

**FACTORS AFFECTING CERVICAL SCREENING OF FEMALE NURSES AT PUBLIC
HEALTH INSTITUTIONS IN VHEMBE DISTRICT, LIMPOPO PROVINCE**

By

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DECLARATION

I, Mathivha Lindelani, hereby declare that “*Factors affecting participation to cervical screening by female Nurses in Public Health Institutions in Vhembe District, Limpopo Province*” submitted by me, has not been submitted previously for a degree at this or any other university, that it is my original work in design and in execution and that all sources used have been duly acknowledged by means of complete references.

Student Signature



Date signed

26/01/2022

DEDICATION

This dissertation is dedicated to the following people:

- To my precious daughter Vhutali Tiana Mathivha and my lovely wife Mudau Pfano
- To my sweet mother Avhashoni Mathivha, my sister Ndivho Mbave, my brother Rendani Mbave and my caring grandmother Mudzunga Nedzamba.
- To all female nurse in Limpopo province and all nurses around the globe who play vital role in cervical screening.

ACKNOWLEDGEMENT

- I would like to thank God for His unconditional love, which far surpasses my mere knowledge. He gave me the strength, courage and the power to go on with this study. That was far over and above all that I can ask or think, beyond my highest prayers, desires, thoughts, hopes or dreams.
- I would like to express my sincere gratitude to the following people:
- Prof DU Ramathuba, for her love, patience, supervision, support, encouragement and expert guidance throughout the study.
- Prof MS Maputle as co-supervisor, for her support, inspiration and insight.
- The provincial and district health service managers
- To thank all the participants from the selected clinics, Hospitals and the Department of Health for the approval of this study.

LIST OF ABBREVIATIONS AND ACRONYMS

CHC	Community Health Centre
DFH	Donald Fraser Hospital
DoH	Department of Health
EN	Enrolled Nurse
ENA	Enrolled Nursing Auxiliary
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
NCR	National Cancer Registry
RN	Registered Nurse
SA	South Africa

ABSTRACT

Background: Cervical cancer is the leading cause of death among women and more common in developing countries creating social and economic instability. Many of these women are diagnosed with cancer at advanced stage of disease because of lack of screening and early detection services.

Purpose: The main purpose of this study was to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district.

Methods: A quantitative cross-sectional descriptive design was used in this study. The target population was 264 professional nurses who were sampled from four hospitals. The stratified random sampling method was used to sample all female nurses from all categories at their workplace. Structured questionnaires were used in the collection of data. Throughout the study ethical considerations were adhered to. Descriptive statistics were used in analysing data to identify statistically significant differences between groups involved in this study. The collected data was captured and analysed using SPSS version 26 and all the findings were presented in percentages, frequencies, tables and graphs.

Results: Regards to attitude and practice the results shows 83% (n=218) of female nurses have screened for cervical cancer, while 17% (n=46) did not screen. The study also reveal certain barriers which prevent females nurses from being screened, this include embarrassment (30%), fear of positive results (15%), fear of pain (10%) and (31%) female nurses think they are healthy. The study found a significant relationship between socio-demographic characteristics and knowledge, attitudes and practices regarding cervical. It was found that age range and level of education significantly affected knowledge level ($p=0.000$).

Recommendations: The study therefore recommended that the awareness regarding cervical cancer should be upgraded and the nurses should be trained in the same context as well as more research in other rural based hospitals.

Keywords: Cervical screening, factors, female nurses, public health institutions

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction and background

Cancer of the cervix is an increasing health problem and an important cause of mortality worldwide. Although cervical cancer is preventable, it constitutes a major public health threat to women in many low and median resourced countries in South and Central America, Sub Saharan Africa, South and Southeast Asia where it is still the leading type of cancer among women. It is estimated that 528 000 new cases and 267 000 cervical death occurs annually, of which 445 000 new cases and 230 000 deaths occur in low resource countries (Sankaranarayanan, 2015). The rise in mortality remains high as it compares to the report by Globacon (2012), which reported 266 000 women who died from cancer in 2012, revealing a significant rise in mortality cases compared to those in 2008. Europe occupies the 9th rank female cancers in terms of incidence and the 12th in terms of mortality. With approximately 3000 new cases and 1,100 death per year, cervical cancer represents the 12th leading cause of cancer and 10th leading cause of death among women in France (Engbang, Essome, Mve, Ndjom & Foumane, 2020). Regardless of where it occurs, cervical cancer has overwhelmingly negative impact on women, families and communities.

According to Mutambara, Mutandwa, Mahapa, Chirasha, Nkiwane & Shangahaidonhi (2017), human papilloma virus is recognized as the cause of 99% of all cervical cancer worldwide and discovery of human papilloma virus as predominate cause of cervical cancer has necessitated the administration of HPV vaccines as additional means of cervical cancer prevention. However, other co-factors have been found including having multiple sexual partners, early age of onset of sexual activity, increasing parity, current or previous sexually transmitted infection including HIV and smoking. In general, all sexually active women are at risk for developing cervical cancer (Seyoum, 2017).

A pap smear is primary screening test in detecting precancerous and cancerous lesion of the cervix and useful for early detection and implementation of appropriative treatment in pre-invasive cervical lesion (Sridhar & Naga, 2019). According to Sachan, Singh, Patel & Sachan (2018), early diagnosis and appropriate treatment is crucial for decreasing the mortality rate as cervical cancer has along premalignant period that provide the opportunity for screen and treat before it turns to be invasive cervical cancer. Furthermore, cervical cancer and its mortality have been proven preventable by various screening and treatment strategies aimed at sexually active women. But despite availability of cervical screening methods, majority of cancers including cervical cancer are diagnosed at an advanced stage of disease because of

lack of screening and early detection service (Kasa, Tesfaye & Temesgen, 2018). Poor knowledge about cervical cancer, poor attitude towards disease, risk factor and lack of awareness can affect screening practice and development of preventive behaviour for cervical cancer (Aweke, Ayanto & Ersado, 2017). Moreover, it has been found that the cost of treating late-stage cancer is substantially higher than of early-stage cancer and that prognosis can be improved if screening is embraced (Humariya, Durrani, Alfayyad, Riaz, Tabasim, Paverz & Amani, 2019)

According to Awoyesuku, Altraide & Mac Pepple (2019), various factors like non-availability, poor accessibility, fear and hopelessness concerning diagnosis of cancer, perception of tests as being unnecessary, lack of adequate information, as well as cultural and behavioural barriers are responsible for low uptake of cervical screening. These factors were observed in various studies and literatures conducted by various researchers. In a health care setting, nurses play a major role in public as they are more informative and have more knowledge on cervical screening. They are expected to have most adequate and updated information regarding cervical cancer (Can et al., 2014). However, various studies conducted and documented proved otherwise.

In a study conducted in Qatar by Alali, Salem, Elmahdi, Alkubasi, Alwahedi, Taher, Yousuf, Aljaber & Mostafa (2016), despite knowledge of cervical cancer and prevention among female nurses, their attitude towards cervical screening were negative. The study also revealed that none of female nurses who participated in the study had undergone cervical screening and the main reason was due to fear of embarrassment, fear of pain and lack of interest. Among other barriers for effective cervical cancer screening which were observed include lack of knowledge, inadequate training of staff, not feeling at risk, lack of symptoms, carelessness, fear of vaginal examination, lack of interest and test being unpleasant. This attitude and negative beliefs towards cervical cancer were reason for poor screening behaviour.

In another study conducted in India tertiary care hospital by Pegu, Dhiman, Chaturvedi & Sharma (2017), their study revealed low uptake of cervical cancer screening and none of female nurses had undergone cervical screening. Similar to the study conducted in Qatar, certain factors were found to be more predominant and having influence on cervical cancer screening. The study revealed that 15% of respondents believed that cervical screening is painful, 22% found it embarrassing and 68% respondents did not feel at risk of having cervical screening.

In another study done in Ethiopia by Mihret, Nigus, and Semarya (2016), among 225 nurses who participated in the study only 24 (10.7%) reported that they have tested for cervical cancer in the past five years. The most common reason for not being screened for cervical cancer

include carelessness 17.9%, fear of positive results 16.4% and fear of pain 10.9%. As evidenced by different literature, high level of knowledge and awareness demonstrated by health care professionals did not translate to proper utilization of screening services.

In another study conducted in Nigeria by Awoyesuku et al (2019), the results revealed that the reason for not practising cervical screening were lack of interest, not being sexually active, no access to facility, fear of positive test results, not able to make out time and waiting for childbirth. These factors were identified to be barriers and contributed in the low uptake of screening service.

Dulla, Daka & Wakgari (2017) also indicated that cervical screening attendance rates are still far from satisfactory in many countries and challenges of cervical cancer screening in developing countries include limited health care service facilities, poor infrastructure laboratories. Another contributory factor in the uptake of cervical screening is that female health care workers are hesitant to talk about these issues with other male physicians or other male health care provider including male nurses (Humariya et al., 2019).

In South Africa, according to cervical cancer prevention and control policy of 2017, by National Department of health, despite the existence of national cervical screening programme since 2002, cervical cancer incidence remained unchanged. The prevalence and death rates from cervical cancer is high and the main cause of high number of deaths resulting from cervical cancer could be related to lack of information and maybe if female nurses are participating as they should cervical cancer case were going to be reduce or low. South Africa contributed 25% of infection- related cancers and it is ranked as the leading cause of female cancer death. The prognosis associated with cervical cancer is poor with half of cervical cancer cases estimated to result to death.

Furthermore, no known study has been conducted about “Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province”. Therefore, little is known about factors affecting participation to cervical screening by female nurses in public health institution in Vhembe district, Limpopo province as there is gap or lack of literature focusing on this phenomenon. The researcher anticipates investigating on factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo province.

1.2 Problem statement

Worldwide, cervical cancer is the most fourth most common cancer affecting women and around 85% of global burden occurs in the less-developed countries, where cervical cancer accounts for almost 12% of female cancer (Manikandan, Behera, Naidu, Angamuth,

Mohammed & Debata, 2019). In South Africa, new cervical cancer cases of about 12,983 were recorded in 2018 as it was reported by the National Cancer Registry (NCR), there were 5 785 new cases of cervical cancer in 2012. The number showed an increase as reported by Information centre on HPV and Cancer (2019), it is estimated that about 12 983 new cervical cancer cases reported from 2018. Lekota (2018) reported that there has been a decline in cervical screenings done annually in Limpopo Province from 82 041 in 2013 to 23 527 in 2015 screening. Furthermore, the distribution of cervical cancer by geographical area in Limpopo Province shows statistically significance increases in cervical cancer prevalence and was observed in all five districts, Mopani District had highest prevalence in 2013 and 2014 followed by Waterberg district in 2015 at 20%, 19% and 21.9%. Vhembe District has the lowest cervical cancer prevalence as compared to other four districts, but this district is showing increasing trend from 14.3% in 2013 to 15.9% in 2015.

The decline in cervical screening in Vhembe among women could result in high morbidity and mortality from this disease with devastating impact on society. Cancer is responsible for the premature removal of many economically active women, mothers, and grandmothers from society. This poses not only financial burden on family, but also social and emotional trauma to other family members, alteration in family structure because young children must drop out of school to become caregivers, loss of amenities and fall below poverty line.

1.3 Rationale

Previous studies in Vhembe districts were done among women looking at knowledge, attitudes and practices as well as in South Africa, very few or no study focused on the female health care providers in Vhembe district. This study needs to be done to document the knowledge of female nurses concerning cervical cancer and their attitudes and practices towards cervical screening to improve the uptake among women and bridge knowledge gap through capacity building.

1.4 Significance of the study

The results of this study could add to existing knowledge with regards to cervical cancer screening in Vhembe District of Limpopo. The nurses' reproductive health may improve, and the uptake of cervical cancer screening may improve according to the stipulated national target coverage. The health services may experience a decrease in mortality and morbidity rates and reproductive health services will be efficient.

1.5 Purpose of the study

A purpose of this study is to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province.

1.6 Objective of the Study

Objectives of this study are to:

- Assess cervical cancer knowledge of female nurses in public health institutions in Vhembe District, Limpopo province
- Describe attitudes and practices about cervical cancer screening among female nurses in public health institutions in Vhembe District, Limpopo province
- Identify barriers to cervical screening among female nurses in public health institution in Vhembe District, Limpopo province.

1.7 Theoretical framework

According to Karimy, Gallali, Niknami, Aminshokravi and Tavafian (2012). Predictors of Cervical cancer screening: An Application of health belief model. The health belief model aims to explain preventive health behaviours rather than behaviour in time of illness. The Health Belief Model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control disease condition. Thus, this model assumes that health behaviours are motivated by five elements of perceived susceptibility, perceived seriousness, perceived benefits and perceived barriers to behaviours, cues to action and most recent factors of perceived self –efficacy.

- **Perceived susceptibility-** This refers to belief about the likelihood of getting disease or condition. In this study, female nurses must believe there is possibility of getting cervical cancer before they will be interested in the up taking Pap smear. Previous study has shown that individual who believed they had risk factors for cervical cancer were more likely to act to prevent an adverse outcome after getting disease.
- **Perceived severity-** This refers to the severity of health problem as assessed by individual. This variable refers to feeling about seriousness of contracting an illness or leaving it untreated. In this study for example, female nurses must perceive that cervical cancer is severe disease and believe that getting cervical cancer would have serious medical, social and economic consequences for them, it is more likely obtained cervical cancer screening test.

- **Perceived benefits-** Female nurses in this study must believe that a course of preventive behaviours available would be beneficial in reducing the risk of getting cervical cancer. Therefore, individuals exhibiting optimal beliefs in susceptibility and severity are not expected to accept any recommended health action unless they also perceive the action as potentially beneficial by reducing the treat.
- **Perceived barriers-** refers to the negative aspect of health-oriented action which serves as barriers to action and that arouse conflicting incentives to avoid such as expensiveness, time consuming, unpleasant and embarrassments. Female nurses must believe that benefits of doing behaviour to prevent outweigh the barriers to or cost of preventive behaviours, they are more likely to obtain cervical cancer screening test.
- **Cues to action-** This refers to readiness to action by other factors particularly by cues to instigate action such as bodily events or environmental events such as media publicity. Female nurses would be more likely to have preventive behaviour on cervical screening by another health care worker, friends or family member.
- **Perceived self-efficacy-** is defined as the conviction that one can successfully execute the behaviour required to produce. Female nurses should be confident that they could uptake Pap smear in regular manner and overcome perceived barriers to act.
- **Other variables-** These variables include demographic, socio-psychological, knowledge, socio cultural, race, education and structural variables may influence perception. Different groups have different belief about causes of cervical cancer, which can affect perceived susceptibility.

1.8 Definition of terms

1.8.1 Factors

In this study these are contributors in the uptake of cervical cancer screening which could be either good or bad.

1.8.2 Female nurses

A person who has met the education requirements for registration as a professional nurse, staff nurse or as an auxiliary nurse prescribed in the Regulations Relating to the Approval of and the minimum requirement for the education and training of learner leading to registration in the category professional nurse, staff nurse or auxiliary nurse, published in terms of Nursing Act 33 of 2005. Female nurses in this study are nurses who are working in public institutions

and who should also form part of cervical screening and should be in the forefront of cervical cancer prevention.

1.8.3 Cervical screening

According to cervical cancer prevention and control policy (2017), cervical cancer also known as Papanicolaou or pap smear is a human and laboratory resource intensive method which involves using a device to collect cell from the cervical face and endocervix and spreading the cell on a glass slide for reading by trained cytologist at laboratory. In this study, cervical screening involves to collection of cells from the cervix of female nurses working in public health institutions for the past 5 years in the field for testing of cell for any abnormalities and for early detection of cancerous cells.

1.8.3 Public health institutions

Public health institution are institutions that play a role in monitoring and evaluating health care workers' performance and devising approaches and aides to improve performance and patient care (Bloland et al., 2012). In this study, public health institutions are an institution whose main aim is to reinforce, promote, and provides treatment to patients as well as to promote cervical screening together with support to all female health care workers who are working within their respective institutions

1.9. Outline of the Chapters

Chapter 1

The first chapter outlined the introduction of the study. Chapter one includes the following topics, the Statement of the problem, objectives of the study, research questions of the study, significance of the study and definition of operational terms, where operational terms are defined in the context of this study.

Chapter 2

This chapter deals with literature review and it focuses on various studies regarding factors affecting participation in cervical screening by female nurses. It outlines demographic factors, attitudes and barriers towards cervical screening by female nurses.

Chapter 3

Chapter three deals with methodology and design of the study. It outlines the methods, technique and procedure followed or employed within the study including research design, study setting, sampling method, sample size, data collection and analyses used.

Chapter 4

In this chapter collected data is analysed and the findings are presented following the structure of the data collection instrument used. The results are presented in three section which includes the demographic information, knowledge on cervical cancer screening, attitudes and practices regarding cervical cancer screening.

Chapter 5

This chapter focus on the discussion of findings and is organised in five sub-sections based on the objectives of this study: Socio-demographic characteristics, knowledge of cervical cancer and screening, attitudes, and practices as well as barriers to cervical screening among female's nurses.

Chapter 6

This chapter outline summary, conclusion, recommendation and limitation of the study. Recommendation which are made in this chapter derived after thoroughly examination of the findings of the study

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Burns & Grove (2005) as cited by Brink, van der Walt & Van Rensburg (2012) stated that literature review is a systematic and explicit approach to the identification, retrieval and bibliographical management of independent studies (usually drawn from the published sources) for locating information on a topic, synthesizing conclusions, identifying areas for future studies, and developing guidelines for clinical practice.

2.2 Purpose of the Literature Review

According to Brink, van der Walt & Van Rensburg (2012), researcher conduct the literature review for various reasons, namely to:

- To identify the research problem and to refine the research question.
- To obtain clues on the methodology and instrument.
- To compare findings of the existing studies with those of the study at hand.

In this study, researcher review relevant literature on “Factors affecting participation to cervical screening among female nurses in public health institution”. The researcher found that various studies were conducted in various countries, but no reports or study conducted in Vhembe District and no literature on this aspect.

2.3 Participation to cervical screening by female nurses

Different studies showed that female health workers in the world regardless of their different characteristic, their utilisation of cervical screening are low. In Qatar as reported by Alali et al (2016) indicated that about 42.2% female health care workers where 81% of nurses participated in study were screened, in Bagdad 18.8% of female midwife and nurses were screened previously as reported by Rashied & Abbas (2014) as cited by Seyoum (2017). Another study which was conducted in Turkey as reported by Savas & Taskin (2011) also reported that half of midwives which of about 58.1% did not screened for cervical cancer. In Tanzania, only 15.4% female health care workers were screened as reported by Urasa & Darj (2011). Another study which was done in Makete public health facility shown 10.7% nurses had been tested for cervical screening within the past five years as reported by Mihret, Nigus and Semarya (2016).

2.4 Factors affecting participation to cervical screening

Globally, there are many factors which influence cervical screening and understanding of the factors affecting participation to cervical screening in individual, community and health care level is essential to improve at national level. Factors in proportion to women socio-demographic characteristic, knowledge, attitude and other predictable variables are varied with different studies around the globe (Seyoum, 2017).

2.4.1. Socio- Demographics Factors

2.4.1.1 Age

Age has a significant association with utilization and participation towards cervical screening. In a study conducted by Gebru, Gerbaba and Dirar (2016), the study revealed that different age group had association with the participation to cervical screening and study reported that female health workers including nurses in reproductive age greater than 30 years are associated with cervical screening. They were found to be more than eighty-three times more likely to use service than those whose age is less than 30 years.

2.4.1.2 Marital status

Married female health worker also had a significant factor to participate in cervical screening service. In a study conducted in Ethiopia by Gebru et al., (2016), the results indicated that those who are married were more likely to screen for cervical screening. These results are similar to the study done by Mihret, Nigus and Semenya (2014), their study report indicated that more than half (62.7%) of the study respondents were actually married.

2.4.1.3 Educational level

According to Awoyesuku, Altraide, and Pepple (2019), high level of education and income often determines awareness level about health conditions and financial capability to access health care. In a study conducted by Bakari, Takai and Bukar (2015), results showed that higher level of education had a significant factor in Nigeria, staff nurses and nursing officer were four to five times less likely to participate in cervical cancer screening service than assistant director of nursing. These results were also consistent with the study conducted in Turkey where female health workers who had tertiary education had more uptake of cervical screening service.

2.4.1.4 Parity

Parity is also the contributing factor in the uptake of cervical screening. In a study conducted by Bakari, Takai and Bukar (2015) in Nigeria, female health workers with high parity greater or equal to 5 births were significantly associated with increased level of participating in cervical screening while those with less parity were not participating.

2.4.1.5 Workplace

A study in Makele showed that female health workers who work in outpatient department have had a significant association with utilization of cervical screening and who are working in OPD were three times more likely to participate in cervical screening (Mihrets, Nigus & Semarya, 2014)

2.4.1.6 Knowledge

Knowing the risk factors about cervical cancer was significant associated factor in Turkey. In Niger delta also awareness about cervical screening and in Addis Ababa heard about cervical cancer screening were a factor to utilize service. In Tanzania, also participation to cervical screening was associated with knowing the preventability of cervical cancer. Inadequate training was reported in a study conducted by Alali et al., (2016), findings shows that around 14.8% of respondents indicated that they were not trained for cervical screening and this might hamper cervical screening program and contribute to low uptake of cervical cancer by health professionals including nurses.

2.4.2 Attitude and perceived barriers towards cervical screening

2.4.2.1 Perceived susceptibility

In a study conducted by Alali et al., (2016), female health workers including nurse of about 12.3% did not feel at risk and further report indicate that these staffs are unlikely to motivate others or give advice until their doubts are cleared. This shows that health care workers who have a good attitude towards cervical screening are more likely to participate in the cervical screening than those with bad attitude.

2.4.2.2 Perceived barriers

2.4.2.2.1 Embarrassment

Alali et al., (2016) reported that among the female health workers who participated in the study conducted in Qatar, about 17.3% of female health worker including nurses felt embarrassed and 13.6% does not want to be exposed to the colleague. Some of female health workers preferred to be examined by female physician (94.5%) and are afraid to expose private part to male health care provider. In another study conducted in Ethiopia, about 11 % female health workers including nurses felt some degree of embarrassment.

2.4.2.2.2 Lack of interest

Female health workers lack interest to participate in the cervical screening even when they are role model. In a study conduct in Qatar, about 6.2% of female health workers lack interest and did not participate in cervical screening (Alali et al., 2016). Shekhar, Sharma & Raina (2013) report that about 43.5% female nurses did not participate to cervical screening for no reason and did not see the need to screen in India. Another study which was conducted in Tanzania about 13% of female health workers had no reason for not to be screen.

2.4.2.2.3 Lack of symptoms

In a study conducted in Qatar by Alali et al., (2016), reported that 9.9% female health workers who participated indicated that one of the reasons for not screening is because of absence of symptoms. Female nurses who participate in the study conducted in Ethiopia by Mihret et al., (2014), about 7% believing not at risk and did not feel the need to screen and report shows that women developed positive attitude towards cervical screening only after experiencing significant clinical symptoms, including yellowish discharge or bleeding from the vagina.

2.4.2.2.4 Afraid of the outcomes

In study conducted in Qatar, about 11.1% reported that they were afraid of screening test being positive or have positive results (Alali et al., 2016). Another study which was conducted in Ethiopia indicated that about 11% of female health workers including nurse's fear of results.

2.4.2.2.5 Fear of pain

Pain is associated with the uptake of cervical cancer screening. In the study conducted by Ethiopia by Mihret et al., (2014), about 10.9 % of nurses reported fear of pain and perceived

cervical screening as a painful procedure. Similar findings were observed in the study conducted in Qatar by Alali et al., (2016), about 4.9% indicated that the procedure is painful.

2.4.2.2.6 Lack of time

One of the contributory factors in participation to cervical screening among female health care workers includes lack of time. Seyoum (2017) reported that 11.4% of female health workers who participated in the study conducted in Ethiopia reported that they lack time to participate in cervical screening.

2.4.3 Perceived benefits

In a study conducted by Alali et al., (2016), with regards to attitude towards cervical screening the study showed positive attitude towards screening and 84% respondents felt they need to screen. Comparatively a study conducted by Seyoum (2017), showed similar findings that some medical workers including nurses around 60% had strong perceived that screening could prevent from getting cervical cancer and detection of pre-cancerous changes earlier and 52% also respond that screening couldn't have a harm on the client.

2.4.5 Self-efficacy

In a study conducted by Pegu, Dhiman, Chaturvedi, Suresh and Sharma (2017) in India, around 85% of female health workers did not recommend cervical screening to other, this showed that there is still a huge gap on confidence towards cervical screening service. It has been shown that health care provider recommendation are strongly predictors of cervical cancer screening of general population. These health care professionals who had not tested for themselves may not initiate and recommend screening to others. Contrary to a study conducted by Seyoum (2017) report that around 42.7% of female health had mentioned to recommend cervical to other and had also participate in cervical screening.

2.4.6 Acceptability

In a study conducted by Alali et al., (2016), some respondents didn't participate in cervical screening and feel it is embarrassment, only one third had done pap smear, this show that Qatar is conservative regarding discussion of cervical cancer screening and considered the issued as confidential due to their culture. In another study conducted by Seyoum (2017), similar findings were observed, and respondents had mentioned to accept the service even if it was expensive and other had agreed to be screened by male doctors. This shows that

acceptability might vary as it is greatly influenced by culture and religion. Whereas, in Nigeria a study conducted by Awoyesuku et al., (2019), had very low uptake in cervical screening. The lower uptake was associated with sociocultural barrier, lack of physician referral and poor risk perception.

2.5 Conclusion

This chapter covered literature review and highlighted factors affecting participation in cervical screening by female nurses. The following chapter will address methodology of the study.

CHAPTER 3

RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

The purpose of this chapter was to describe research investigation. The researcher outlined the methods, technique and procedure which were followed or employed within the study including research design, sampling method, sample size, data collection and analyses used. A quantitative approach was used in this study.

3.2 Study Design

The study adopted descriptive design and cross-sectional design to describe factors affecting participation in cervical screening by female nurses in public health institution in Vhembe district, Limpopo Province. This approach assisted the researcher in gathering respondent's knowledge on cervical screening, attitudes and practices about cervical screening as it was gathered in wider or broader scale with the aid of structured questionnaires or formal instrument when data was collected.

3.3 Study Setting

The study was carried out in Vhembe district, which is divided in four municipalities: Thulamela, Makhado, Musina and Collins Chavane. Vhembe is dominated by women with population size of 704, 559 which is 54.4% compared to male with males whose population size is about 590 509 which is 45.6% and most household are female headed. In this study research setting was at four public health institutions which were selected for research purpose including two hospitals (Tshilidzini Hospital and Donald Frazer Hospital) and two community health centre (Thohoyandou CHC and William Eddie CHC) which are found within Thulamela local area, in Vhembe region.

Figure 1: Vhembe district map illustrating four public health institutions



3.4 Study population

3.4.1 Target population

In this study target population was female nurses who are working in the public health institutions around area in Vhembe region of Limpopo province.

3.5 Sampling

3.5.1 Sampling of Health facilities

In this study, the researcher paid attention on the public health Institutions which were located within Thulamela municipality around Vhembe region because it is the biggest compared to other three municipalities in Vhembe District. It is an economic hub or economic zone because of economic activities which are taking place in this area as there are many businesses operating at Thohoyandou which is local town. Purposive sampling was used to sample hospitals found in Vhembe district. Donald Fraser hospital serves as district hospital and Tshilidzini Hospital serve as regional hospital in the heart of Vhembe District. Primary health clinics and community health centres around Thulamela local area transfer their patients to these two hospitals. Other health care centres and facilities included in this study include Thohoyandou CHC and William Eddie CHC as they are found within this area and these two facilities provide support to the district hospital and regional hospital. Thohoyandou CHC refer

their patient to Tshilidzini regional hospital whereas William Eddie refers their patient to Donald Fraser Hospital.

3.5.2 Sampling of participants

A sample sized in this study was determined using Slovans formula and equalled to 264 including 10% of nonresponse rate. Then, finally a simple random technique was employed to select female nurses to be part of the study from each facility. Each group of nurses from four selected facilities was represented to ensure that there is no bias, these groups of female nurses include Registered nurses (RN), Enrolled nurses (EN), and Enrolled Nursing Auxiliary (ENA).

Table 1: Human resource population at public health institutions

Name of Institution	Total number of female nurses per Hospital/ CHC	Number of female nurses per category
Tshilidzini Hospital	280	RN=120 EN=90 ENA=70
Donald Fraser Hospital	250	RN=116 EN=85 ENA=59
William Eddie CHC	27	RN=13 EN=8 ENA=6
Thohoyandou CHC	38	RN=18 EN=12 ENA=8
Total	595	

3.5.3 Sample Size

A sample size in this study was determined using Slovans formula and equalled to 264 including 10% of nonresponse rate.

Where: n=number of samples, N= Total population (595) and e= Error margin (5%= 0,05) Assuming 95% confidence interval.

$$n = N \div (1 + Ne^2)$$

$$n=595 \div (1+595 \times 0,05^2)$$

$$n=595 \div (1 + 595 \times 0,05 \times 0,05)$$

$$n=595 \div (1+595 \times 0,0025)$$

$$n=595 \div (1 + 1,4875)$$

$$n=595 \div 2,5$$

$$n= 238$$

Then 10% of non-response added

$$n=10 \div 100 \times 238 = 24$$

$$n=24$$

Therefore, number of sample size is equalled to 264

3.6 Inclusion criteria

- Female nurse
- 3 years working experience
- Permanently employed
- Aged 25-65years
- Consented to participate

3.7 Exclusion Criteria

- Female nurses who had done hysterectomy
- Less than 3 years working experience
- Below the age of 25 years

3.8 Data collection

Data collection was carried out after approval was granted by the University Research Ethics Committee (SHS/21/PDC/07/0505) and permission to conduct the study was granted by Department of Health and to public health institutions involved in the study. Then, researcher first met with managers within the hospital or health centre selected for permission to meet with respondents in their respective ward to explain the project to the respondents and what is expected from them and this was done in their respective wards. The idea of meeting before conducting data was to ensure that there is full co-operation and not to surprise respondents.

Then, appointment was made to visit the respondents during their lunch time. The objective, aim and benefits were outlined and explain to the respondents to gain trust and no incentives was given after the study. Respondents who were willing to participate were given opportunity to be part of the study. Respondents in this study were female nurses who worked at the public hospitals and in public health care centre.

3.8.1 Measurement instrument in data collection

Data was collected with the aid of structured questionnaire prepared in English language. Pre-tested questionnaires were used and were self-administered to obtain data about cervical cancer screening among female nurses. Data collection instrument was developed by considering the objective of the study. The items consisted of socio demography characteristics (Section A), knowledge on cervical cancer screening (Section B) and the last item comprises of attitude and practice of cervical screening towards participation to cervical screening (Section C). In section B, the knowledge of female nurses was assessed and if respondent answers are $< 60\%$ was considered as not knowledgeable towards cervical cancer screening and those respondents who scored $\geq 60\%$ were considered knowledgeable. Attitude towards and practices of cervical cancer screening was assessed respondents who scored $< 60\%$ were considered to have negative attitude and those who score $\geq 60\%$ will be considered to have positive attitude.

3.8.2 Pre- test

Pre- test was carried out by researcher using structured questionnaire for trial and to test the method and to determine whether it is appropriate for investigation. The number of respondents who were involved in the pre-test were 10 respondents and were female nurses working at Elim Hospital. Respondents were sampled and selected according to their knowledge and experience in the work field of public health. Prior the completion of questionnaires each respondent was requested to sign the consent form and assured of their confidentiality. All respondents were informed that data collected will be disposed securely and personal data will be kept confidential. Respondents who were involved in pre-test were included as part of main study. Respondents who were involved in pre- test were not included as part of the main study as their hospital was not sampled. Preliminary analysis assisted the researcher that method used was appropriate for the study. Pre- testing the questionnaire was helpful, because ambiguous questions were corrected like question 17 which was talking about "How frequent is premalignant screening on cervical cancer", which was changed to frequency of cervical cancer screening test.

3.9 Validity and Reliability

3.9.1 Validity

According to Heale & Twycross (2015), validity is defined as the extent to which a concept is accurately measured in a quantitative study. The researcher will ensure validity through the following:

Face validity- In this study, researcher ensured validity by seeking experts' opinions about the instruments such as questionnaires measure the concept intended to measure.

Content validity- The researcher paid attention to overall instrument used and ensured that the instrument adequately covers all the content that it should with the respect to the variable. The questionnaires used covered entire domain in more depth including socio- demographic variable, cervical cancer knowledge among nurses, determine attitude and practice among female nurses.

Construct validity- With the utilisation of the instrument or questionnaires as tool to measure the study, the researcher draws and develop test score related to the concept being studied.

3.9.2 Reliability

According to Heale & Twycross (2015), validity is defined as the extent to which a concept is accurately measured in a quantitative study. A participant completing an instrument meant to measure motivation should have approximately the same responses each time the test is completed. The researcher used questionnaires in this study to measure and assesses the knowledge reliability relates to the consistency of measure. Then, to achieve reliability in this study, researcher adopted pre-test. The preliminary analysis and results assisted the researcher that method used was appropriate for the study and discarded questions which produced similar results or not appropriate for the study.

3.10 Plan for data management and analysis

3.10.1 Data management

Structured questionnaires were used to collect data and collected data was later interpreted in a form of statistic for correct measurement of collected data. Confidentiality was maintained by not including participants name on questionnaires. Data collected was not made available to any other person other than the authorized person by researcher and was kept on storeroom locked.

3.10.2 Data analysis

Data analysis entails categorising, ordering, manipulating, and summarising the data, and describing them in meaningful terms (Brink, Van der Walt & Van Rensburg 2012). Collected data was cleaned or verified before entered the system by researcher. Questions with errors or that were incomplete were not entered the system. Data technician was employed to capture verified data into a standardized. To serve the requirements of this study an appropriate statistical analysis technique was used, namely the Social Package for Social Science (SPSS version 26). Therefore, it was interpreted in a form descriptive and collected data was summarized so that it has some meaning to the readers in the research report. Statistical comparison was included among three categories of female nurses on the knowledge of cervical cancer, and attitude and practice about cervical screening.

3.11 Ethical considerations

According to Brink, van der Walt and Van Rensburg (2012), there are three fundamental ethical principles that guide the research during the research process which includes respect for persons, beneficence and justice. These principles are based on the human rights that need to be protected in research at all the times. Some of these principles are namely right to self-determination, privacy, anonymity and confidentiality, fair treatment and to be protected from discomfort and harm.

3.11.1 Permission

The research was undertaken in accordance with the guidelines set out by the Human and Clinical Trials Research Ethics Committee (HCTREC) and when approval was granted, requisition for permission to conduct a study from Provincial Department of Health, Vhembe district of health was made by the researcher. The researcher therefore request permission to conducts study in all four public health institutions which are Tshilidzini Hospital, DFH, Thohoyandou CHC and William Eddie CHC. This was to ensure that all ethical standards are adhered to at all cost.

3.11.2 Informed Consent

Informed consent is an agreement by prospective subject to participate voluntarily in study after the participants has given information about the study (Burns & Grove, 2012). Respondents were provided with accurate information regarding the study and prior signing of consent form. All respondents were clearly informed verbally and in writing of what research entails and what is expected of them. The consent form used included the researcher phone and also supervisor phone number in case the participant might havesome questions to ask.

3.11.3 Privacy

The researcher ensured or maintained confidentiality by ensuring that no person or unauthorized person could get accessed to study data by creating password on computer containing research and ensuring anonymity by not revealing identities or names on the questionnaires or on the research report.

3.11.4 Anonymity and Confidentiality

Anonymity was ensured by not including respondent identities, such as name, cell phone number or id number on the questionnaires and their names remained anonymous. Researcher also maintained confidentiality by ensuring that collected data were kept under lock and key. Computer hard drive had password so that no unauthorized person could gain accessed to collected data

3.11.5 The right to fair treatment

All respondents who were willing to participate and who met the inclusion criteria were given opportunity to participate in the study. Respondents were equally treated.

3.12 Delimitation of study

The study has some limitations which includes resource constraints (time, money for data collection), that's why it the study was conducted in one district among four hospitals, so the results cannot be generalized. The data was collected using the self-administered questionnaire, and that may affect the report and this method is self-reported history, which may not give the actual picture due to inaccurate recall bias. The sample/target group was health care providers and because the topic is sensitive, it could lead to social desirability bias and lastly study design is descriptive cross-sectional study which may not establish temporal relationships between exposure and outcome measures.

3.13 Conclusion

This chapter outlined research methodology and research design. It covered the methods, technique employed within the study including research design, study setting, sampling method, sample size, data collection and analyses used. The following chapter focus on analyses of data and presentation of findings following the structure of the data collection instrument used.

CHAPTER 4

DATA ANALYSIS AND PRESENTATION

4.1. Introduction

The present study was conducted is to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province. Specifically, the study aimed to:

- Assess cervical cancer knowledge of female nurses in public health institutions in Vhembe District, Limpopo province
- Describe attitudes and practices about cervical cancer screening among female nurses in public health institutions in Vhembe District, Limpopo province
- Identify barriers to cervical screening among female nurses in public health institution in Vhembe District, Limpopo province.

In this chapter, the findings are presented following the structure of the data collection instrument used. The results are presented in three section which includes the demographic information, knowledge on cervical cancer screening, attitudes and practices regarding cervical cancer screening. The data was collected form 264 professional nurses from four different hospitals and the response rate was 100%. The data from the questionnaire was captured on excel and exported to SPSS version 26.0 in which the descriptive statist was employed.

4.2 Section A: Demographic characteristics of the study respondents

Table 2 below displays results on demographic variables of the study respondents. According to the results on Table 2, most respondents 117 (44.3%) where drawn from Donal Fraser Hospital followed by 31.8% from Tshilidzini Hospital and the minority were from Thohoyandou Health Centre (14.3%) and William Eddie Hospital (9.8%) respectively. The age range of study respondents was dominated by 46-55 years who constituted and 39.8% (n=105), however the minority were between 36-45 years at 8.7% (n=23) and the 56 years and above who were 17% (n=45). According to the data collected it was revealed that majority of the respondents were holders of certificates 38.3 % (n=101), while the number of post-graduate 3% (n=8), degree 25.4% (n=67) and diploma 33% (n=88). Regarding professional levels, the majority (67%) of the respondents where registered professional nurses, followed by enrolled assistant nurses (18.9%) and lastly the enrolled nurses who constituted 14%. Analysis of participant's marital status revealed that majority 213 (80.7%) were married while the minority 36(13.6%) were divorced followed by 15(5.7%) widowed. In terms of parity, Majority 34.8% (n=92) of the

study respondents were having five children and above, while one to two children were 16.3%(n=43), three to four children were 33.7(n=89), however 15.2%(n=40) had never had children in their lives. Although then respondents were Africans, a high proportion of participants 74.2% (n=196) were Christians whereas 25.8% (n=68) of participants were from the African orthodox.

Table 2: Demographic information of respondents

Characteristics	Frequency (n)	Percentage (%)
Health Facility		
Thohoyandou Health Centre	38	14.04
Tshilidzini Hospital	83	31.4
Donald Fraser Hospital	117	44.3
William Eddie Hospital	26	9.8
Total	264	100.0
Age of respondents		
25 -30years	30	11.4
31-35 years	61	23.1
36-45 years	23	8.7
46-55 years	105	39.8
56 years and above	45	17.0
Total	264	100.0
Professional Qualifications		
Diploma	88	33.3
Degree	67	25.4
Postgraduate	8	3
Certificate	101	38.3
Total	264	100.0
Professional Level		
Registered Professional Nurse	177	67.0
Enrolled Nurse	37	14.0
Enrolled nursing assistant	50	18.9
Total	264	100.0
Duration of Service		
Less than 1 Year	8	3.0
1 to 3 years	34	12.9

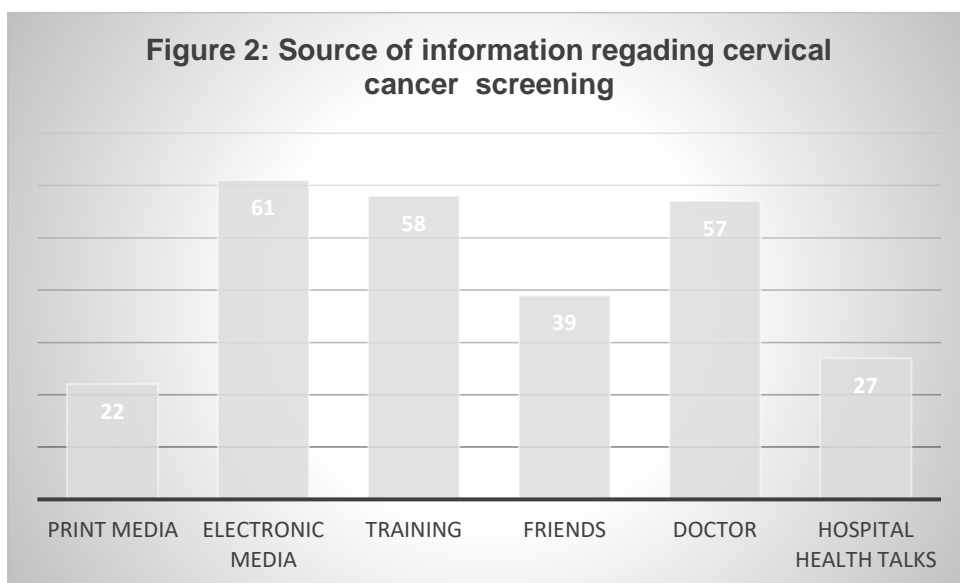
3 to 5 years	14	5.3
5 years and above	208	78.8
Total	264	100.0
Marital Status		
Married	213	80.7
Divorce	36	13.6
Widowed	15	5.7
Total	264	100.0
Parity		
Nullipara	40	15.2
1 to 2 children	43	16.3
3 to 4 children	89	33.7
5 children and above	92	34.8
Total	264	100.0
Religion		
Christianity	196	74.2
Orthodox	68	25.8
Total	264	100.0

4.3. Section B: Knowledge on cervical cancer and screening

This section of the study presents the knowledge of respondents regarding cervical cancer screening and the graphs and figures below will cover all the knowledge aspects. The knowledge regarding cervical cancer was evaluated looking at the source of information, availability of the service, knowledge of risk factors, vulnerability, symptoms of cervical cancer, prevention of it and the eligibility for screening.

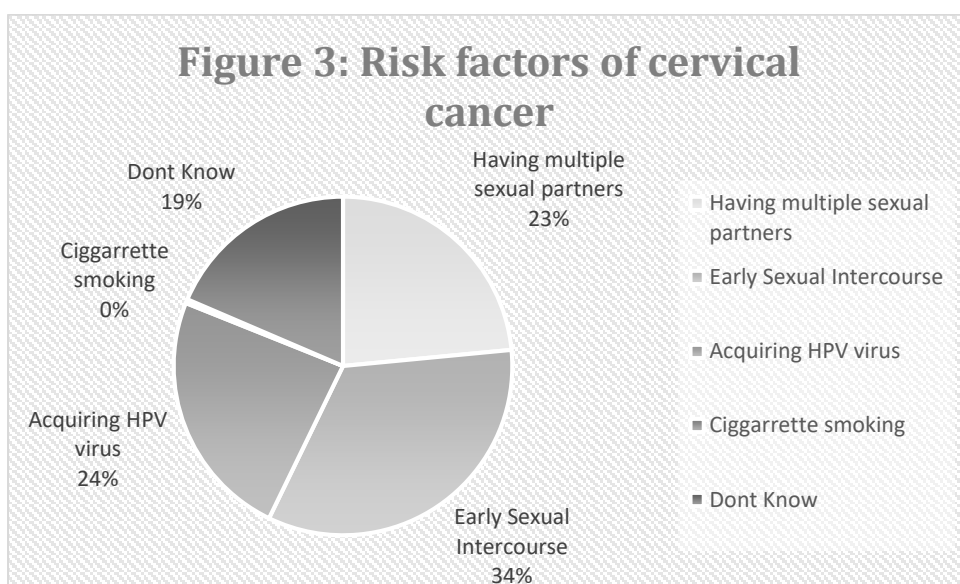
4.3.1 Sources of information regarding cervical cancer and screening

The present study revealed that majority 79.9% (n=211) of respondents were having screening services for cervical cancer available in their facility however 20.1% (n=53) denied the sentiment. Below on figure 2 it is illustrated that of all the sources of information regarding cervical cancer screening, many of them have heard of it through electronic media 23.1% (n=61), training 22% (n=58) and from the doctor 21.6% (n=57). However, the minority established that they heard it through their friend 14.8% (n=39), hospital talks 10.2% (n=27) and from print media 8.3% (n=22). Sources of information are varied now with more people having access to technology and electronic media.



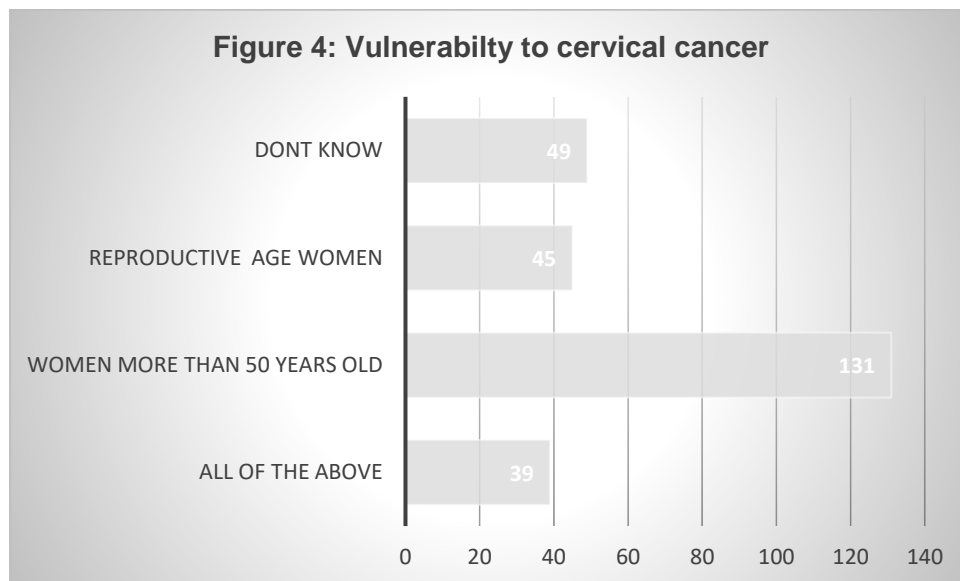
4.3.2 Risk factors regarding cervical cancer

As shown on figure 3 below, the study established that the high proportion of the study respondents identified early sexual intercourse 34% (n=89), acquiring HPV virus 24% (n=63) and having multiple sexual partners 23% (n=62) as the major risk factors of cervical cancer. However 19% (n=49) of female nurses indicated that they don't know and 0% (n=1) identified cigarette smoking. Risks factors of cervical screening are usually associated with sexuality rather than other personal factors.



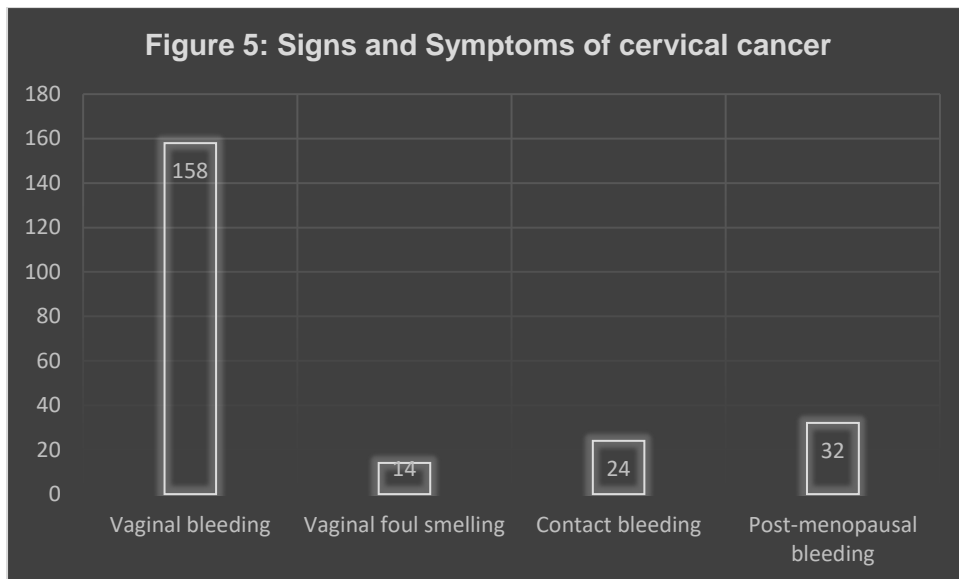
4.3.3: Knowledge regarding vulnerability to cervical cancer

The figure 4 below focus on the knowledge of regarding the female nurses with regards to vulnerability of cervical cancer and it was therefore established that the women more than 50 years are the majority (n=131;49.6%) who are vulnerable. Furthermore, it was also indicated that the reproductive women are prone to cervical cancer, however some (n=39; 14.8%) indicated that all age groups and a certain small percentage (n=49; 18.6%) was not informed. The prevalence of diseases and their landscape is affected by changes in lifestyles.



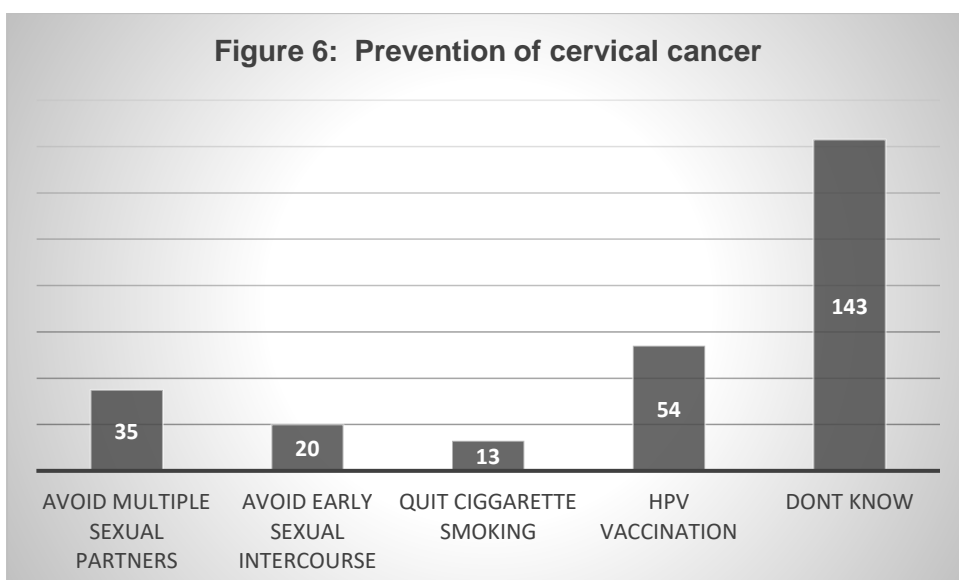
4.3.4 Knowledge regarding signs and symptoms of cervical cancer

Figure 4 below illustrated the signs and symptoms of cervical cancer, and the majority (n=158) of respondents indicated that vaginal bleeding is the main symptom followed by post-menopausal bleeding (n=32), contact bleeding (n=24) and lastly vaginal foul smelling (n=14). Female nurses had more knowledge with regards to sign and symptoms of cervical cancer.



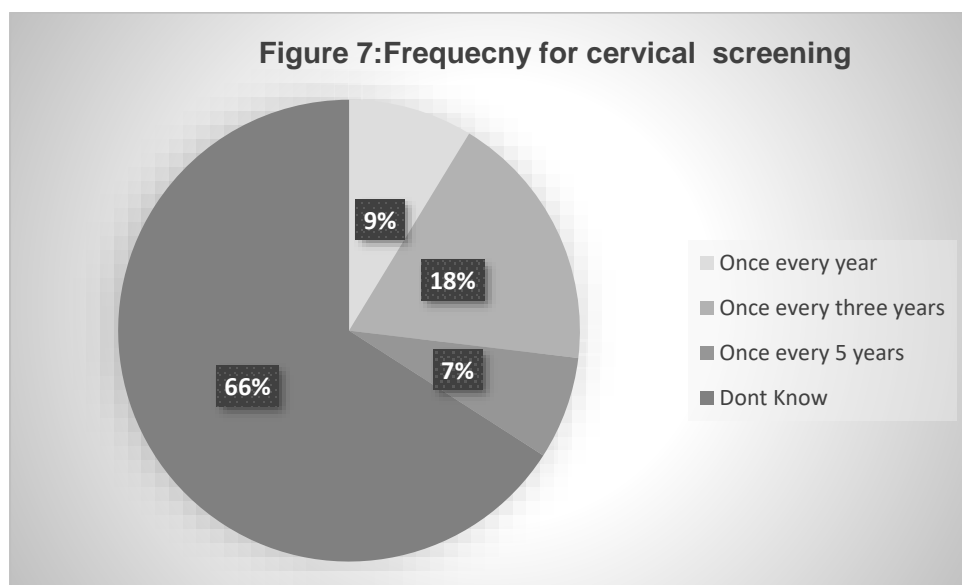
4.3.5 Knowledge regarding prevention of cervical cancer

As shown in figure 6 below, the study has indicated that the majority 54.2% (n=143) of respondents were not aware of the prevention methods of cervical cancer. However only few identified HPV vaccination 20.1% (n=53), avoidance of multiple sexual partners 13.3 (n=35), avoidance of early sexual intercourse 7.6% (n=20) as well as quitting of cigarette smoking 4.9% (n=13) as method to prevent cervical cancer. Knowledge is power and more awareness is more important, this can be achieved by information dissemination by health workers and community health care workers.



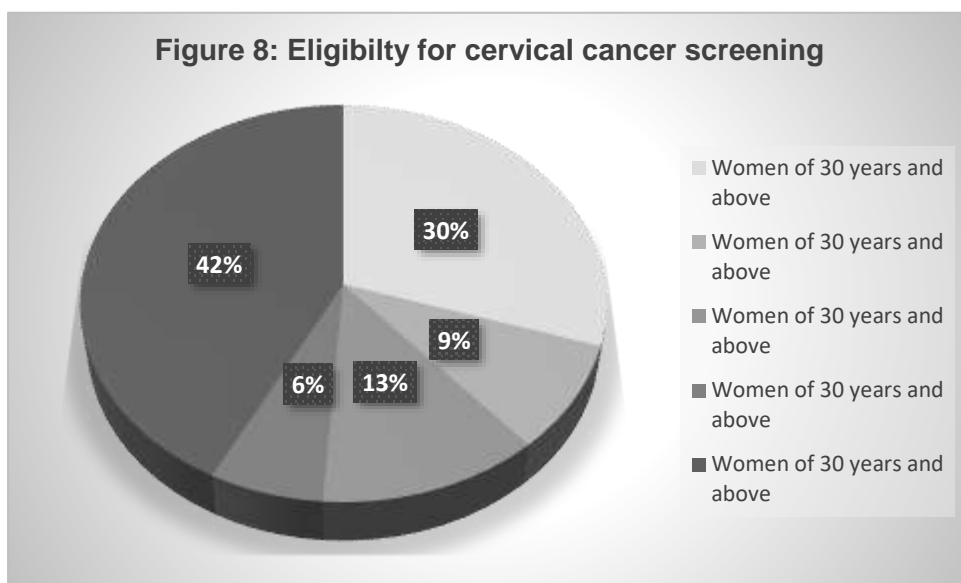
4.3.6 Knowledge regarding ways of cervical cancer screening and frequency

The well-known methods for screening cervical cancer were revealed by many (n=209; 79.2%) as the Pap smear, however 19.8% did know of any method of cervical screening. In terms of the frequency for cervical cancer screening, the figure 7 shows that 66%(n=174) don't know and only 18%(n=48) suggested once every three years followed by 9%(n=23) who indicated once in a year and last the 7%(n=19) who attended that once in five years. Screening and follow-up are important and should be encouraged, women should not be comfortable and relax after a negative test.



4.3.7 Knowledge regarding the eligibility for cervical cancer screening

According to the figure 8 below, the study revealed that majority of respondents suggested that they don't know about the eligibility of cervical cancer screening, however a considerable 30% indicated that women of 30 years and above are eligible for cervical cancer screening. Some small percentage indicated that elderly women (13%) and women aged less than 21 years (9%) and lastly some mentioned others (6%). Eligibility should also be related with risk factors and the current epidemiological reports of what the current status quo may be.



4.4 Section C: Attitudes and practices regarding cervical cancer and screening.

As illustrated on table 3, the attitudes and practices well as barriers regarding cervical cancer and screening are presented. The questions were formulated in five Likert scale and the frequencies and percentages are presented as well. This section again presents how the respondents think about cervical cancer and screening as well as their perceptions about it

4.4.1 Attitudes regarding cervical cancer screening.

Majority of female nurses (42.4%) strongly agree that cervical cancer is killer, a considerable higher percentage remained neutral/undecided (43.6%), with lowest percent strongly disagree (4.2%). A higher proportion of about 55.7% indicated that screening is key in preventing carcinoma of the cervix and 23.9% of them remained undecided. In assessing if whether screening causes no harm to the clients, majority of about 73.9% remained undecided and 15.9% who disagreed should also be noted. The study respondents disagreed and strongly disagreed to be screened if it is paid for, and many of them (47.3%) denied that they are vulnerable to the acquiring cervical carcinoma. Although 71.2% of the respondents think screening for cervical cancer is embarrassing, many (46.6%) of them as well believe that screening can detect cervical changes before it becomes cancer. A considerable number revealed that they are scared to consult if they develop cervical and regarding screening, the respondents of about 23.5% agreed to be screened by male doctors, however 48.5% strongly disagreed. Attitudes are great contributors to positive health perception while a negative perception can contribute to lack of self-care/poor perception of health.

Table 3: Attitudes regarding cervical cancer screening

Questions	SA		A		N		D		SD	
	N	%	n	%	N	%	N	%	N	%
Do you believe cervical cancer is a killer in the country	112	42.4	12	4.5	115	43.6	14	5.3	11	4.2
Do you believe screening help in prevention of carcinoma of the cervix?	147	55.7	32	12.1	63	23.9	7	2.7	15	5.7
If screening is paid, will you screen?	16	6.1	64	24.2	42	15.9	68	25.8	74	28.0
Do you perceive any adult woman including you can be acquiring cervical carcinoma?	125	47.3	21	8.0	60	22.7	32	12.1	26	9.8
Do you believe screening can detect cervical changes before it become cancer?	123	46.6	--	--	2	0.8	61	23.1	78	29.5
Do you think to go through screening procedure is an embarrassment?	188	71.2	56	21.2	7	2.7	6	2.3	7	2.7
If you screened, will you allow male doctors to examine your cervix?	62	23.5	41	15.5	17	6.4	16	6.1	128	48.5
If you develop cervical cancer, will you consult doctors without being scared?	26	9.8	45	17.0	63	23.9	48	18.2	82	31.1

4.4.2: Practices regarding cervical cancer screening

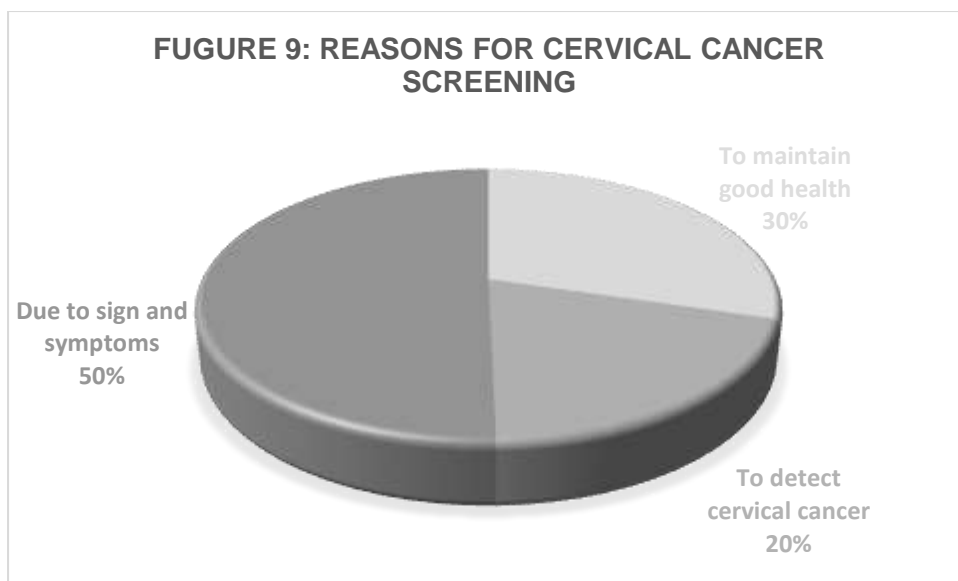
According to the study findings 83% (n=218) of them have screened for cervical cancer and only 17% (n=46) did not and all of them reported that the screening was done using Pap smear. In Table 4, Participants who were registered professional were more likely to undergo cervical cancer screening and those who were enrolled nurse or nursing assistant who were less likely to have been screened.

Table 4: Practices of cervical screening among female nurses

Questions	Female nurses	Yes	%	No	%
		(n)		(n)	
Have you ever been screen before?	Professional nurse	117	44.3	05	1,8
	Enrolled nurse	60	22.7	11	4.2
	Enrolled nursing assistant	41	15.5	30	11.4
Total		218	83	46	17
Total number of respondents and percentage		N=264 Percentage=100%			

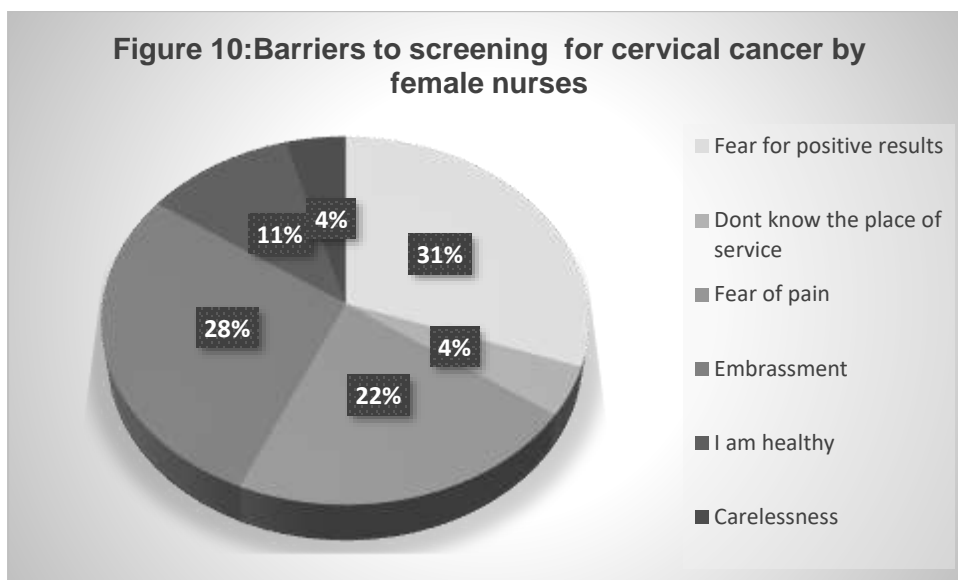
4.4.3 Reason for cervical cancer screening

Regarding those who have screened, they further gave three reasons for screening which include detection of cervical cancer (20%), to maintain good health (30%) and lastly the majority was dues to signs and symptoms (50%) of cervical cancer. The study established of all the screened nurses the majority (68%) screened and the minority (32%) screened more than once. And many (n=190) of them had last careened more than three years ago with the some (n=27) screened within the three years. Health behaviour should be a lifestyle, especially reproductive health should be given a personal priority.



4.4.4 Barriers to screening for cervical cancer by female nurses

For the minority 17% (n=46) who did not screen for cervical cancer, the following graph on figure 11 shows the reason for not screening. The most cited reason was fear of positive results 31% (n=14), it is embarrassing 28% (n=13) and lastly fear for pain 22% (n=10). However, some minority cited unavailability 4% (n=2) of services, I am healthy 11% and carelessness 4% (n=2).



4.4.5 Reasons for not recommending cervical cancer screening to others

The current study shows 55.3% (n=26) female nurses cited embarrassment as reason for not recommending cervical screening to others, while others report time consuming 23%(n=11)

and fear of pain 22%(n=10). Communicating and sexual health issues and benefits of screening should be made public open discussions among peers and women groups to increase acceptance. The results are consistent with the studies conducted by Seyoum (2017) and Alali et al (2016) which reported fear of pain, embarrassment and time consuming.

Table 5 Reason for not recommending cervical screening to others

Reason for not recommending pap smear to other (N=47)	Number	%
Time consuming	11	23.4
Embarrassment	26	55.3
Fear of pain	10	21.3
Total	47	100

4.4.6 Statistical test

The following tables presents the crosstabulation which was done to establish the relation/association of demographic variables and the study specific objectives.

The study found a statistically significant relationship between the age range of the respondents and the knowledge regarding the risk factors of cervical cancer, nurses who were between the ages of 25 to 30 years were more informed about risk factors, as 17% (n=46) reported that HPV virus is risk factor for cervical cancer and 5% (n=14) report that having multiple sexual partner is contributory factor. This could be associated with young nurses having access to electronic information and they still have more information as they are coming from University or College. Another group of nurses who reported having multiple sexual partner as contributory factor for cervical cancer is nurses who were between age of 31 to 35 years and 14% (n=37) believe having multiple sex partner is risk for having cancer while 12% (n=31) believe having early sexual intercourse is a risk for developing cancer. The study reveals the age group which were less knowledgeable as from between 46 to 55 years where 5%(n=12) reported they don't know the risk factors for cervical cancer and followed by age group of 56 years and above where 14% (n=37) also reported that they don't know risk factors of cervical cancer.

Table 6. knowledge of female nurses regarding risk factors of cervical cancer versus their age

What are the risk factors of cervical cancer?		Df=16, $\chi^2=272.804$, p=0.000									
		Having multiple sexual partners		Early Sexual Intercourse		Acquiring HPV virus		Cigarette smoking		Don't Know	
		N	%	n	%	N	%	n	%	n	%
Age of Respondents	25-30 years	14	5	0	0	46	17	1	0,4	0	0
	31-35 years	0	0	0	0	17	6	0	0	0	0
	36-45 years	37	14	31	12	0	0	0	0	0	0
	46-55 years	7	3	29	11	0	0	0	0	12	5
	56 years and above	4	2	29	11	0	0	0	0	37	14
Total		62	24	89	34	63	23	1	0	49	19
Total number of respondents and percentage		N=264 Percentage=100%									

In Table 7, the study show significant relationship between demographic factors and uptake of cervical screening by female nurse. Demographic variables were analyse for their role and their influence on cervical screening. The first variable to be analyse was age, which shows that majority 35.9% (n=95) of female nurses who had pap smear where between the ages of 46 to 50 years, while 25 to 30 years had low uptake of cervical screening at 3.8%(n=10). The study also revealed that parity is a significant factor for cervical screening. Majority 34,1% (n=90)of female nurses who had Pap smear were nurses with five or more children, while female nurses without children had low uptake on cervical screening. Furthermore, the study results shows that female nurses with no children who did not undergo cervical screening was at 13.6% (n=36) much high than the rest of the groups. This shows that female nurses with one or more children were more likely to undergone cervical screening as to compare with female nurses with no children.

Table 7: Factors associated with uptake cervical screening among female nurses being studied

Characteristics	Have you ever been screen before?			
	Yes (n)	(%)	No (n)	(%)
Age of respondents				
25 to 30 years	10	3.8	20	7.6
31 to 35 years	41	15.5	7	2.7
36 to 45 years	32	12.1	4	1.5
46 to 50 years	95	35.9	10	3.8
56 years and above	40	15.2	5	1.9
Total	N=264 Percentage=100			
Marital Status				
Married	180	68.2	33	12.5
Divorced	27	10.2	9	3.4
Widowed	11	4.2	4	1.5
Total	N=264 Percentage=100			
Qualification				
Diploma	85	32.2	3	1.1
Degree	66	25	1	0.4
Postgraduate	7	2.7	1	0.4
Certificate	60	22.7	41	15.5
Professional level				
Registered nurse	117	44.3	05	1.8
Enrolled nurse	60	22.7	11	4.2
Enrolled nursing assistant	41	15.5	30	11.4
Total	N=264 Percentage=100			
Parity				
Nullipara	4	1.5	36	13.6
1 to 2 children	39	14.8	4	1.5
3 to 4 children	85	32.2	4	0.4
5 children and above	90	34.1	2	0.4
Total	N=264 Percentage=100			

4.5 Conclusion

In this chapter, the findings were presented following the structure of the data collection instrument used. The results were presented in three sections which include the demographic information, knowledge on cervical cancer screening, attitudes and practices regarding cervical cancer screening. This chapter also identified certain barriers which are associated with low uptake of cervical screening by female nurses which include embarrassment, fear of pain, carelessness, others they reported that they don't know place of service and while others reported that they feel being healthy. The following chapter will deal with discussion of findings.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 Introduction

The previous chapter presented the results of the study in detail based on the objectives of this study. The main purpose of this study was to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province. Specifically, the study aimed to:

- Assess cervical cancer knowledge of female nurses in public health institutions in Vhembe District, Limpopo province
- Determine attitudes and practices about cervical cancer screening among female nurses in public health institutions in Vhembe District, Limpopo province
- Identify barriers to cervical screening among female nurses in public health institution in Vhembe District, Limpopo province.

The discussion is organised in five sub-sections based on the objectives of this study: Socio-demographic characteristics, knowledge of cervical cancer and screening, attitudes, and practices as well as barriers to cervical screening among female's nurses.

5.2. The socio-demographic characteristics of respondents

More than half of the participants in the current study were between the ages of 46 to 56 years and a prior study in women's reproductive health found that older female nurses sought reproductive health services more frequently than younger female nurses. According to Heena et al., (2019) buttressed by attesting that it is highly recommended to therefore have Pap smear done in women above 21 years of age and thus, HPV vaccine can be taken by women until the age of 26 years.

Given that majority of female nurses who had screen for cervical cancer were older and married, it is in therefore in contrary of Gebru, Gerbaba and Dirar (2016), who revealed that older women are more likely not to screen compared to younger women and it was suggested that single women showed more care about issues relating to their reproductive health and therefore sought more knowledge and shows concern about their reproductive health. They also support that some of the factors that caused married women and, women married to seek the consent of their husbands. Furthermore, a study done by Alali et al (2016) reported lack of consent by husbands being one of the reasons why married women did not seek reproductive health services. Most nurses in this study are older and married, implying that

they are sexually active. Despite the knowing that several sexual partners are a risk factor for cervical cancer, we did not ask the participants that intimate question because we believed it would be insulting to the South African society. Most of the participants had five years or more of work experience, it is assumed that they are educated about cervical cancer because they had been active in nursing for a long time at their various institutions. This implies that the data collected in this study is credible, as it was solicited from respondents with a wealth of experience on issues revolving around nursing. The study revealed a better number of professional nurses with diplomas, although few were degreed, and this level of qualifications is therefore expected to enhance knowledge regarding cervical cancer and screening. The study by Utoo, Ngwan, and Anzaku (2013) consistently found that women with low levels of education that might have tended not to see the need for cervical cancer screening and women with a higher level of education tended to be well informed of the risk in not seeking cervical cancer screening.

In a sharp deviation from the above expectation, Gebreegziabhaer, Asega and Berhe (2016) similarly indicated that more women with primary level education were found to frequently utilise the healthcare reproductive health services than women with secondary and tertiary level education. The present study findings indicate that all respondents were all employed professional nurses, thus indicating an ability to afford the cost of reproductive health care services including cervical screening services, if the screening comes at a little fee. Lyimo and Beran (2021) cemented this assertion by propounding that unemployed woman, tended to rely on their husbands for money to pay for reproductive health services. In cases involving single unemployed women, the inability to afford reproductive health care services could serve as an effective restriction on cervical cancer screening. In this regard, it can then be concluded that affordability is a significant factor in access to health care for women, and employment enables women to better afford health care, with the result of higher utilization of reproductive health services amongst employed women. Furthermore, the present study showed that most of the study respondents had five children and above.

5.3 Knowledge regarding cervical cancer and screening

It is posited that adequate knowledge about cervical cancer and its screening is crucial for professional nurses as it determines their screening practice of cervical cancer. The present study established a moderate level of knowledge regarding cervical cancer and its screening. The aspects of knowledge were divided into knowledge regarding risk factors, prevention, vulnerability, sign and symptoms as well as screening eligibility and frequency. The current finding on the presented that early sexual intercourse and having multiple sexual partners was the prime cause of cervical cancer and the level of knowledge was higher than the study

conducted in Tanzania which was 40%, however an assumption excuse was given, that maybe the low level was thus that the study population included only the nursing cadre without the doctors. Moreover, many similar studies concurred with this present study's higher level of knowledge and this includes Ethiopia which reported 87% and Nigeria reported 97% (Dulla, Daka, & Wakgari, 2017). The differences could be explained by either true reflection of more knowledge in their geographic area or the multiple groups of respondents and not only nurses involved might pull the results to be skewed to one side. Utoo, Ngwan, and Anzaku, (2013) further highlighted that the low proportion of healthcare workers who are knowledgeable on causes of cervical cancer poses a risk of poor understanding of cancer disease in the community. The present study showed that there was a difference in knowledge regarding vulnerability cervical cancers among nursing the cadres, where degreed nurses had more knowledgeable than the ones with diplomas and certificates. This could be explained by the nature of training received during college education and probably lack of on-going mentorship after graduation (Berhanu, Mamo, Tewolda & Beshir, 2019). Although the study respondents have shown better on some knowledge aspects, it is worrying that the study revealed low levels of knowledge on prevention and eligibility for cervical cancer screening.

5.4 Attitudes of professional nurses regarding cervical cancer and screening

Healthcare workers' attitudes on screening practices play a major role in increasing of the cervical cancer screening uptakes (Suantika, Hermayanti & Mukami, 2021). The study found that most respondents had favourable attitudes on some cervical cancer screening practices as they revealed that cervical cancer is a killer, screening is key and that they feel vulnerable to it. These findings were also previously observed in the study conducted in Ethiopia (Gebreegziabher, Asega & Berhe, 2016) where a high number of participants acknowledged that screening was important and was a necessary component to be considered in women health.

Present study also shows majority 25.8% (n=68) female nurses strongly disagree to pay for cervical screening service, while 28% (n=74) disagree. These results are congruent with the observation in South-eastern Nigeria by Heena et al (2019) where lack of awareness and fear contributes to above 50% of nurses not opting for cervical cancer screening. Heena et al (2019) further posited that, this reveals a lack of awareness campaigns in the community about the disease and the failure of the health systems to effectively disseminate information to the consumers of healthcare services. As evidenced by different literatures, including Mkhonta and Shirinde (2021), high level of awareness of cervical cancer demonstrated by health professionals did not translate to change of attitude and proper utilization of the screening

services. This present study has demonstrated that female nurse's negative attitudes could deter them from participating cervical cancer screening.

The current study also shows that 6.1% (n=16) female nurses disagree, while 48.5% (n=128) strongly disagree to be examined by male doctor. This negative attitude could be due to the lack of trust, confidence, and embarrassment where female nurses partially know the male service providers.

5.5 Practices of female nurses and barriers regarding cervical cancer screening

The current study shows that majority 83% (n=218) of the respondents had undergone cervical cancer screening, while 17% (n=46) indicated that they have not utilize cervical screening. The majority of nurses who have been screened for cervical cancer mentioned the reasons for screening which include maintaining good health, to detect cervical cancer, due to signs and symptoms of cervical cancer. However, for the minority 17% (n=46) who did not screen pointed out that they felt being healthy, fear pain and embarrassment from the procedure. The present study screening rate was higher than the ones reported in Ethiopia where only 9.6% female nurses had screen for cervical cancer (Seyoum, 2017).

The present study also shows that parity is a significant factor which influence utilization of cervical screening service. Majority 34.1% (n=90) of female nurses who had screen for cervical cancer had five or more children and this might be due to considering themselves at risk of cervical cancer and to maintain good health. Furthermore, the minority 1.5% (n=4) were nullipara with no children, while those with one to two children and had Pap smear were 14.8% (n=39).

The study shows that majority 35.9% (n=95) of female nurses who had pap smear where between the ages of 46 to 50 years, while 25 to 30 years had low uptake of cervical screening at 3.8%(n=10). This findings is consistent with study conducted in Nigeria by Awoyesuku (2019), the study found that female nurses younger than 35 years were less likely to make themselves available for cervical screening. Additionally, the present study did not consider cultural beliefs as barriers to cervical cancer screening. It is therefore key to highlight what Rosser, Njoroge and Huchko (2016) posited, regarding Cultural and religious beliefs towards screening, which includes male spouse disapproval and lack of support were cited as challenges hindering cervical cancer screening. According to Rosser et al., (2016), some cultures believe that screening is evil and unclean; therefore, women from these communities will hardly go for the test. Some husbands also have a negative attitude towards the practice as they do not want their women and wives to be examined on their reproductive parts.

5.6 Conclusion

This chapter focused on the discussion of findings and it outlined the following: Socio-demographic characteristics, knowledge of cervical cancer and screening, attitudes, and practices as well as barriers to cervical screening among female's nurses. The next chapter will deal with summary, conclusion, recommendation and limitation

CHAPTER 6

SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 Introduction

The previous chapter presented discussed the study findings, this chapter therefore aims to present the conclusions derived from the study findings, summary, and recommendations of the study and the limitations of the study.

6.2. Summary of the study

The present study reveal that uptake of cervical cancer can be influenced by various factors which prevent female nurses from screening. The study reveal fear of positive results, embarrassment, and lastly fear for pain as barrier for cervical screening. The study also reveal unavailability of services, and carelessness as contributory factors as well. Age and marital status were also significant variable in this study as majority 35.9% (n=95) of nurses who had screen for cervical cancer were between the age 46 to 50 years and 68.2% (n=180) were married, while female nurses who were between age of 20 to 30 years only 3.8% (n=10) had done cervical screening. Other variables which were significant include parity and professional status. The present study findings also suggest that high parity is associated with high uptake of cervical screening as female nurses with less children had low cervical uptake. The low uptake can be associated with the reason of not feeling at risk for cervical cancer because of their age as they perceived themselves to be younger. Furthermore, the present study showed that there was a difference in knowledge regarding vulnerability cervical cancers among nursing the cadres, where degreed nurses had more knowledgeable than the ones with diplomas and certificates.

6.3 Methodology

A quantitative cross-sectional and descriptive design was used in this study. The target population were female nurses who were sampled from four hospitals. The stratified random sampling method was used to sample all female nurses from all categories at their workplace. Structured questionnaires were used in the collection of data. Throughout the study ethical considerations were adhered to. Descriptive statistics were used in analysing data to identify statistically significant differences between groups involved in this study. The collected data was captured and analysed using SPSS version 26 and all the findings were presented in percentages, frequencies, tables and graphs.

6.4 Purpose

The main purpose of this study was to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province. Specifically, the study aimed to:

Objective 1: Assess cervical cancer knowledge of female nurses in public health institutions in Vhembe District, Limpopo province.

The present study established a moderate level of knowledge regarding cervical cancer and its screening. Although the study respondents have shown better on some knowledge aspects, it is worrying that the study revealed low levels of knowledge on prevention and eligibility for cervical cancer screening.

Objective 2: Describe attitudes and practices about cervical cancer screening among female nurses in public health institutions in Vhembe District, Limpopo province.

The study found that most respondents had favourable attitudes on some cervical cancer screening practices as they revealed that cervical cancer is a killer, screening is key and that they feel vulnerable to it. The present study has demonstrated that female nurse's negative attitudes could deter them from up taking cervical cancer screening. The negative attitude could be due to the lack of trust and confidence, where these clients may partially know the male service providers.

Objective 3: Identify barriers to cervical screening among female nurses in public health institution in Vhembe District, Limpopo province.

The practice of cervical cancer screening revealed that many of the nurses have been screened for the cervical cancer and the reasons or screening included to maintain good health, to detect cervical cancer, it was due to signs and symptoms of cervical cancer and some established that the few who didn't screen pointed out that they felt they are healthy, fear pain and embarrassment from the procedure. Furthermore, Pap smear was the only method and the health care provider related factors encompassed insufficient training or the limited number of trained staff, resulting in them being less confident and reluctant to recommend the Pap smear test for women.

6.5 Application of the Theoretical Framework into the Findings

The theoretical framework of this study was based on the health belief model which was originally developed in the 1950s by social psychologist in the United State public health service to explain the widespread failure of people to participate in programs to prevent and

detected disease. This belief is motivated by five elements which are as follows: perceived susceptibility, perceived seriousness, perceived benefits and perceived barriers, cues to action and perceived self efficacy.

➤ **Perceived susceptibility:**

The study has revealed that about 125(47.3%) of female nurses strongly agreed that any adult women including them could be at risk of having cervical cancer (Table 3). Those who reported feeling at risk of acquiring cervical cancer have undergone cervical screening and those who did not perceive being susceptible to cervical cancer did not perceive the threat of cervical cancer. The perceived susceptibility is a variable under health belief model which predict that women will be more likely to adhere to adhere to cervical cancer screening if they feel that they are susceptible (Tavafian, 2012).

➤ **Perceived severity:**

The study also reveals that about 112(42.4%) of female nurses had strongly agreed that cervical cancer is one of the most killer cancer. Majority of those who undergone cervical cancer screening were professional nurse. This can be associated with the level of education that they might have regarding cervical cancer. Furthermore, having knowledge regarding the importance of cervical screening has been associated with taking action to prevent the adverse outcome of cervical cancer. The study found that there is significant association between perceived severity of cancer and uptake of cervical cancer screening.

➤ **Perceived benefits:**

The study also shows that around 123(46.6%) of female nurses strongly perceive that screening could detect cervical change before it becomes cancer. There is significant relationship between perceived benefits of doing cervical screening and uptake of cervical cancer screening. Those who perceived that screening is beneficial had undergone cervical screening while those who didn't believe screening is beneficial were reluctant in the uptake of screening.

➤ **Perceived barriers:**

The study shows that 2.7% (n=7) female nurses strongly perceive that cervical screening is an embarrassment. The study finds significant association between perceived barrier and uptake of cervical cancer screening

➤ **Cue to action:**

Among screened female nurses, about 74% of those who have screened were recommended to do so by other nurses (figure 10a). This study confirmed that nurses are in position to influence positive health behaviour.

➤ **Perceived self efficacy:**

Among the respondents about 16(6.1%) strongly agreed and 64(24.2%) agree to participate in cervical screening even if screening is paid (table 3).

6.6 Recommendations

Per the findings, and the discussions of this study, it has therefore presented the following recommendations:

6.6.1. Recommendations for policy

The study indicated that professional nurses in the sampled hospitals mostly married in terms of relationship status, young in terms of age, had some level of educated and were mostly employed. These differences in awareness and knowledge levels regarding cervical cancer screening amongst different categories of women do not augur well for holistic improvement in halting the increase in the incidence of cervical cancer, let alone eradicate it. The study therefore recommends that targeted policy measures should be taken to improve awareness and participation of all categories of female nurses with regards cervical cancer screening.

Provide in-service training policy to health care workers, which will refresh their understanding of cervical cancer; provide hands-on demonstrations on how it is performed.

6.6.2. Recommendations for practice

The study recommends that the management of the health ministry, hospitals, NGOs, and other stakeholders improve public education and awareness programmes to raise awareness of cervical cancer screening amongst women nationally. Cervical cancer screening centres should be extended to all district hospitals, clinics, and the health centres by the Ministry of Health. This also means that human, financial and material resources should be made readily available to ensure the sustainability of these centres.

6.6.3. Recommendations for further research

The present study indicated that female nurses attending reproductive health services has some sort of education and therefore had adequate knowledge on cervical cancer and cervical cancer screening. Therefore, it is not likely to have similar knowledge level and education amongst nurses in the rural and small towns of the country. The study therefore recommends further studies in other districts, rural and small towns in the country to be able to gauge awareness levels nationally and determine measures to help improve national awareness and advocacy for the cervical cancer screening the gaps in knowledge among nurses also call for

attention to review the nursing curriculum and modify the teaching on cervical cancer and doctors also should form part of the study.

6.7 Limitations of the study

The strength of the present study is that it is one of the first study done in Vhembe District to determine the knowledge, attitudes, and practices of cervical cancer among professional health workers. However, the study has some limitations which includes resource constraints (time, money for data collection), that's why it the study was conducted in one district among four hospitals, so the results cannot be generalized. The data was collected using the self-administered questionnaire, and that may affect the report and this method is self-reported history, which may not give the actual picture due to inaccurate recall bias. The sample/target group was health care providers and because the topic is sensitive, it could lead to social desirability bias and lastly study design is descriptive cross-sectional study which may not establish temporal relationships between exposure and outcome measures.

6.8 Conclusion

Overall, the study results indicated that professional nurses were knowledgeable about risk factors, symptoms, prevention of cervical cancer and at least three quarters of them have screen for cervical cancer. The present study therefore can conclude that the knowledge of nurses regarding cervical cancer is very good, however their attitudes is not favourable for cervical cancer screening. Importantly nurses with degrees observed to have moderate knowledge level of prevention of cervical cancer compared to their counterparts. The moderate knowledge has as resulted in their attitudes to be slightly negative; the study assume that this can be as a result of the mode of awareness which was revealed as electronic media. The study concluded that fear of pain, time wasting, and embarrassment of the cervical cancer screening are the main barriers to the success of the public health intervention. Therefore, with this position it can be posited that maybe if the mode of information distribution regarding cervical cancer are expanded, it will be easier to reach the desired clients for a success and positive outcome. Since they are frontline health personnel their decision will affect early cervical cancer screening and referral and this area need to be researched more. Irrespective of participants' knowledge, favourable attitudes, and engagement of the patients towards cervical cancer screening, the study concludes that perceived reasons for low usage of cervical cancer screening tests in the health facility were due to lack of awareness of the indication and benefits of cervical cancer screening test.

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ANNEXURES

Annexure A: Letter of information and Consent form

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

LETTER OF INFORMATION AND CONSENT FORM

Title of the Research Study : Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province.

Principal Investigator/s/ researcher: Mathivha Lindelani, Masters in Nursing Science

Co-Investigator/s/supervisor/s: Prof Ramathuba DU and Prof MS Maputle

Brief Introduction and Purpose of the Study: Cervical cancer (CC) is one of the most common malignant diseases of the cervix usually occurring in the 5th and 6th decade of life at mean age of 50 years (Owoeye & Ibrahim, 2013). Mutandwa, Mahapa, Chirasha, Nkiwane & Shangahaidonhi (2017) indicate that human papilloma virus is recognized as the cause of 99% of all cervical cancer worldwide and discovery of human papilloma virus as predominate cause of cervical cancer has necessitated the administration of HPV vaccines as additional means of cervical cancer prevention. However, other co-factors have been found including having multiple sexual partners, early age of onset of sexual activity, increasing parity, current or previous sexually transmitted infection including HIV and smoking. In general, all sexually active women are at risk for developing cervical cancer (Seyoum, 2017).

A purpose of this study is to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province.

Outline of the Procedures : The researcher will use structured questionnaire to collect data in this study so that a large sample of female nurses can be contacted and information is collected in a standardised way. A self- administered and pretested questionnaire will be used to obtain data about cervical cancer screening among female nurses. The questionnaire will be comprised of section A, section-B and section C. First section which is section A will cover socio-demographic variable among female nurses, section B will include Knowledge about risk factors of cervical cancer and knowledge about Pap smear or cervical screening among nurses, and the section C will include attitudes of females nurses towards cervical screening Data will be collected once the approval has been granted by the research committee and

permission to conduct the study has been submitted to Department of Health, and to public health institutions which are involved in the study, researcher will make preparation to explain the project to the participants and what is expected from them. Appointment will be made to visit the participants during their lunch time. The objective, aim and benefits will be outline and explain to the participants to gain trust and that no incentives will be given after the study. Participants who will be willing to participate will be given opportunity to be part of the study. Participants in this study are female nurse who are working at the public hospitals and in public health care centre

Risks or Discomforts to the Participant: No risk

Benefits: The findings will be presented to the Department of Health in Limpopo province and in other workshops, national and international conferences. Findings will be published in the peer review accredited journal for possible publication

Reason/s because the Participant May Be Withdrawn from the Study: participants can withdraw from the study anytime with no penalties.

Remuneration: No remuneration

Costs of the Study: No cost

Confidentiality: Data collected will not be shared with anyone outside research team, such as friends, close relatives or any unauthorized person. No names will be included on the research questionnaires and will not be included when reporting data.

Research-related Injury: There will be no compensation

Persons to Contact in the Event of Any Problems or Queries:

(Prof Ramathuba D.U) Please contact the researcher (0639108079), my supervisor (tel no.) or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

General:

Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population.

CONSENT

Statement of Agreement to Participate in the Research Study:

I..... hereby confirm that I have been informed by the researcher, Mathivha Lindelani, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: __,

I have also received, read and understood the above written information (*Participant Letter of Information*) regarding the study.

I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.

In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.

I may, at any stage, without prejudice, withdraw my consent and participation in the study.

I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant	Date	Time	Signature
I,	
.....			

MATHIVHA LINDELAN herewith confirm that the above participant has been fully

Informed about the nature, conduct and risks of the above study.

Full Name of Researcher

..... Date..... Signature.....

Full Name of Witness (If applicable)

..... Date Signature.....

Full Name of Legal Guardian (If applicable)

.....

Date.....

Signature.....

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level- use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

References:

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Available at:

http://www.nhrec.org.za/?page_id=14

Annexure B: Questionnaire

Date:

Questions	Response	skip
SECTION A Demographic Characteristics		
1 where is your duty station ward?	
2. Age	
3. Your level of education	1 Diploma 2. Degree 3 Post graduate 4. Other.....	
4 your profession	1. Registered Professional nurse 2. Enrolled nurse 3. Enrolled nursing assistant	
5 your service year duration	
6what is your marital status	1 single 2married 3Divorce 4.widowed	
7 What is your parity	1. Nullipara 2. 1 to 2 children 3 3 to 4 children 4 > 5 child	
8 what is your religion	1. Christianity 2 Orthodox 3 Muslim 4 others.....	
9 Your ethnicity	1. African 2 Indian 3 Asian 4 White 5 Others.....	
SECTION B. Knowledge on cervical cancer screening		
10 where did you get information about cervical cancer and screening	1 Print Media 2 Electronic media 3 Training 4 Friends 5 Doctor	

	Others(specify).....	
11 Do you know the cervical screening services is available in your resident/ health facility	1 yes 2 no 3 Not sure	
12 What are the risk factors for cervical cancer	1. Having multiple sexual partners 2. Early sexual intercourse 3. Acquiring HPV virus 4. Cigarette smoking 5. Don't know	
13 Who is vulnerable to cervical cancer	1. Women more than 50 years old 2. Reproductive age women 3. Both 4. Don't know	
14. what are the symptoms of cervical cancer	1. Vaginal bleeding 2. Vaginal foul-smelling discharge 3. Contact bleeding 4. post-menopausal bleeding 5. Don't know	
15. How can a person prevent getting cancer of the cervix	1. Avoid multiple sexual partners 2. Avoid early sexual intercourse 3. Quit cigarette smoking 4. HPV vaccination 5. Don't know	
16 What are the ways of cervical cancer screening	1. Pap smear 2. VIA (visual Inspection with Acetic Acid) 3. VILI (Visual Inspection with Lugol) 4. HPV DNA test	

	5. Don't know	
17. How frequent for premalignant screening for cervical cancer done	1. Once every year 2. Once every three years 3. Once every 5 years 4. Do not know 5. Any other mention.....	
18. Who should be screened	1. Women of 30 years and above 2. Women aged ≥ 21 years 3. Elderly women 4. Others 5. Don't know	
SECTION C. Attitude and practices about cervical cancer screening		
19 Do you believe cervical cancer is one of the most killer cancers in our country?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
20 Do you believe screening help in the prevention of carcinoma of the cervix?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
21 Do you believe screening causes no harm to the client?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
22 If screening is paid will screen?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree	

	5 Strongly disagree	
23 Do you perceive any adult woman including you can be acquiring cervical carcinoma?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
24 Do you believe screening test can find cervical changes before it become cancer?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
25 Do you think to go through screening procedure is an embarrassment?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
26 if you want to get screening will you allow male doctors to examine your cervix	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
27 if you develop cervical cancer, will you consult doctors without being scared?	1 strongly agree 2 Agree 3 Neither agrees nor disagree 4 Disagree 5 Strongly disagree	
28 have you ever been screen for cervical cancer?	1 Yes 2 No	If your answer is" No" complete questions number 34

29 which methods of screening did you use	1 Pap smear 2 VIA 3 Others(specify)..... 4. I don't know	
30 what is your reason to be screened?	1 To maintain good health 2 To detect cervical cancer early 3 Due to sign and symptoms 4 Accessible service being free 5 others (specify).....	
31 How many times did you screened?	1 once 2 More than once	
32 when last did you screened?	1 Within past three years 2 More than three years ago	
33 who recommended you to be screened	1. Myself 4 Friend 2 Doctor 3 Nurse 4 others (specify).....	
34 if your answer is "NO" for question number 28 and if you have never been screened, why not screened for cervical cancer?	1. Fear for positive results 2 Don't know the place of service 3 Fear of pain 4 Embarrassment 5 I am healthy 6 Carelessness 7 lacks of time 8 others Specify.....	
35 will you recommend screening to others	1 yes 2. No	If yours answer is NO, complete question 36 for reasons
36 why not recommend screening for others	1 it is painful 2 Embarrassed 3 Time consuming	

	4 Others(specify).....	
--	------------------------	--

ANNEXURE C: Letter for permission: Limpopo Department of Health

P.O.Box 1204

Vhufuli

0971

23 May 2020

LIMPOPO PROVINCE

DEPARTMENT OF HEALTH

PRIVATE BAG X9303

POLOKWANE

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY AT TSHILIDZINI HOSPITAL, DONALD FRAZER HOSPITAL, WILIAM EDDIE HEALTH CENTRE AND THOHOYANDOU HEALTH CENTRE

I Mathivha Lindelani a registered masters' student at the University of Venda hereby requesting to conduct a research study as part of my fulfilment for Master's degree at these institutions under the department of health at Vhembe District. Please find attached ethical clearance from the institution.

Research details

Research topic: Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province.

Regards

Mathivha L

Professional nurse/researcher

ANNEXURE D: Letter for permission: Vhembe District Department of Health

P.O.Box 1204

Vhufuli

0971

23 May 2020

VHEMBE DISTRICT
DEPARTMENT OF HEALTH
PRIVATE BAG X5009
THOHOYANDOU
0950

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY AT TSHILIDZINI HOSPITAL, DONALD FRAZER HOSPITAL, WILIAM EDDIE HEALTH CENTRE AND THOHOYANDOU HEALTH CENTRE

I Mathivha Lindelani a registered masters' student at the University of Venda hereby requesting to conduct a research study as part of my fulfilment for Master's degree at these institutions under the department of health at Vhembe District. Please find attached ethical clearance from the institution.

Research details

Research topic: Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province.

Regards

Mathivha L
Professional Nurse/Researcher

ANNEXURE E: Letter for permission to conduct study at Donald Fraser Hospital

P.O.Box 1204

Vhufuli

0971

23 May 2020

DONALD FRASER HOSPITAL

PRIVATE BAG X1172

Vhufuli

0971

Dear Sir/Madam

REQUEST TO CONDUCT A STUDY IN YOUR FACILITY

I Mathivha Lindelani hereby submit request to conduct a research study at your facility. I am a student registered for a Master's Degree in Nursing Science at the University of Venda

Research details

Research topic: Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province.

The purpose of this study is to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province. This study will adopt quantitative approach which is descriptive and cross-sectional design. The design will assist in gathering more information on factors affecting participation to cervical screening by female nurses in public health institutions as it will be gathered in wider or broader scale with the aid of use of structured questionnaires or formal instrument to collect data. Participants will ask to complete questionnaires on their lunch time voluntarily. Measures to ensure confidentiality will be maintained by ensuring the participants names remains anonymous and names will not be included on the questionnaires. All information collected during the course of the study will remain confidential. Ethical consideration will be adhered to. A copy of the research report will be submitted to your office on request.

Yours faithfully

Mathivha L

ANNEXURE F: letter for permission to conduct study at Tshilidzini Hospital

P.O.Box 1204

Vhufuli

0971

23 May 2020

Tshilidzini Hospital

Private bag x924

Shayandima

0945

Dear Sir/Madam

REQUEST TO CONDUCT A STUDY IN YOUR FACILITY

I Mathivha Lindelani hereby submit request to conduct a research study at your facility. I am a student registered for a Master's Degree in Nursing Science at the University of Venda

Research details

Research topic: Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province.

The purpose of this study is to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province. This study will adopt quantitative approach which is descriptive and cross-sectional design. The design will assist in gathering more information on factors affecting participation to cervical screening by female nurses in public health institutions as it will be gathered in wider or broader scale with the aid of use of structured questionnaires or formal instrument to collect data. Participants will ask to complete questionnaires on their lunch time voluntarily. Measures to ensure confidentiality will be maintained by ensuring the participants names remains anonymous and names will not be included on the questionnaires. All information collected during the study will remain confidential. Ethical consideration will be adhered to. A copy of the research report will be submitted to your office on request.

Yours faithfully

Mathivha L

ANNEXURE G: Requisition letter to conduct study from at Thohoyandou CHC

P.O.Box 1204

Vhufuli

0971

23 May 2020

THOHOYANDOU COMMUNITY HEALTH CENTRE

PRIVATE BAG X5009

Thohoyandou

0950

Dear Sir/Madam

REQUEST TO CONDUCT A STUDY IN YOUR FACILITY

I Mathivha Lindelani hereby submit request to conduct a research study at your facility. I am a student registered for a Master's Degree in Nursing Science at the University of Venda

Research details

Research topic: Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province.

The purpose of this study is to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province. This study will adopt quantitative approach which is descriptive and cross-sectional design. The design will assist in gathering more information on factors affecting participation to cervical screening by female nurses in public health institutions as it will be gathered in wider or broader scale with the aid of use of structured questionnaires or formal instrument to collect data. Participants will ask to complete questionnaires on their lunch time voluntarily. Measures to ensure confidentiality will be maintained by ensuring the participants names remains anonymous and names will not be included on the questionnaires. All information collected during the study will remain confidential. Ethical consideration will be adhered to. A copy of the research report will be submitted to your office on request.

Yours faithfully

Mathivha L

ANNEXURE H: Requisition letter to conduct study from at William Eddie CHC

P.O.Box 1204

Vhufuli

0971

23 May 2020

WILLIAM EDDIE COMMUNITY HEALTH CENTRE

PRIVATE BAG X5009

Thohoyandou

0950

Dear Sir/Madam

REQUEST TO CONDUCT A STUDY IN YOUR FACILITY

I Mathivha Lindelani hereby submit request to conduct a research study at your facility. I am a student registered for a Master's Degree in Nursing Science at the University of Venda

Research details

Research topic: Factors affecting Participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo Province.

The purpose of this study is to determine factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe district, Limpopo Province. This study will adopt quantitative approach which is descriptive and cross-sectional design. The design will assist in gathering more information on factors affecting participation to cervical screening by female nurses in public health institutions as it will be gathered in wider or broader scale with the aid of use of structured questionnaires or formal instrument to collect data. Participants will ask to complete questionnaires on their lunch time voluntarily. Measures to ensure confidentiality will be maintained by ensuring the participants names remains anonymous and names will not be included on the questionnaires. All information collected during the study will remain confidential. Ethical consideration will be adhered to. A copy of the research report will be submitted to your office on request.

Yours faithfully

Mathivha L

ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:

Mr. I Mathivha

STUDENT NO:

11632557

PROJECT TITLE: Factors affecting participation in cervical screening by female nurses in public health institutions in Vhembe district, Limpopo province.

ETHICAL CLEARANCE NO: SHS/21/PDC/07/0505

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof DU Ramathuba	University of Venda	Supervisor
Prof MS Maputle	University of Venda	Co - Supervisor
Mr. I Mathivha	University of Venda	Investigator – Student

Type: Masters Research

Risk: Minimal risk to humans, animals or environment (Category 2)

Approval Period: May 2021 - May 2023

The Human and Clinical Trials Research Ethics Committee (HCTREC) hereby approves your project as indicated above.

General Conditions

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- The project leader (principal investigator) must report in the prescribed format to the REC:
 - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project
 - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
 - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the REC. Would there be deviation from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date, a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
 - Request access to any information or data at any time during the course or after completion of the project;
 - To ask further questions; Seek additional information; Require further modification or monitor the conduct of your research or the informed consent process.
 - withdraw or postpone approval if:
 - Any unethical principles or practices of the project are revealed or suspected.
 - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
 - The required annual report and reporting of adverse events was not done timely and accurately.
 - New institutional rules, national legislation or international conventions deem it necessary

ISSUED BY:

UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: April 2021

Name of the HCTREC Chairperson of the Committee: Dr NS Mashau

Signature:



UNIVERSITY OF VENDA OFFICE OF THE DIRECTOR RESEARCH AND INNOVATION 2021-05-13
Private Bag X5050 Thohoyandou 0950



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
VHEMBE DISTRICT

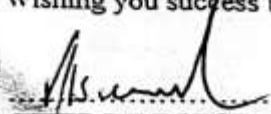
Ref: S5/6
Enq: Muvuri MME
Date: 21.07.2021

Dear Sir/Madam... MATHIVHA L

Re: Permission to conduct a research on the Factors affecting
participation in cervical screening by female nurses in Vhembe

1. The above matter has reference.
2. Your letter received on the 21.07.2021 requesting for permission to conduct an investigation is hereby acknowledged.
3. The District has no objection to your request.
4. Permission is therefore granted for the study to be conducted within Vhembe District. You are expected to submit the results to the District.
5. You are however advised to make the necessary arrangements with facilities concerned.

Wishing you success in your endeavors.


CHIEF DIRECTOR: DISTRICT HEALTH

21/7/2021
DATE

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 & Fax: (015) 962 2373, (015) 962 227

the heartland of Southern Africa - development is about people

Restricted



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
TSHILIDZINI HOSPITAL

Ref: 8/1/1

Enquiries: Netshifhefhe L.E

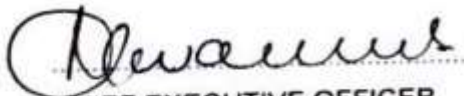
Date: 08 December 2021

To: Mathivha Lindelani

Subject: Permission to conduct research on factors affecting participation to cervical screening by female nurses in public health institutions in Vhembe District, Limpopo province.

1. The above matter refers.
2. Your letter received on the 30 November 2021 requesting for permission to conduct a study is hereby acknowledged.
3. Permission is therefore granted for the study to be conducted in Tshilidzini Hospital based on the approval letters you provided from the Limpopo Department of Health Head of department and Chief Director Vhembe District Health.

Wishing you success in your studies.


CHIEF EXECUTIVE OFFICER

2021/12/09
DATE

Private Bag x 924 SHAYANDIMA 0945
Tel : (015) 964 4200 Fax : (015) 964 1492
(015) 964 1072

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LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
DONALD FRASER HOSPITAL

Ref: 4/2/2
Enquiries: Neluheni T/ Mphephu V.F
Ext. 9306 Cell no. 0721880436
19/10/2021

To: Mr Mathivha L
University of Venda
P/Bag X5050
Thohoyandou
0950

LIMPOPO PROVINCE
DONALD FRASER HOSPITAL
2021 -10- 19
PRIVATE BAG X1172 0971 VHUFULI
DEPARTMENT OF HEALTH

RE: FACTORS AFFECTING PARTICIPATION TO CERVICAL SCREENING BY
FEMALE NURSES IN PUBLIC HEALTH INSTITUTIONS IN VHEMBE DISTRICT,
LIMPOPO PROVINCE

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
 - Kindly be informed that in the course of your study there should be no action that disrupts the services.
 - You are to give report to quality assurance manager of Donald Fraser Hospital after completion of research study at Donald Fraser Hospital.
 - After completion of the study, a copy should be submitted to our institution to serve as a resource.
 - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
 - You are therefore requested to contact nursing administration office number 7, OPD basement for logistic arrangements.

3. Please bring along the following documents:

- Permission letter granted from department of health.
- Permission letter granted from educational institution.
- This letter.

Hoping you will find this in order

SIGNED.....  (PP) Date 20/10/19

CHIEF EXECUTIVE OFFICER

Private bag X1172, Vhufuli 0971
Tel: 015 963 1778/9, 015 1783 1791/2 • Fax: 015 963 1773, 015 963 1796
Cell: 083 248 0184



Faculty of Humanities, Social Sciences and Education

TO WHOM IT MAY CONCERN

03 November 2021

Dear Sir/Madam

Re: Editing and Proofreading Report

This letter serves to confirm that I have proofread and edited Master's dissertation titled: **"FACTORS AFFECTING PARTICIPATION TO CERVICAL SCREENING BY FEMALE NURSES IN PUBLIC HEALTH INSTITUTIONS IN VHEMBE DISTRICT, LIMPOPO PROVINCE"** by Mathivha Lindelani. I carefully read through the document, focusing on proofreading and editorial issues. The content has not been altered but improved for comprehension.

Regards

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