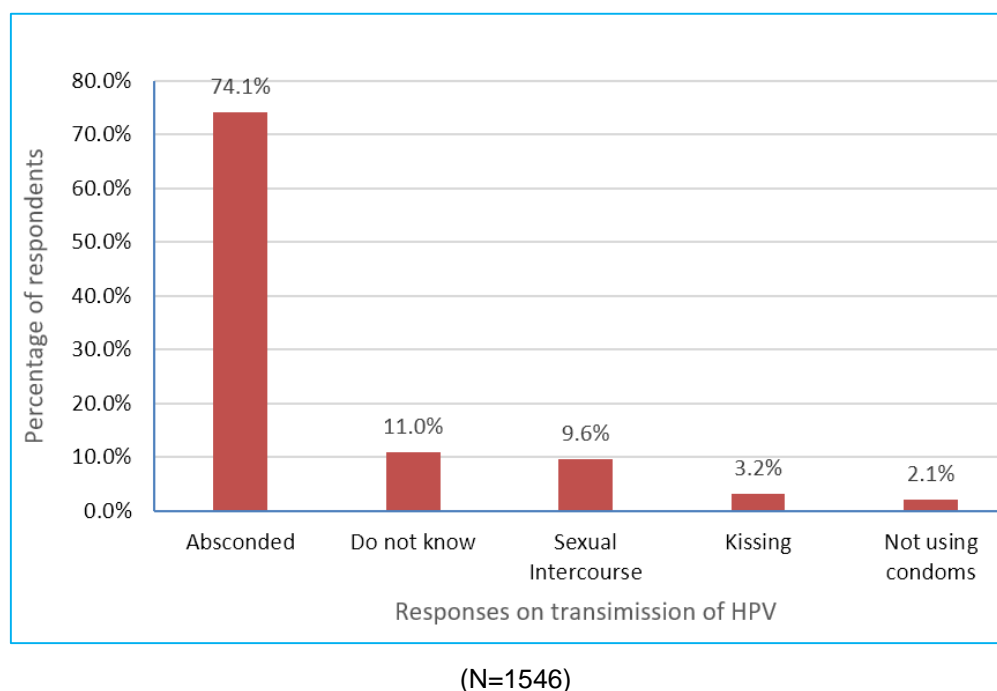


**Figure 4.7:** Distribution of respondents according HPV information

**Table 4.10:** Distribution of respondents on source of HPV information

Respondents (N=1546)	Frequency	%
Do not know	1146	74.1
Nursing staff	246	15.9
Family member	58	3.8
Radio	36	2.3
Neighbour	30	1.9
Newspaper	18	1.2
Television	12	0.8
<b>Total</b>	<b>1546</b>	<b>100.0</b>

**How the virus is associated with cervical cancer:** The results are shown in Figure 4.8.



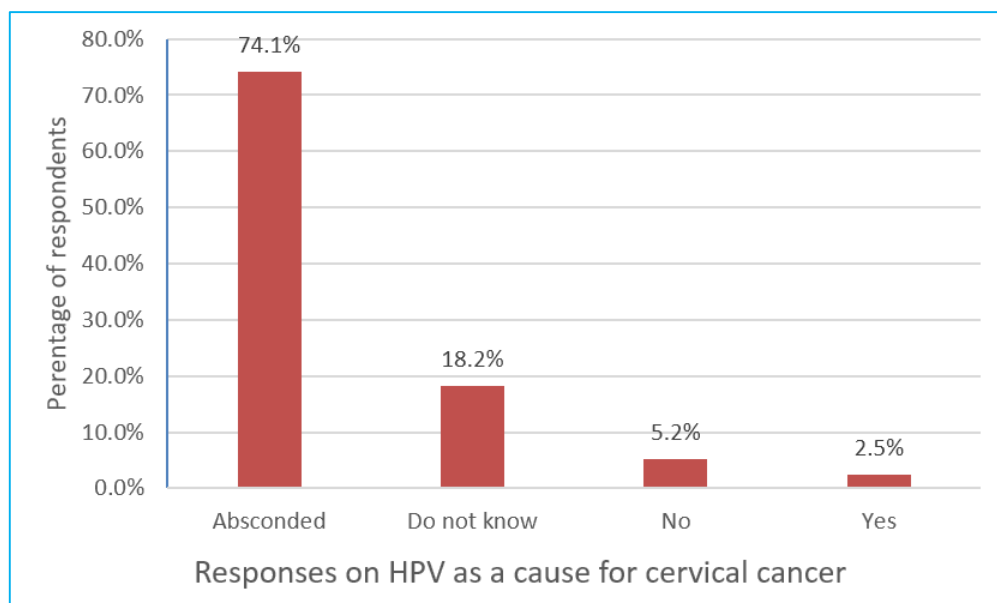
**Figure 4.8:** Distribution of respondents on cervical cancer virus transmission methods

Figure 4.8 shows that the majority of the respondents, 74.1% absconded, 11 indicated that they did not know how the virus was associated with cervical cancer transmission,



9.6% indicated having sexual intercourse as a mode for transmitting the virus, 3.2% indicated kissing and 2.1% indicated not using condoms. The results confirmed that the majority of those who had information on HPV did not know how the virus was transmitted.

**Whether HPV can cause cervical cancer:** The results in Figure 4.9 show that the majority of the respondents, 74.1%, did not answer this question, 18.2%, did not know that HPV caused cervical cancer, 5.2% indicated that HPV did not cause cervical cancer, only 2.5% of the respondents indicated that HPV caused cervical cancer. This implies that the majority of the respondents, 97.8% were ignorant of the fact that HPV caused cervical cancer.



(N=1546)

**Figure 4.9:** Distribution of respondents on HPV as a cause for cervical cancer

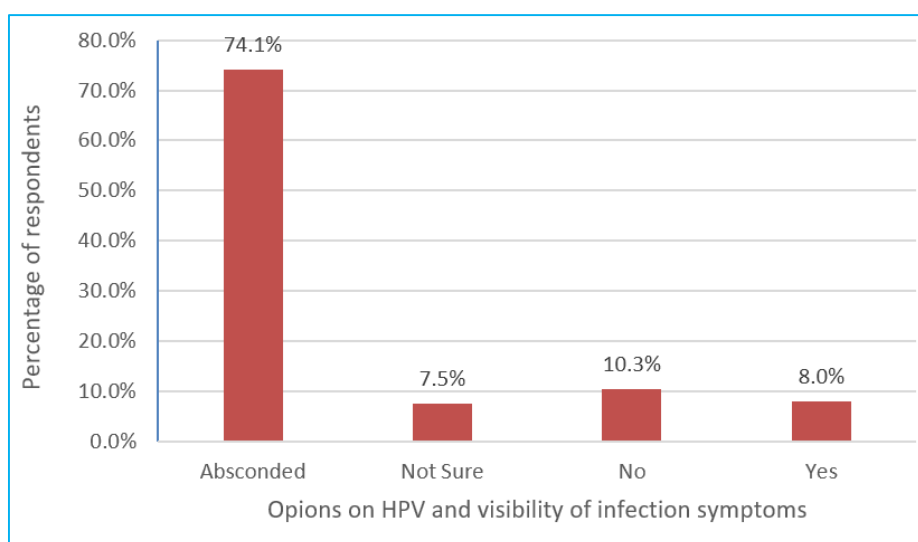
**Who gets infected with HPV:** On this question, respondents selected options from the given list. The distribution of the respondents based on this question is shown in Table 4.11.

**Table 4.11:** Distribution of respondents according to who gets infected by HPV

Responses	Frequency (n=1546)	%
Absconded	1146	74.1
Do not know	168	10.9
Women only	196	12.7
Both men and women	32	2.1
Man only	4	0.3
<b>Total</b>	<b>1546</b>	<b>100.0</b>

The results show that 1146 (74.1%) respondents absconded this item, 168 (10.9%) indicated that they did not know who got infected by HPV, 196 (12.7%) thought that only women were likely to be infected by HPV, 32 (2.1%) indicated that both men and women were likely to be infected by HPV, and 4 (0.3%) indicated that only men could be affected by HPV. Disregarding those respondents who absconded, the results indicate that women were more likely to be infected by HPV.

**Symptoms of HPV infection:** Results for this question are shown in Figure 4.10.



(N=1546)

**Figure 4.10:** Distribution of respondents on visibility of symptoms of HPV infection

As in the previous items in this section, 74.1% of the respondents absconded. For those who answered this question, 7.5% indicated that they were not sure whether symptoms of HPV infection were visible, 10.3% indicated that the symptoms were visible and 8% indicated that the symptoms were invisible. The results do not show a clear-cut assertion on the respondents' responses on the variable.

**How worried they were in contracting HPV:** Table 4.12 shows the distribution of respondents according to the choices given for this question.

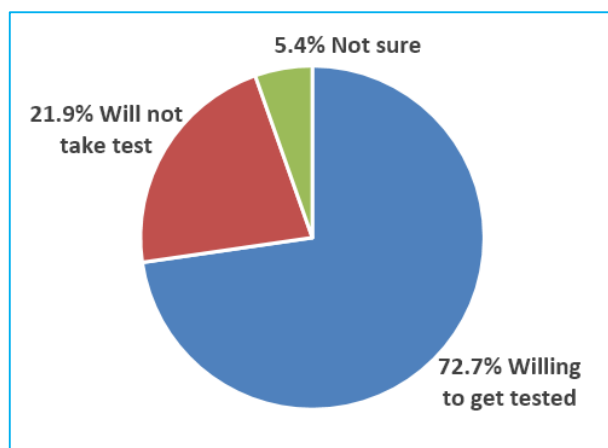
**Table 4.12:** Distribution of respondents on worriedness about contracting HPV

Responses	Frequency (n=1546)	%
Absconded	1146	74.1
Not Worried	206	13.3
Little Worried	54	3.5
Very Worried	140	9.1
<b>Total</b>	<b>1546</b>	<b>100</b>

The distribution shows that 1146 (74.1%) respondents did not answer this question. For those who answered, 206 (13.3%) indicated that they were not worried about contracting HPV, 54 (3.5%) were a little worried and 140 (9.1%) were very worried about contracting HPV. These results show only a small number of respondents who were very worried and aware of the effects of contracting HPV. This an indication that the majority of the respondents did not have much knowledge on HPV.

**Preparedness to take cervical cancer screening upon being given a pamphlet:**

Information of the respondents' answers to this question is shown in Figure 4.11. This question was answered by all respondents.



(N=1546)

**Figure 4.11:** Distribution of respondents on willingness to get cervical screen when given HPV information pamphlets

The majority of the respondents, 72.7% indicated that they were willing to get tested for cervical cancer when given pamphlets with information on HPV, 21.9% indicated that they will not take the test upon being given pamphlets, and 5.4% indicated that they were not sure about taking the test when given the information. Generally, the results show the willingness of women to be tested for cervical cancer if information on HPV was made available to them.

#### 4.2.4 Section D: Knowledge about HPV Vaccine

This section dealt with the respondents' knowledge on HPV vaccine. Six questions were used to gather data. Results on whether respondents heard about an HPV vaccine or not are shown in Table 4.13.

**Table 4.13:** Distribution of respondents according to information about HPV

Responses	Frequency (n=1546)	%
Absconded	1146	74.1
No	264	17.1
Yes	136	8.8
<b>Total</b>	<b>1546</b>	<b>100</b>

The results show that 1146 (74.1%) respondents did not answer this questions. Of those who answered this question, 264 (17.1%) indicated that they did not know about the HPV vaccine and only 136 (8.8%) indicated that they had heard about the HPV vaccine. These results show that only a small percentage of respondents, 8.8%, had heard about HPV vaccine while the majority did not

The results for age group which respondents thought the HPV vaccine was recommended are shown in Table 4.14.

**Table 4.14:** Distribution of respondents on the recommended age group for HPV vaccine

	Frequency	%
Absconded	1410	91.2
Do not know	30	1.9
<b>Age range (years)</b>		
9 to 26	50	3.2
26 to 40	28	1.8
41 to 50	28	1.8
<b>Total</b>	<b>773</b>	<b>100</b>

These results show that the majority of the respondents, 1410 (91.2%), did not answer this question. For those who answered it, 30 (1.9%) indicated that they did not know the age range, 50 (3.2%) indicated age range 9 to 26, 28 (1.8%) indicated age range 26 to 40, and another 28 (1.8%) indicated age range 41 to 50. The results confirmed lack of knowledge among respondents about HPV vaccine.

**Eligibility for HPV vaccine:** On this question, respondents selected their answers from a list of options that were provided. Table 4.15 shows that the majority of the respondents 1410 (91.2%) absconded, 48 (3.1%) did not know who was eligible for HPV vaccine, 44 (2.8%) indicated that females were eligible for HPV vaccine, 18

(1.2%) indicated males and then 26 (1.7%) indicated both female and male eligible. The results show that the majority of the respondents did not know who was eligible for HPV vaccine.

**Table 4.15:** Distribution of respondents according to eligibility for HPV vaccine

Responses	Frequency (N=1546)	%
Absconded	1410	91.2
Do not know	48	3.1
Females	44	2.8
Males	18	1.2
Both	26	1.7
<b>Total</b>	<b>773</b>	<b>50.0</b>

**Whether the current available vaccines could protect against genital warts and cervical cancer:** The results in Table 4.16 show that less than 9% of the respondents answered this question. Of those who answered this question, 64 (4.1%) indicated that they did not know, 36 (2.3%) indicated that the vaccines were not able to protect, and 36 (2.3%) confirmed that it was able to provide needed protection. These results also indicate that respondents were not sure or did not know whether current vaccines could protect against genital warts and cervical cancer.

**Table 4.16:** Distribution of respondents on whether current vaccines could protect against genital warts and cervical cancer

Responses	Frequency (n=1546)	%
Absconded	1410	91.2
Not Sure	64	4.1
No	36	2.3
Yes	36	2.3
<b>Total</b>	<b>1546</b>	<b>100</b>

**Willingness of respondents to allow their daughter to receive HPV vaccine when given pamphlet on HPV vaccine information:** The results on this question are shown in Table 4.17.

**Table 4.17:** Distribution of respondents on willingness to allow their daughters to receive HPV vaccine when given pamphlet

Responses	Frequency	%
Absconded	1410	91.2
Not sure	14	0.9
No	2	0.1
Yes	120	7.8
<b>Total</b>	<b>1546</b>	<b>100</b>

These results show that only 120 (7.8%) indicated that they could allow their daughters to receive a HPV vaccine if given pamphlet. The majority of the respondents 1410 (91.2%) absconded this question while only 2 (0.1%) said they could not allow their daughters to receive the vaccine.

#### 4.2.5 Chi-Square Test

Pearson chi-square tests were conducted to examine whether there were relationships between pairs of selected variables (questions). The results revealed that there were significant relationships between the variables which were tested at  $p < 0.05$ . Table 4.18 is an extract of those pairs of variables in which relationships existed.

**Knowledge of cervical cancer and age range:** The results show a significant relationship between level of knowledge of cervical cancer and age range of respondents;  $X^2 (2, N=1546)=10.641, p < 0.005$ . Knowledge of cervical cancer was

associated with age range. The results show that 46.6% of respondents aged between 30 and 35 were more likely to have knowledge of cervical cancer compared to 31.7%, 36 to 40 years and 21.7% of women aged 41 and above.

**Knowledge of cervical cancer and area of residence:** The results show a significant association between knowledge of cervical cancer and area of residence;  $X^2 (4, N=1546)=19.339, p<0.005$ . Knowledge of cervical cancer was strongly associated with place of residence of the respondents. Of the respondents who had knowledge about cervical cancer, 47% were from Muledane, 30% from Phiphidi, 15% from Malamulele and 8% from Mhinga.

**Knowledge of cervical cancer and respondents' level of education:** The results show a significant association between knowledge of cervical cancer and respondents' level of education;  $X^2 (3, N=1546)=31.137, p<0.000$ . Knowledge of cervical cancer was strongly associated with the respondents' level of education attained as 64.6% of respondents with educational level attained Grade 12 and above were more likely to have knowledge of cervical compared to 72.9% of those with educational level attained Grades 1 to 7 were likely to have no knowledge of cervical cancer.

Chi-square tests were also done for risk factors and highest educational level attained. The results are shown in Table 4.18.

**Highest educational level attained and multiple sex partners:** The results show a significant association between highest educational level attained and multiple sex partners;  $X^2 (6, N=1546)=51.463, p<0.000$ . As the educational level attained increases, respondents tended to be aware of having multiple sex partners as a cervical cancer risk factor.



**Knowledge of HPV and age range:** There was a significant association between knowledge of HPV and age range of respondents:  $X^2 (2, N=1546)=7.075, p<0.021$ . Comparatively, 67% of the women aged 40 and below were likely to be knowledgeable about HPV to 78% of the women aged 41 and above who confirmed lack of knowledge on HPV.

**Worriedness of getting HPV and age range:** A significant association existed between worriedness of getting infected with HPV and age range:  $X^2 (4, N=1546)=15.15, p<0.004$ ; 84.6% of the respondents below 41 years were likely to be more worried on getting HPV than 16% of women above the age of 40.

**Knowledge of HPV and highest level of education attained:** the  $X^2 (3, N=1546)=17.297, p<0.001$  statistics indicate a strong association between the two variables. From the cross-tabulation results, 60% of the respondents who with level of education Grades 1 to 7 were more likely to be not worried about contracting HPV than 65% of the respondents who attained Grade 12 and above. These results show that the Worriedness of contracting HPV was more likely to increase with the level of education one possessed.

**Worriedness of getting HPV and highest level of education attained:** The results show a significant association between the two variables with  $X^2 (9, N=1546)=23.229, p<0.006$ . Cross-tabulation results show that 87.4% of respondents who attained Grades 1 to 7 as the highest level of educational standard passed were less likely to be worried about getting HPV compared to 56% of the those who attained Grade 12 and above as their highest level of education. This was an indication that as educational level of respondents increases their worriedness of getting HPV increases.

**Table 4.18:** Chi-square tests for selected variables

Pair of variables tested	Pearson Chi-Square Value	Df	Asymp. Sig. (2-sided) (p)	a. 0 cells (0.0%) have expected count less than 5
Age range * Cervical cancer knowledge cross-tabulation	10.641	2	0.005	The minimum expected count is 83.89.
Area of residence * Knowledge of cervical cancer	19.339	4	0.001	The minimum expected count is 37.45.
Highest level of education attained * Knowledge of cervical cancer	31.137	3	0.000	The minimum expected count is 34.95.
Highest educational level attained* Multiple sex partners	51.463	6	0.000	The minimum expected count is 17.12.
Highest educational level attained* Having genital warts	40.802	6	0.000	The minimum expected count is 17.21.
Highest educational level attained* Sexual intercourse before 18	41.941	9	0.000	The minimum expected count is .18.
Highest educational level attained* Having STIs	37.85	6	0.000	The minimum expected count is 15.67.
Highest educational level attained* Smoking cigarettes	61.217	6	0.000	The minimum expected count is 11.14.
Highest educational level attained* Use of oral contraceptives	45.274	6	0.000	The minimum expected count is 10.60.
Knowledge of Human Papilloma Virus * Age range	7.703	2	0.021	The minimum expected count is 43.47.
Worriedness of getting HPV * Age range	15.150	4	0.004	The minimum expected count is 14.78.
Knowledge of HPV * Highest level of education attained	17.297	3	0.001	The minimum expected count is 18.11.
Worriedness of getting HPV * Highest level of education attained	23.229	9	0.006	The minimum expected count is 2.45.
Knowledge of HPV Vaccine * Age range	15.150	4	0.004	The minimum expected count is 14.78.
Parity number of children * knowledge of cervical cancer	22.957	7	0.002	The minimum expected count is 1.00

**Knowledge of human papillomavirus vaccine and age range:** There was a significant association between knowledge of HPV vaccine and age range of respondents:  $X^2 (2, N=1546)=7.075, p<0.021$ . Comparatively, 72% of the women aged 40 and below were likely to be knowledgeable about HPV vaccine to 78% of the women aged 41 and above who confirmed lack of knowledge on HPV.

**Parity number of children and knowledge of cervical cancer** had  $X^2 (7, N=1546)=22.957, p<0.002$  statistic, showing that a significant association between knowledge of knowledge of cervical cancer and parity number of children existed. Based on these results and those of cross-tabulations, 66% of women whose parity number of children was above four were likely to have no knowledge of cervical cancer compared to 45% of the women who had less than 4 children.

#### 4.2.6 Correlations

Correlations were performed for a number of questions to whether relationships existed. Where relationships existed, the size of the relation and its direction was also determined. Pearson correlation coefficient rho (r) was determined at p values of 0.05 and 0.001. The results of the questions in which correlations of significance are shown on the subsequent tables.

**Table 4.19:** Correlation of age range of respondents and their knowledge of cervical cancer

Variable	Question 1.1B: Knowledge about cervical cancer
Question 1: Age range	-0.671**
**Correlation is significant at the 0.01 level (2-tailed)	
*Correlation is significant at the 0.05 level (2 tailed)	

The results show that knowledge about cervical cancer fairly and negatively related to the

age range of respondents (Table 4.19). As the age range increased the knowledge about cervical cancer decreased,  $r=-0.671$  at  $p<0.01$ . This implies that age range was an influential factor on the respondents' knowledge about cervical cancer. Young women were likely to have more knowledge on cervical cancer than elderly women.

Further correlations were found to exist between the educational level of the respondents and their knowledge of cervical cancer and the six risk factors. Tables 4.20 and 4.21 show the correlation results. All the  $r$  values for the correlations were found to be positive at  $p<0.01$ . The relationships were found to be relatively weak. The knowledge of cervical cancer was weakly and positively related to the level of education that a respondent attained,  $r=0.146$  at  $p<0.01$ . This implies that as the standard of educational achievement increased, the knowledge of cervical cancer also increased. This also applied to risk factors,  $r$  between 0.156 and 0.197 at  $p<0.01$ . As the level of education increased the chance of an individual to have knowledge about risk factors also increased.

**Table 4.20:** Correlation results

Variable (N=1546)	Question 5: Highest standard passed
Question1: Knowledge about cervical cancer	0.146**
Question 4.1: Risk factor 1: Multiple sex partners	0.191**
Question 4.2: Risk factor 2: Having genital warts	0.170**
Question 4.3: Risk factor 3: Sexual intercourse before 18	0.180**
Question 4.4: Risk factor 4: Having contracted STIs	0.156**
Question 4.5: Risk factor 5: Smoking cigarettes	0.197**
Question 4.6: Risk factor 6: Use oral contraceptives	0.188**
**Correlation is significant at the 0.01 level (2-tailed)	
*Correlation is significant at the 0.05 level (2 tailed)	

**Table 4.21** Relationship between knowledge about cervical cancer and risk factors

Question 4: Risk factors	Question 1: Knowledge about cervical cancer
Risk factor 1: Multiple sex partners	0.906**
Risk factor 2: Having genital warts	0.903**
Risk factor 3: Sexual intercourse before 18	0.905**
Risk factor 4: Having contracted STIs	0.899**
Risk factor 5: Smoking cigarettes	0.894**
Risk factor 6: Use oral contraceptives	0.895**
**Correlation is significant at the 0.01 level (2-tailed)	
*Correlation is significant at the 0.05 level (2 tailed)	

All the above correlation coefficients  $r$  show very strong associations between knowledge about cervical cancer and risk factors. The results show that as the knowledge about cervical cancer increases, also the knowledge about risk factors increases,  $p < 0.01$ .

Table 4.22 show the association between age range and knowledge of Pap smear and Worriedness of developing cervical cancer with age range and also highest standard passed. The correlations were all highly significant as demonstrated by the values indicated in the table.

**Table 4.22:** Correlations for selected variables

	Question 1: Age Range	Question 5: Highest standard passed
Question 10: Have you ever heard about Pap Smear?	-0.263**	0.184**
Question 20: How worried are you in contracting cancer?	-0.184**	0.131**
**Correlation is significant at the 0.01 level (2-tailed)		
*Correlation is significant at the 0.05 level (2 tailed)		

## 4.3 Summary of Findings

### 4.3.1 Section B: Knowledge Regarding Cervical Cancer Prevention

These results show that:

- The majority, 62%, of women of the age of 30 and above were not aware of cervical cancer ,but only 38% were.
- Nurses, family members and friends were the major sources of information on cervical cancer. Media is not playing enough role to spread the information on cervical cancer.
- The content information on cervical cancer received was on Pap smear.
- The majority of the respondents did not have sufficient knowledge on risk factors for cervical cancer.
- Only 48% of the respondents knew that cervical cancer was diagnosed using Pap smear or biopsy and the 52% did not know the diagnosis.
- Only 43%, (250 out of 588) of the respondents indicated that cervical cancer was preventable while the majority either did not know or thought it was not preventable. This means that only 16.2% (250/1546) of the whole sample were aware that cervical cancer was preventable.
- Only 36% (159/250) indicated those methods that could possibly be used to prevent cervical cancer. In terms of the whole population, this accounts for 10.3%.

- Only 28%, (70/250) or 4.5 (70/1546) of the respondents have heard about cervical cancer screening and 72%, (180/250) did not.
- The content information was relevant to cervical cancer however, only 15.8% (244/1546) of the whole sample indicated that the content information was relevant to cervical cancer
- Very few respondents took Pap smear, 3.2% and 8.5% who knew that their clinics offered Pap smear test services.
- The most cited reasons that prevent women from taking Pap smear were fear, time factor and lack of information are the dominant ones.
- The majority 930 (60.1%) respondents indicated willingness to take a test when given enough information of cervical cancer screening. Lack of information on cervical cancer was a cause for not taking a screening.

#### **4.3.2 Section C: Knowledge About HPV**

- The majority of the respondents did not have any information about HPV.
- The main source of information on HPV were nursing staff while the least were television.
- The results on modes of transmission of HPV confirm that the majority of those who had information on HPV did not know how the virus was transmitted.
- The majority of the respondents who had information about HPV did not know that it caused cervical cancer.

- Women were the most likely to be infected by HPV.
- No clear-cut information on how the respondents answered the question.
- Only a small percentage (9%) of the respondents was very worried of contracting PHV, indicating that the majority did not have knowledge on HPV.
- Generally, the results show the willingness of women to be tested for cervical cancer if information on HPV was made available to them.

#### **4.3.3 Section D: Knowledge About HPV Vaccine**

- Only a small percentage of respondents, 8.8%, had heard about HPV vaccine while the majority did not.
- The majority of the respondents did not have knowledge on HPV vaccine as shown by just below 8% of the respondents tried to guess the age group recommended for HPV vaccine.
- The majority of the respondents did not know who was eligible for HPV vaccine.
- The majority of the respondents were not sure or did not know whether the current vaccines were able to protect against genital warts and cervical cancer.
- Only a minority of the respondents indicated that they could allow their daughters to receive HPV vaccine if they were given pamphlets.

The results of Pap smear knowledge and worriedness show a weak and negative association with age range. Knowledge on Pap smear tended to decrease with age range  $r=-0.263$ ,  $p<0.01$ . This means that most of the elderly people have never heard about Pap



smear compared to young women. The knowledge about Pap smear also associates positively with highest standard of education attained,  $r=0.184$  and  $p<0.01$ . Results also show that worriedness associates negatively with age range and highest standard achieved,  $r=-0.184$ ,  $p<0.01$ . It implies that young women are married when contracting cervical cancer. The worriedness also associates with the highest standard passed,  $r=0.131$ ,  $p<0.01$ . The higher the level of education the more likely that women get worried about contacting cancer.

#### 4.3.4 Chi-Square Tests

- **Knowledge Cervical cancer and age range of respondents:** The results show a significant relationship between level of cervical cancer and age range of respondents;  $X^2 (2, N=1546)=10.641$ ,  $p<0.005$ . Knowledge of cervical cancer was associated with age range. It was found that 46.6% of respondents aged between 30 and 35 were more likely to have knowledge of cervical cancer compared 31.7%, 36 to 40 years and 21.7% of women aged 41 and above.
- **Knowledge of cervical cancer and area of residence:** The results show a significant association between knowledge of cervical cancer and area of residence;  $X^2 (4, N=1546)=19.339$ ,  $p<0.005$ . Knowledge of cervical cancer was strongly associated with place of residence of the respondents because 47% of the respondents who indicated that they had knowledge about cervical were from Muledane a location in Thohoyandou, 30% from Phiphidi (15 km from Thohoyandou), 15% from Malamulele (30 km from Thohoyandou) and 8% from Mhinga (45 km away).
- **Knowledge of cervical cancer and respondents' level of education:** The results show a significant association between knowledge of cervical cancer and

respondents' level of education;  $X^2 (3, N=1546)=31.137, p<0.000$ . About 64.4% of respondents whose highest educational level was Grade 12 and above were more likely to have knowledge of cervical than 72.9% of those with educational level attained Grades 1 to 7. Therefore, knowledge of cervical cancer was strongly associated with the respondents' level of education attained.

- **Highest educational level attained and multiple sex partners:** The results show a significant association between highest educational level attained and multiple sex partners;  $X^2 (6, N=1546)=51.463, p<0.000$ . As the educational level attained increases, respondents tended to be aware of having multiple sex partners as a cervical cancer risk factor.
- **Highest educational level attained and having genital warts:** The results show a significant association between Highest educational level attained and having genital warts:  $X^2 (6, N=1546)=40.802, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be more aware of the fact that having genital warts was a cervical cancer risk factor.
- **Highest educational level attained and sexual intercourse before age 18:** The results show a significant association between highest educational level attained and having sexual intercourse before 18:  $X^2 (9, N=1546)=41.941, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that having sexual intercourse before age 18 was a cervical cancer risk factor.
- **Highest educational level attained and having STIs:** The results show a significant association between Highest educational level attained and having

STIs:  $X^2(6, N=1546)=37.85, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that having STIs was a cervical cancer risk factor.

- **Highest educational level attained and smoking cigarettes:** The results show a significant association between highest educational level attained and smoking cigarettes:  $X^2(6, N=1546)=61.85, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that smoking cigarettes was a cervical cancer risk factor.
- **Highest educational level attained and use of oral contraceptives:** The results show a significant association between highest educational level attained and the use of oral contraceptives:  $X^2(6, N=1546)=45.274, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that use of oral contraceptives was a cervical cancer risk factor.
- **Knowledge of HPV and age range:** A significant association between knowledge of HPV and age range of respondents was significant, with  $X^2(2, N=1546)=7.075, p<0.021$ . Age range was found to be an influential factor in being knowledgeable in HPV. 67% of the women aged 40 and below were likely to be knowledgeable about HPV as opposed to 78% of the women aged 41 and above who confirmed lack of knowledge on HPV.
- **Worriedness of getting HPV and age range:** A significant association existed between Worriedness of getting infected by HPV and age range:  $X^2(4, N=1546)=15.15, p<0.004$ ; 84.6% of the respondents below 41 years were likely to be more worried on getting HPV than 16% of women above the age of 40.

- **Knowledge of HPV and highest level of education attained:** the  $X^2$  (3, N=1546)=17.297,  $p<0.001$  statistics indicate a strong association between the two variables. From the cross-tabulation results, 60% of the respondents whose level of education was Grades 1 to 7 were more likely to be not worried about contracting HPV than 65% of the respondents who attained Grade 12 and above. These results show that the Worriedness of contracting HPV was more likely to increase with the level of education one possessed.
- **Worriedness of getting HPV and highest level of education attained:** The results show a significant association between the two variables with  $X^2$  (9, N=1546)=23.229,  $p<0.006$ . Cross-tabulation results show that 87.4% of respondents who attained Grades 1 to 7 as the highest level of educational standard passed were less likely to be worried about getting HPV compared to 56% of the those who attained Grade 12 and above as their highest level of education. This was an indication that as educational level of respondents increases their Worriedness of getting HPV increases
- **Parity number of children and knowledge of cervical cancer:** there was a significant association between parity number of children and knowledge of cervical cancer  $X^2$  (7, N=1546)=22.957,  $p<0.002$ , 66% of women whose parity number of children was above four were likely to have no knowledge of cervical cancer compared to 45% of the women who had less than 4 children

#### 4.3.5 Correlations

- Age range was an influential factor on the respondents' knowledge about cervical cancer. Young women were likely to have more knowledge on cervical cancer

than elderly women ( $r=-0.64$ ,  $p<0.01$ ).

- The knowledge of cervical cancer was weakly and positively related to the level of education that a respondent attained,  $r=0.146$  at  $p<0.01$ . This implies that as the standard of educational achievement increased, the knowledge of cervical cancer also increased. This also applied to risk factors,  $r$  between 0.156 and 0.197 at  $p<0.01$ . As the level of education increased the chance of an individual to have knowledge about risk factors also increased.
- As age range increases, knowledge about Pap smear decreases also. This also applies to worriedness of contracting cervical cancer which decreases with increase in age range. The higher standard of education is achieved, the more an individual is most likely to know about Pap smear. Finally, as the one's educational level increases the more one is likely to be worried about contracting cervical cancer.

#### **4.4 Conclusion**

This chapter presented, analysed and interpreted results based on the objectives of the study. A number of findings were made for each objective as stated above. These results are discussed in Chapter 5.

# CHAPTER 5

## DISCUSSION OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Introduction

In Chapter 4, the researcher presented, analysed, and interpreted the findings of this study. This study was conducted in four clinics in the Thulamela villages in which one thousand five hundred and forty-six (1546) women participated by answering a simple questionnaire on a number of items pertaining to cervical cancer. Three objectives with regard to the knowledge of cervical cancer were to be achieved in this study.

The purpose of this chapter is to discuss the findings made in the previous chapter, generate conclusions of the study and make recommendations for the improvement of the dissemination of cervical cancer information to the majority of the women in villages in the Thulamela Municipalities. Discussions are done under research objectives which were constructed in Chapter 1 and then explored in Chapter 2.

The three objectives were to assess respondents' knowledge about:

- Cervical cancer prevention
- HPV
- HPV vaccine

This chapter is structured as follows: discussions of findings, conclusions and recommendations. As already highlighted, discussions were done following each of the three research objectives. The conclusions and recommendations were derived from the discussions of the findings.

## **5.2 Discussion of the Findings**

### **5.2.1 Objective 1: Assessing the Knowledge Regarding Cervical Cancer Prevention**

Cervical cancer is one of the leading causes of morbidity and mortality amongst the gynaecological cancers worldwide, especially in developing countries (Ali, Ayub, Manzoor, Azim, Afif, Akhtar, Jafery, Tahir, Farid-ul-Hasnian & Uddin, 2010). This study was carried out to assess the knowledge and awareness about cervical cancer and its prevention amongst women of ages 30 and above. Demographic results indicate that the majority of women who took part in this study were aged 41 and above, 75% of the women had low educational level (up to Grade 11) and most of them were from villages away from the town. The majority of the women, 83%, were unemployed and relied on government grants financially, making it an ideal sample for this study since, in today's world, cervical cancer is primarily a disease found in low-income countries (Ali et al., 2010). Results also show that nurses from local clinics were the main source of information on health issues.

These results show that the majority of women (62%) of the age of 30 and above were not aware of cervical cancer, but only 38% were. This was consistent with the results of the study conducted in Nigeria by Wright, Aiyedehin, Akinyinka & Ilozumba (2014) which showed that just over a third of respondents (37.2%) had heard about cervical cancer and the majority (62.8) had not. These results were comparable and very low to those from

developed countries such as England where 76.2% of the women who participated in such studies were aware of the fact that cervical cancer was a common disease and were also aware of the risk factors for the diseases.

In this study, it was found that nurses, family members and friends were the major sources of information on cervical cancer as indicated by the majority 488 (83%) of the 588 respondents who had heard about cervical cancer. This also established that media did not play a major role in spreading the information on cervical cancer—contrary to the findings of Wright et al. (2014). Only a minority of the respondents 244 (15.8%) had received information about Pap smear while the majority indicated otherwise. This finding confirmed that nurses communicated relevant information about cervical cancer which contrasts with the study conducted by the University of Witwatersrand which indicated that more than half 60% of those who had heard of cervical cancer obtained the information through the media and only 16% had heard about health professionals (Kalua, 2012:40).

Similar trends were also observed in a study conducted in Hindu revealed that radio broadcasting increased the proportion of women who were familiar with the term cervical cancer who could identify the means of preventing it and who understood the purpose of the Pap smear. In addition, older and under-screened women were successfully recruited for screening via radio (Perkins et al., 2007:191). Therefore, use of media to disseminate health messages should be encouraged (Kalua, 2012:40).

The results for cervical cancer risk factors revealed that only the minority of the respondents, less than 233 (15%) had to have some knowledge about risk factors on cervical cancer while the majority 1313 (85%) did not have the knowledge about cervical



cancer risk factor. Similar findings have been reported in the study conducted in Karala, India, namely that one in every five women suffering from cervical cancer belongs to India. The study further indicated that the majority of respondents did not know (89.2) any risk factors for cervical cancer, and out of 809 women studied 6.9 had undergone screening, 93.1 had not done screening test due to various factors such as no symptoms, not being aware of the Pap test, no time, no money, lack of interest fear of the procedure, do not know where to go, no one ever thought of it (Aswaty, Quereshi, Kuman & Laelanoni, 2012). One should, therefore, consider improving awareness of the programme to further their knowledge by educating them about risk factors and practising preventive measures

Another study in China indicated that a large number of participants were totally unaware of HPV (90%) did not know the link between HPV and cervical cancer (Kadeer, Azam, Mutallipu, Quan, Guilin & Mijiti, 2015). Study conducted in Tshwane community reported that long-term use of oral contraceptives, smoking, and multiparity can double and even triple the risk of women infected with oncogenic type HPV to develop cervical cancer. Cultural norms such as early marriage and polygamous marriage also increase the risk of cervical cancer. Socio-economic factors also influence the incidence of cervical cancer and poverty endemic in South Africa add to the risk. Furthermore women living in resource poor communities tend to be unaware of cervical cancer and cervical cancer screening services (Maree, Lu & Wright, 2012:5). The women in this study lacked knowledge about cervical cancer

On the diagnosis of cervical cancer, this study established that only 6.1% (97) of the respondents indicated that cervical cancer could be diagnosed using Pap smear, 12.2% (188) indicated biopsy and 19.4% (302) indicated taking blood. These results show only 18.2% (282) of the respondents indicated that Pap smear was a diagnosis of cervical

cancer while the majority 81.8% (1264) of the respondents did not have this vital information on cervical cancer diagnosis. This study is in agreement with the study conducted in Botswana in that the majority of women in less developed countries believed that screening for cervical cancer was not necessary. A study reported that the majority of women perceived cervical cancer screening as an unnecessary diagnostic procedure rather than a preventive health measure.

Most people in underdeveloped countries do not view preventive health action such as cancer prevention as a priority; rather, they believe in curative health action instead of preventive health practices (Ibekwe, Hogue & Ntuli-Ngcobo, 2010:16-17). Similar studies conducted in Mexico indicated that women believed that having a Pap smear performed included that the Pap smear was an evaluation of the women's ability to bear children rather than to detect cancer (McMullin, De Alba, Charez & Hubbell 2005:4). The study also found that only 16.2% (250) of respondents knew that cervical cancer was preventable while the majority 83.2% (1338) did not know of the existence of cervical cancer or whether it could be prevented.

This study corroborated the study conducted in Uganda which reported that the largest barriers reported by women being unaware that preventative screening test exist (Urasa & Darj, 2011:5). Similar findings were reported in a study conducted by Mangosuthu University of Technology, namely, that low level of knowledge on cervical cancer and its risk factors and detection method indicated that 15.6% did not know about any risk factors for cervical cancer while 96% new of risk factors did not know that cervical cancer is preventable and 86 respondents did not have the test done mainly because of personal factors such as fear of the procedure of Pap test. Therefore, improved awareness of cervical cancer risk factors and practising of preventive measures are warranted.

Additionally, 10.3% (159) of respondents indicated correctly those methods that could possibly be used to prevent cervical cancer. The majority, 89.7% (1387) of the respondents were ignorant of the methods used to prevent cervical cancer. Of those respondents who had an idea on the methods for preventing cervical cancer, only 4.5 (70) had heard about cervical cancer screening compared to 1476 who had not. On content information about cervical cancer, 15.8% (244) expressed its relevance and the rest could not confirm. A similar trend was observed in a study conducted in Nigeria which revealed that 31.4% of women had never had a cervical cancer screening done in the past. Some of the women did not perceive cervical cancer as a serious disease and 7.3% of them did not even see themselves at risk of contracting the disease despite their being sexually active (Adetola, 2011:2).

In Uganda, Mutyaba et al. (2000) reported that reasons for women not being screened were: not feeling at risk, lack of symptoms, carelessness, fear of vaginal examination, lack of interest, test being unpleasant and not yet not being at risky age. The study further indicated that those who had never had a Pap smear did not feel at risk of developing cervical cancer. Similar findings were reported in several studies (Urasa & Darj, 2011:5) In Tanzania, a study indicated that most of women had never had a Pap smear, the most common reason was not knowing where to go followed by seeing no reason for the test, the other reason being afraid of the test and being afraid of the bad results (Urasa & Davj, 2011). The study further indicated that for the test, women's knowledge was also implicated in screening uptake. Women with low levels of knowledge about cervical cancer and its prevention were unlikely to access screening services.

This study also sought to determine whether some member of the sample took a Pap smear. It was found that a very small percentage 3.2% took the screening test. Of the

respondents took the Pap smear, 8.5% confirmed that their clinics offered Pap smear test services. Only 15.7% (122) of the respondents indicated that they were afraid to take a Pap smear or did not have enough time to take one. Despite lack of knowledge on the cervical cancer and its preventability, the majority of the respondents indicated their willingness to take a screening test once provided with sufficient information about cervical cancer.

These findings are in agreement with the study that was conducted in the USA, the majority of women immigrants had limited knowledge about cervical cancer and no knowledge about HPV. They believed that infections were caused by physical trauma, certain sexual activities, and poor hygiene caused cervical cancer; believed that they only needed a Pap smear if they developed symptoms of a pelvic infection and felt that women who engaged in unwise sexual behaviour in particular should receive regular Pap smear examination (McMullin, De Alba, Chavez & Hubbell, 2005).

Chi-squared tests also confirmed associations between the knowledge of cervical cancer and age range. The results show a significant relationship between level of cervical cancer and age range of respondents;  $X^2 (2, N=1546)=10.641, p<0.005$ . Knowledge of cervical cancer was associated with age range. It was found that 46.6% of respondents aged between 30 and 35 were more likely to have knowledge of cervical cancer compared 31.7%, 36 to 40 years and 21.7% of women aged 41 and above. There were also significant negative correlation age of respondents and knowledge of cervical cancer. It was found that age range of respondents was an influential factor on the respondents' knowledge about cervical cancer. Young women were likely to have more knowledge on cervical cancer than elderly women ( $r=-0.64, n=1546, p<0.001$ ).

This is in agreement with a study conducted in USA which indicated that despite the overall downward trend in cervical cancer, there still exists a disparity in mortality rates for cancer-related deaths among certain ages as well as geographic and socio-economic groups. It has been found that lower education, lack of health coverage and rural location are associated with inadequate preventative cervical cancer screening (Uysal & Birsal, 2009:346). In a similar study conducted in Turkey, it was stated that as the level of education and age increased and in the present of social security, the frequency of having Pap smear testing also increased (Uysal & Birsal, 2009:346).

The study conducted in California amongst Thai Americans suggested that most women had seldom or never talked about cancer before and after learning more about the disease were uncomfortable or fearful (Love & Tanjasiri, 2012:3). It was further indicated that women with high screening rates had a high level of education. However, women with high education may not necessarily seek screening, thus additional factors must be considered. Community-based education programmes about cervical cancer improved knowledge and screening behaviour in Honduran women (Perkins et al., 2007:187).

The results also indicated a significant association between knowledge of cervical cancer and respondents' level of education;  $X^2(3, N=1546)=31.137, p<0.000$ . Knowledge of cervical cancer was strongly associated with the respondents' level of education attained. It was found that 64.4% of respondents whose educational level was Grade 12 and above were more likely to have more knowledge of cervical than 72.9% of those with educational levels Grades 1 to 7. This was also confirmed by correlation tests which showed that the knowledge of cervical cancer was positively correlated to the level of education attained by respondents ( $r=0.146, N=1546, p<0.001$ ). This implied that as the standard of educational achievement increased, the knowledge of cervical cancer also increased.

Therefore, those who were young and those who have attained high levels of education were more likely to have knowledge on the cervical cancer and its preventability. Since the major source of information was mainly nurses and other medical staff, it could have been the younger and high educationally attained women who visited clinics and interacted frequently with nurses.

Chi-squared tests also indicated a significant association between knowledge of cervical cancer and area of residence;  $X^2 (4, N=1546)=19.339, p<0.005$ . Knowledge of cervical cancer was strongly associated with place of residence of the respondents because 47% of the respondents who indicated that they had knowledge about cervical were from Muledane a location in Thohoyandou, 30% from Phiphidi (15 km from Thohoyandou), 15% from Malamulele (30 km from Thohoyandou) and 8% from Mhinga (45 km away). Respondents from villages closer to the urban centre were more likely to be knowledgeable about cervical cancer compared to those from villages farthest from the urban centre.

**Knowledge of cervical cancer and respondents' level of education:** The results show a significant association between knowledge of cervical cancer and respondents' level of education;  $X^2 (3, N=1546)=31.137, p<0.000$  Knowledge of cervical cancer was strongly associated with the respondents' level of education attained. It was found that 64.4% of respondents who educational level was Grade 12 and above were more likely to have knowledge of cervical than 72.9% of those with educational level attained Grades 1 to 7. Knowledge of cervical cancer was strongly associated with the respondents' level of education attained. Chi-squared tests also confirmed associations between educational level attained by respondents and cervical risk factors.

**Highest educational level attained and Multiple sex partners:** The results show a significant association between highest educational level attained and multiple sex partners;  $X^2 (6, N=1546)=51.463, p<0.000$ . As the educational level attained increases, respondents tended to be aware of having multiple sex partners as a cervical cancer risk factor.

**Highest educational level attained and having genital warts:** The results show a significant association between Highest educational level attained and having genital warts:  $X^2 (6, N=1546)=40.802, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that having genital warts was a cervical cancer risk factor.

**Highest educational level attained and sexual intercourse before 18:** The results show a significant association between Highest educational level attained and having sexual intercourse before 18:  $X^2 (9, N=1546)=41.941, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that having sexual intercourse before 18 was a cervical cancer risk factor.

**Highest educational level attained and having STIs:** The results show a significant association between highest educational level attained and having STIs:  $X^2 (6, N=1546)=37.85, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that having STIs was a cervical cancer risk factor.

**Highest educational level attained and Smoking cigarettes:** The results show a significant association between highest educational level attained and smoking cigarettes:  $X^2 (6, N=1546)=61.85, p<0.000$ . It was highly likely that as the educational

level attained increased, respondents tended to be aware of the fact that smoking cigarettes was a cervical cancer risk factor.

**Highest educational level attained and use of oral contraceptives:** The results show a significant association between highest educational level attained and the use of oral contraceptives:  $X^2 (6, N=1546)=45.274, p<0.000$ . It was highly likely that as the educational level attained increased, respondents tended to be aware of the fact that use of oral contraceptives was a cervical cancer risk factor.

It could be tentatively be deduced that as the level of education increased, the knowledge about cervical cancer increased, the awareness of cervical cancer risk factors also increased. In this study, level of education was a key factor in the knowledge of the preventability of cancer among the respondents. The more educated the respondents the more likely they were knowledgeable about cervical cancer. However for this study, very few respondents were found to be knowledgeable about cervical cancer prevention as confirmed by correlation statistics. It has been shown that higher level of education is associated with better knowledge about cervical cancer as indicated by (Kalua, 2012:40).

**Parity number of children and knowledge of cervical cancer:** there was a significant association between parity number of children and knowledge of cervical cancer  $X^2 (7, N=1546)=22.957, p<0.002$ , 66% of women whose parity number of children was above four were likely to have no knowledge of cervical cancer compared to 45% of the women who had less than 4 children. The high number of parity-children among women who had no knowledge about cervical cancer was a matter of concern as this was likely to increase the risk on developing cancer of cervix. This stemmed from the belief that multiparity was one of the risk factors for cervical cancer, especially women who were positive of HPV



(Hinkula, Pukkala, Kyyrone, Laukkanen, Koskela, Paavonen, Lehtinen & Kauppila, 2004). The parity number of children was rather high in this study suggesting that a large number of women could have been exposed to HPV and risked developing cervical cancer.

### **5.2.2 Objective 2: Assessing the Knowledge About HPV**

Women need to understand the link between HPV and cervical cancer in order to make appropriate, evidence-based choices among existing prevention strategies (Pap test, HPV DNA test, and HPV vaccine) (Tiro, Meissner, Kobrin & Chollette, 2015). Therefore, the assessment of women's knowledge in HPV was one of the priorities of this research that intended to find ways of cervical cancer control. According to Tiro et al. (2015), the first step in addressing communication challenges in cervical cancer is to identify women least likely to have accurate HPV knowledge and to develop clear and appropriate messages for them.

In this study, the knowledge of HPV among women of the age above thirty was conducted. It was found that the majority of the women 74.1% (1146) have never heard about HPV, only 25.8% (400) of the women had heard about HPV. These results show that the majority of the respondents did not have any information about HPV and risked contracting the virus. This also confirmed that health information was poorly disseminated in these communities. The communities relied on nursing staff for information as indicated by the minority who happened to have had about HPV 15.9% (246).

The print media and electronic media played a minor role in the transmission of HPV information as shown by low percentages, radios 36 (2.3%), 30 (1.9%), newspapers 18 (0.8%) and television only 12 (0.8%) of the respondents indicated it as their source. For the minority respondents who had information on HPV the results show that the main

source of information were nursing staff while the list were television. South Africa has a high rate of media which can be used to disseminate information on HPV. With a lot of free channels to choose from, it could be inferred that women may be deliberately watching channels which do not disseminate health related information. Another factor could be the language barriers used in most of the popular channels other than the SABCs. Most of the women who participated in this study had low level of educational attainment and could barely understand English which is the common language used in many media across the country.

A study conducted in Mdantsane, Eastern Cape, indicated lack of knowledge in the Mdantsane community about the aetiology, symptoms and risk factor of cervical cancer (De Kubber, Peters & Soeters, 2011:72). Lack of knowledge about cervical cancer and the risk factors makes women to be ignorant and delay seeking medical help, however, if women in our rural communities are informed about the diseases and their risk factors, signs and symptoms, it will increase their likelihood of utilising the services and presenting themselves early for screening.

On how the HPV was transmitted, the majority of the women did not know how the virus was transmitted. Some of the respondents indicated that the virus was transmitted by kissing. Only small percentage had some ideas on how the virus was transmitted, 9.6% thought it was through sexual intercourse and 2.1% indicated not using condoms. According to the study that was conducted in Australia, many women do not understand the risk factor for HPV infection, the clinical problem it may cause potential long-term complications of infection. HPV vaccines have undergone phase 3 clinical trials in Australia. It is likely that HPV vaccine will become licensed for use in the near future (Giles & Garland, 2006:311).

This study established that the majority of the women, 97.8%, did not know that HPV caused cervical cancer, but only 2.2% did. Furthermore, women were not sure about who got infected by the HPV as there were mixed answers in that 85% of the respondents were completely ignorant who were likely to be infected with HPV, 12.6% indicating that women only were likely to be infected, 2.1%, indicating that both men and women were likely to be infected by HPV, and 0.3% indicated that only man could be affected by HPV. These results shows the precarious position regarding to HPV infection prevailing among women population in the Thulamela Municipality villages.

Although most believed cervical cancer was related to an infection caused by behaviour. None of respondents reported knowledge of HPV because the beliefs for cervical cancer risk were mostly related to socially undesirable behaviours. Women reported that they would not get Pap smear because they did not want other people to think they were bad (Perkins et al., 2007:8).

On contracting HPV, 12.6% of the respondents were either worried or little worried while the majority were not. This was an indication that the majority of the respondents did not have much knowledge on HPV. Worriedness was significantly associated with the age range of the respondents  $X^2 (4, N=1546)=15.15, p<0.004$ . Confirming this were cross-tabulation results showing that 84.6% of the respondents below 41 years were likely to be more worried on getting HPV than 16% of women above the age of 40.

As for the highest level of education attained,  $X^2 (3, N=1546)=17.297, p<0.001$ , statistics indicate a significant association between the two variables. Cross-tabulation results also showed that 60% of the respondents whose level of education was Grades 1 to 7 were more likely to be not worried about contracting HPV than 65% of the respondents who

attained Grade 12 and above. It could be tentatively concluded that age range, highest level of education attained were significantly associated with knowledge of HPV. This is consistent with the studies by some studies that found out that population characteristics such as age range, educational level and knowledge of cervical cancer were key factors in determining Worriedness and knowledge of HPV.

The majority of the respondents, 72.7%, indicated that they were willing to get tested for cervical cancer when given pamphlets with information on HPV, 21.9% indicated that they would not take the test upon being given pamphlets, and 5.4% indicated that they were not sure about taking the test when given the information.

### **5.2.3 Objective 3: Assessing Knowledge About HPV Vaccine**

Knowledge about the HPV vaccine was assessed and results obtained indicated that only 8.8% of respondents had heard about HPV vaccine while the majority 91.2% had not. It became evident from correlation of the results on the age range to vaccine. The majority of the respondents did not have knowledge on HPV vaccine as shown by just below 8% of the respondents who tried to guess the age group recommended for HPV vaccine. Besides this, the majority of the respondents were not sure or did not know whether the current vaccines were able to protect against genital warts and cervical cancer.

Chi-square test on knowledge of HPV vaccine and age range indicated a significant association between knowledge of HPV vaccine and age range of respondents:  $\chi^2(2, N=1546)=7.075, p<0.021$ . With 72% of the women aged 36 and below being likely to be knowledgeable about HPV vaccine to 78% of the women aged 41 and above who confirmed lack of knowledge on HPV. Based on these findings, it could be deduced that age range played and highest level of education were crucial determinant on women's

knowledge of HPV vaccine. The knowledge of HPV vaccine was likely to be more prevalent in younger women whose level of education was higher than older women with low level of education. Lack of awareness about cervical cancer, HPV and HPV vaccine leads the population to perceive themselves as less vulnerable to cervical cancer and delay their active participation in preventive screening programmes (Marccela, 2006:58).

Lack of knowledge on HPV vaccine prevailed in the majority of the respondents as they were not prepared to let their daughters be vaccinated against HPV. Only a minority of the respondents were prepared to allow their daughters to receive HPV vaccine if they were given pamphlets with relevant information. This finding also confirmed some findings in the previous section about lack of relevant information about cervical cancer, HPV and HPV vaccine among women. However, availability of relevant information and knowledge about HPV on its own would not have forced women to have their daughters vaccinated.

### **5.3 Integration/Application of the Health Belief Model to the Findings**

This study was guided by the Strechor & Ronsenstock (1997) HBM which was discussed extensively in Chapters 1 and 2. This subsection seeks to apply the HBM to the findings of this study. According to the HBM the likelihood that an individual will take action to prevent the illness depends on their perceptions that they are personally vulnerable to the condition, the consequences of the condition will be serious, the precautionary behaviour effectively prevents the conditions and the benefit of reducing the threat of the conditions exceeds the cost of taking action.

This implies that the underlying concept of the original HBM is that the health behaviour is determined by personal belief or perception about the disease and the strategy available to decrease its occurrence. Personal perception is influenced by the

intrapersonal factors affecting the health behaviour. This model can also explain the widespread failure of the women population involved in this study to participate in programmes to prevent or detect cervical cancer or explore reasons related to decreased participation in preventive health programmes.

### **5.3.1 Perceived Susceptibility**

In this study, the majority of the women did not have any knowledge about cervical cancer. Therefore, the perceived susceptibility about cervical cancer was also low among the population. This implies that being as ignorant about cervical cancer as they were one could not expect them to perceive cervical cancer as having any effect on their health. One would not expect these ignorant women to take action to prevent or reduce cervical cancer something which they did not know.

### **5.3.2 Perceived Severity**

As long as these women were ignorant about cervical cancer, they would not be expected to be in a position to have knowledge on its risks and prevention. The women would rather continue indulging in those activities that exposed them to cervical cancer risks such as smoking, long-term use of oral contraceptives, multiple sexual partners, allowing their children to engage in sexual activities before age 18, lack of HPV vaccination before sexual activities, not taking cervical cancer screening for early detection of the disease.

### **5.3.3 Perceived Benefits**

Among those women who had knowledge about cervical cancer, only a small number took the Pap smear, indicating that they did not see any benefit in taking the screening test. This is a clear indication that even knowledgeable women avoided Pap smear and continued with their traditional way of living because they did not see any benefits in it.

### **5.3.4 Perceived Barriers**

The lack of knowledge on cervical cancer, HPV and HPV vaccine cannot be blamed on the population involved in this study. Knowledgeable women were afraid of taking the screen because they thought it was painful, some did not know where to take the screening. However, the majority could have behaved otherwise had they been given enough information about cervical cancer, its preventability and that it was treatable. Lack of information on the existence of the disease and the misconceptions held about the disease were the barriers that women in this study could not possibly have overcome on their own. Therefore, some form of cervical cancer education was needed just to make these women realize the risk situation they were in.

### **5.3.5 Modifying Behaviour**

The population in this study was mainly composed of women whose education level was low, and they were also deeply influenced by their culture. Additionally, due to lack of cancer screening experience and cancer confirmed deaths or cures, it was clear that the women lacked sufficient experiences on cervical cancer that could have influenced them to change their behaviour as a preventive cause.

### **5.3.6 Cues to Action**

As previously stated, there have been unconfirmed cancer deaths or cures from which the women could have learnt or at least one thing about cervical cancer. Secondly, no media health campaigns were being carried out; the only sources of information were nurses who could only be accessed when individual visited the clinics. Lack of information contributed much to lack of behaviour modification.

### **5.3.7 Self-Efficacy**

This applies mainly to those women who were aware of cervical cancer, but continued to avoid taking the screening, they lacked self-efficacy of changing their behaviour for cervical cancer prevention. They were not confident to do so on their own. They needed support from family members or health practitioners. For the majority of the women population, they showed interest in taking the necessary steps to reduce cervical cancer provided they have been given sufficient information on the disease. It is the duty of health staff to communicate information about diseases and to encourage the community to get involved in activities that improve their health.

### **5.4 Conclusions**

A number of conclusions were made from this study based on the findings and discussions.

1. The majority of the women in the Thulamela Municipalities did not have knowledge or information about cervical cancer and therefore risked developing it.
2. The majority of women did not have knowledge about the HPV as a potential risk factor which caused cervical cancer.
3. There was a high parity number of children among many women, therefore, the majority of women could have been exposed to HPV and risked developing cervical cancer. The majority of women with a high parity number of children did not have knowledge about, cervical cancer, its causes and the possibility of its prevention. There were significant association between parity number of children and knowledge of cervical cancer, knowledge of HPV and knowledge of HPV



vaccine. Women with a high parity number of children were more likely to lack knowledge in cervical cancer, its causes, how it was spread and the methods of preventing it.

4. Only a small number of women had knowledge on how HPV was transmitted.
5. There was a low level of information diffusion from the health centres to the majority of the population in the villages as electronic and print media did not serve this purpose well.
6. The knowledge about cervical cancer, HPV and HPV vaccine was significantly associated with the age range, highest level of education, the residence area of respondents at,  $X^2$  values and  $p < 0.05$ .

## 5.5 Recommendations

This study afforded a number of practical recommendations that are likely to educate women about cervical cancer, HPV and its prevention. These include:

1. The possibility of large hospitals having their own small broadcasting stations that will constantly disseminate information throughout the local municipalities;
2. Thulamela Municipality can hold road shows on cervical cancer awareness campaigns that cut across all age groups in the villages;
3. Awareness campaigns must provide accurate information so that women can make informative choices ;
4. The campaigns should emphasize on the importance and effectiveness of

prevention in the form of cervical cancer check-ups;

5. Providing pamphlets with cervical cancer information written in local languages;
6. Include traditional leaders and politicians in the dissemination of cervical cancer information; and
7. Making cervical cancer screening accessible to women in all villages.

## **5.6 Contributions of the Study**

The findings of this study established that the majority of the women in Thulamela Municipality were ignorant of cervical cancer, the risks associated with it, and the fact that it was preventable. It is normally taken for granted that health issues discussed over the mass media diffuse to the population. On the contrary, the main source of information was nurses at clinics in the villages, yet not all women visited the clinics, particularly the elderly ones. There is a dire need to provide information for cervical cancer through various means of communication that the general populace use today.

Practicing nurses who have been assuming that all women were aware of cervical cancer, its causes, risks and prevention, should consider providing information about cervical cancer to all women who visits their clinics or hospitals regardless of what they had come for. The findings of this study should be used in Nursing Education curriculum and further training to reinforce preventive measures and dissemination of information on cervical cancer, HPV and benefits of HPV vaccination. The study will also help the policymakers to redesign secondary school curriculum Life Orientation, Life Sciences to include cervical cancer in life lifestyle diseases.

## 5.7 Further Studies

Further studies that emanate from this study could focus on sustainability of cervical cancer preventive measures and how supportive the government can be to improve the funds for the preventive measures. Similar studies should be considered in other districts in the province.

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# ANNEXURE A

## ETHICS CLEARANCE CERTIFICATE

RESEARCH AND INNOVATION  
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:  
**Ms D Ngambi**

Student No:  
9729987

PROJECT TITLE: Knowledge and practices of women regarding cervical cancer prevention in Thulamela municipality of Vhembe district in Limpopo Province.

PROJECT NO: SHS/14/PDC/05/1809

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr DU Ramathuba	University of Venda	Supervisor
Prof LB Khoza	University of Venda	Co-supervisor
Dr NJ Ramakuela	University of Venda	Co-supervisor
Ms D Ngambi	University of Venda	Investigator - Student

ISSUED BY:  
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: September 2014

Decision by Ethical Clearance Committee Granted

Signature of Chairperson of the Committee: 

Name of the Chairperson of the Committee: Prof. G.E. Ekosse



University of Venda

PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA  
TELEPHONE (015) 962 8816/8313 FAX (015) 962 9060

"A quality driven financially sustainable, rural-based Comprehensive University"

# ANNEXURE B1

## REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Ngambi D  
Box 5574  
Thohoyandou  
0950

The Head of Department  
Attention: Research Directorate  
Department of Health  
Limpopo Province  
Polokwane  
0700

### REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I am currently doing Master Curatoris degree at the University of Venda. I am presently conducting a research study entitled "Knowledge and practices of women regarding cervical cancer prevention at Thulamela Municipality of Vhembe District in Limpopo Province." I am supervised by Dr. Ramathuba DU and Dr. N.J. Ramakuela in the Department of Advanced Nursing Science.

The objectives of the study are to -

1. Assess the knowledge of rural women aged 30years and older regarding cervical cancer prevention;
2. Describe the practices of cervical cancer prevention; and
3. Recommend ways to improve screening uptake

The researcher intends to distribute questionnaires to the women at the selected clinics when they come for consultation on the day when the researcher visits the clinics in Thulamela Municipality, Vhembe District. The questionnaire will be administered within 45-60 minutes and will be completed onsite.

The following ethical standards will be observed throughout the research process in order to preserve the names and dignities of participants:

- Informed consent will be signed under no pressure;
- Voluntary participation and freedom to withdraw without a penalty;
- All the research information will only be accessible to my supervisors;
- Raw material will be kept under lock and key to ensure confidentiality;
- Names of the participants and their communities will not be mentioned during discussions - codes will be used, and
- The research summary will be made available to you if you wish.

Granting me a permission to conduct the research study will benefit all the women in Thulamela Municipality of Vhembe District in Limpopo Province.

Thank you,

Ngambi D

Researcher.


Researcher's Signature: .....

Dr. DU Ramathuba

Supervisor's Signature: .....

# ANNEXURE B2

## PERMISSION FROM LIMPOPO PROVINCE DEPARTMENT OF HEALTH TO CONDUCT RESEARCH



**LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

---

**DEPARTMENT OF HEALTH**

Enquiries: Latif Shamila Ref:4/2/2

**Ngambi D**  
University of Venda  
Private Bag X5050  
Thohoyandou  
0950

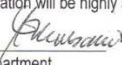
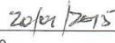
Greetings,

**RE : Knowledge and practices of woman regarding cervical cancer prevention in Thulamela Municipality of Vhembe District in Limpopo Province.**

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
  - Research must be loaded on the NHRD site (<http://nhrd.hst.org.za>) by the researcher.
  - Further arrangement should be made with the targeted institutions.
  - In the course of your study there should be no action that disrupts the services.
  - After completion of the study, a copy should be submitted to the Department to serve as a resource.
  - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
  - The above approval is valid for a 3 year period.
  - If the proposal has been amended, a new approval should be sought from the Department of Health.

Your cooperation will be highly appreciated.

  
Head of Department   
Date


---

18 College Street, Polokwane, 0700, Private Bag x9302, POLOLKWANE, 0700  
Tel: (015) 293 6000, Fax: (015) 293 6211/20 Website: <http://www.limpopo.gov.za>

The heartland of Southern Africa – development is about people

## ANNEXURE B3

### PERMISSION FROM VHEMBE DISTRICT TO CONDUCT RESEARCH



**LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

---

**DEPARTMENT OF HEALTH  
VHEMBE DISTRICT**

Ref: 4/2/2  
Date: 13/04/2015  
Enq : Muvari MME


Ms Ngambi  
P.O. Box 5574  
Thohoyandou  
0950

Dear/Madam

Re: APPLICATION TO CONDUCT RESEARCH

1. The above matter has reference.
2. Your request to conduct research in our health facilities has been approved by the Provincial office.
3. The district has no problem with your research process, but make prior arrangements with the facilities you would like to visit and the people you will be interacting with.
4. Hope your research will run well

Yours in service

  
.....  
ACTING DISTRICT EXECUTIVE MANAGER

13/04/15

Private Bag X5009 THOHOYANDOU 0950  
OLD parliamentary Building Tel (015) 962 1000 (Health) (015) 962 4958 (Social Dev) Fax (015) 962 2274/4623  
Old Parliamentary Building Tel: (015) 962 1848, (015) 962 1852, (015) 962 1754, (015) 962 1001/2/3/4/5/6 Fax (015) 962 2373, (015) 962 227

*The heartland of Southern Africa – development is about people*



# ANNEXURE C

## INFORMED CONSENT

I am a Masters student at the University of Venda. I am presently conducting a research study entitled "Knowledge and practices of women regarding cervical cancer prevention at Thulamela Municipality of Vhembe District in Limpopo Province." I am supervised by Dr. DU Ramathuba and Dr. NJ. Ramakuela in the Department of Advanced Nursing Science. The researcher selected you to participate in this study because you are a woman who will be able to provide valuable information. Your participation is voluntary.

The objectives of the study are to,

1. Assess knowledge and practices of women regarding cervical cancer prevention;
2. Describe the practices of women regarding cervical cancer prevention; and
3. Recommend ways to improve the screening uptake.

I need to conduct the research to women aged 30 years and older regarding cervical cancer prevention and give questionnaires to them at the selected clinics when they come for consultation on the day when the researcher visits the clinics in Thulamela Municipality, Vhembe District. The questionnaires will be administered within 45-60 minutes and will be completed onsite. You will be given questions related to cervical cancer prevention regarding how much you know about cervical cancer screening. No payments will be made by or to you. Participants will gain more knowledge about cervical cancer prevention and the benefits of screening.

The following ethical standards will be observed throughout the research process to protect your feelings, names and dignities as participants:

1. Informed consent will be signed under no pressure;
2. Participation will be voluntary and participants have the freedom to participate, withdraw the consent or discontinue participating at any time during the research process without a penalty of any kind;

3. All the research information will only be accessible to my supervisors;
4. Raw materials will be kept under lock and key to ensure confidentiality;
5. Names of the participants and their communities will not be mentioned or written anywhere during discussions - instead codes will be used; and
6. The research summary will be made available to you if you wish.

Your participation in the study will benefit all the women of Vhembe District in Limpopo Province.

Thank you.

### CONSENT FORM

I,.....,hereby understand the content of this research after I read this document and the researcher's explanations.

I have read (or someone has read to me) the information provided above. I have been given an opportunity to ask questions and all of my questions have been answered to my satisfaction. I have been given a copy of this form.

by signing this form, i willingly agree to participate in the research.

Name of Participant.....

Signature of Participant ..... Date .....

Name of Interviewer .....

Signature of Interviewer..... Date .....

### RESEARCH LEADERS

NGAMBI DORIS, CELL NO: 0844582122, ADDRESS: BOX 5574, THOHOYANDOU, 0950

# ANNEXURE D

## RESEARCH QUESTIONNAIRE

Questionnaire Number-----

Date-----/-----/-----

**Instructions:**

1. Please do not write your name or identity number on any part of this questionnaire.
2. Do not tear any page.
3. Answer all the questions to the best of your ability.
4. Please do not hold any conversation with any one concerning this questionnaire and its content.
5. Please tick or fill the gap in the spaces provided as appropriate.

**Respondent's code (For official use)**

--

**SECTION A: DEMOGRAPHIC DATA**

Please tick:

**1. Age:**

30-35 years	
36-40 years	
41 years and above	

**2. Marital status:**

Single	
Married	
Divorced	
Widowed	

**3. What is your ethnicity?**

Venda	
Northern Sotho	
Tsonga	

**4. Which area do you come from?**

Thohoyandou	
Shayandima	
Mhinga	
Malamulele	
Mphambo	
Phiphidi	
Other	

**5. For how long have you been staying in the area?**

**5. Highest standard passed:**

5.1 Never attended school	
5.2 Grade1-Grade7	
5.3 Grade 8-Grade 12	
5.4 Grade12 and above	

**6. Employment status:**

Unemployed	
Employed	

**7. Parity-number of children:**

None		Four	
One		More than five	
Two		More than eight	
Three		Ten	

**SECTION B: KNOWLEDGE REGARDING CERVICAL CANCER PREVENTION**

**1. Have you ever heard about Cancer of the Cervix? (Please circle)**

Yes
No

**2. If yes, source of information (please circle, you may circle more than one)**

- a) Friend
- b) Family member
- c) Medical or Nursing personnel
- d) Other.....(please circle) (a)Magazine (b) TV (c)Radio (d) Newspaper

**3. What was the content of information about cervical screening you received?**

.....

**4. Risk factors for Cervical cancer can be:**

Multiple sex partners	Yes	No
Having genital warts	Yes	No
Sexual intercourse before 18	Yes	No
Having contracted STIs	Yes	No
Smoking cigarettes	Yes	No
Use of oral contraceptive	Yes	No

**5. Cervical cancer can be diagnosed by:**

- a) Pap smear
- b) Biopsy
- c) Taking blood
- d) None of the above

**6. Is cancer of the cervix preventable? (Please circle) Yes/No/Don't know**

**7 If Yes, which of the following are preventive measures for this type of cancer? (Please circle, more than one if you like). If No, do not answer**

- a) Using condoms
- b) Good hygiene
- c) Pap smear

- d) Human papilloma virus (HPV) vaccine
- e) Not smoking
- f) Exercise
- g) Delaying age of first sexual contact

**8. Have you ever heard about screening tests for cervical cancer?**

Yes
No

**9. What is it called?.....**

**10. Have you ever had a Pap smear**

Yes
No

**11. Did your clinic offer it to you?**

**12. What was the reason for not having the test done?**

**13. If you were given a pamphlet about the Pap smear: Would you do the test?**

Yes
No
Do not know

**SECTION C KNOWLEDGE ABOUT HUMAN PAPILLOMA VIRUS (HPV)**

**14. Have you ever heard of the HPV (HPV)? (Please circle) Yes/No**

(If your answer is Yes proceed. If No, stop)

**15. Who/What was the source of the information regarding HPV? (please circle, circle more than one if you wish)**

- a) Parent
- b) Neighbour/Friend
- c) Family member
- d) Medical or Nursing staff

e) Other (please circle) (i) Magazine (ii) TV (iii) Radio (iv) Newspaper

**16. The virus associated with cervical cancer is transmitted by:**

- a) Sexual intercourse
- b) Kissing
- c) Not using a condom during sexual intercourse
- d) None of the above

**17. HPV can cause Cervical Cancer (Please circle) True False Don't know**

**18. Who can become infected with HPV? (Please circle)**

- a) Men only
- b) Women only
- c) Both Men and Women
- d) Don't know

**19. Most people with genital HPV do not have symptoms of the infection (please cross)**

**20) How worried are you of getting HPV? (Please cross)**

(a) Not worried
(b) A little worried
(c) Very worried

**21. If you were given a pamphlet about the Pap smear and vaccine for HPV:**

**Would you do the test?**

Yes
No
Not sure

**SECTION D: KNOWLEDGE ABOUT HUMAN PAPILLOMA VIRUS (HPV) VACCINE**

**22. Have you ever heard about the HPV Vaccine? (Please circle) Yes/No**

(If your answer is Yes, proceed. If No, stop)

**23 For which age group(s) is it recommended? (Please circle)**

- a) 9 -26 years
- b) 26 - 40 years
- c) 41-50 years
- d) Don't know

**24 Who is eligible for HPV vaccine? (Please circle)**

- a) Males
- b) Females
- c) Both
- d) Don't know

**25 The current available vaccines can protect against genital warts and cervical cancers (please cross)**

Yes
No
Not sure

**26. If you were given a pamphlet about the vaccine for HPV: Would you let your daughter receive the HPV vaccine when she is in school**

True
False
Not sure



# ANNEXURE E

## CONFIRMATION BY LANGUAGE EDITOR



UNIVERSITY of the  
WESTERN CAPE

FACULTY OF NATURAL SCIENCES

DEPARTMENT OF MEDICAL BIOSCIENCES

---

Donavon C. Hiss  
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---

6 December 2015

To Whom it May Concern

This serves to confirm that I have edited the language, spelling, grammar and style of the MCur thesis by **Doris Ngambi**, titled: **“Knowledge and Practices of Women Regarding Cervical Cancer Prevention at Thulamela Municipality of Vhembe District in Limpopo Province.”**

Sincerely Yours



Dip. Freelance Journalism, Dip. Creative Writing, MSc (Medicine), PhD