

UNIVERSITY OF THE WESTERN CAPE

FACULTY OF COMMUNITY AND HEALTH SCIENCES

SCHOOL OF NURSING



**STUDENT NURSES' KNOWLEDGE AND ATTITUDES REGARDING CERVICAL
CANCER SCREENING**

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A mini thesis submitted in partial fulfilment of the requirements for the degree Master of
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KEYWORDS

Knowledge

Attitude

Cervical cancer

Screening

Student Nurses



LIST OF ABBREVIATIONS

CC	Cervical cancer
EPI	Expanded programme on immunization.
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
ND	Nursing Department
SANC	South African Nursing Council
SoN	School of Nursing
Td	Diphtheria and tetanus (DT)
VLP	Virus like particles
WHO	World Health Organization



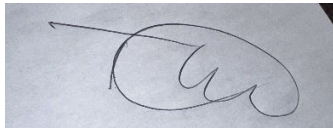
DECLARATION

I, Tetelo Mokgethwa Matshingwane, hereby declare that this research study entitled “*Student nurses’ knowledge and attitudes regarding cervical cancer screening*” is my own work, that it has not been submitted before for any degree or examination to any other university, and that all resources I have used or quoted have been indicated and acknowledged in-text and as complete references in my reference list.

Name: Tetelo Mokgethwa Matshingwane

Date: December 2022

Signed:



DEDICATION

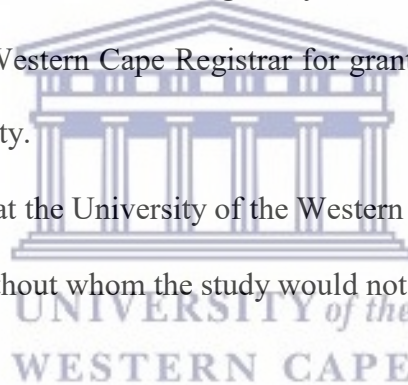
I dedicate this thesis paper to my loving and kind husband who has supported me throughout my studies and has allowed time out. To my family and friends who have encouraged me through the hardships I met through the years of my study.



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ABSTRACT

Background: Globally, cervical cancer has been identified as a public health concern due to the degree, and extensive distribution in low-resource communities. In 2018 approximately 570 000 cases of cervical cancer and 311 000 deaths have been reported.

Aim of the study: The study aimed to assess the knowledge and attitudes of student nurses regarding cervical cancer screening.

Methodology: A quantitative descriptive design was used to explore and describe the knowledge and attitudes of student nurses regarding screening cervical cancer. The target population included all 2021 final-year Bachelor of Nursing degree students registered at a Nursing Department at a university in the Western Cape Province. This population were selected as they had completed their midwifery training in 2020. Data was collected by means of a self-administered questionnaire, which was coded, captured on an Excel spreadsheet, and analysed using the Statistical Package for Social Sciences version 28. A total of 124 (n=124) fourth year undergraduate nursing students out of the 200 (N=200) registered students for the 2021 academic year completed the self-administered questionnaire. The response rate was 62%.

Ethics: Ethical approval for the study was granted by the Humanities and Social Sciences Research Ethics Committee at the University of the Western Cape, the Registrar of the University, and the Director of Nursing Department before the commencement of data collection. Respondents were informed of the nature of the research, and they were provided with an information sheet which informed them that their participation was completely voluntary. The ethical principles of autonomy, beneficence, confidentiality, anonymity, and justice were closely observed during the study. Consent was given in writing by each participant before the commencement of the study.

Findings and recommendations: This study found that nursing students expressed a good level of knowledge and attitudes regarding cervical cancer screening. Most students were able to identify methods used in screening for cervical cancer. It was also noted that most students did indicate a fear of pap smears, student nurses also reported that cervical cancer screening is not available or cervical cancer screening is not important.



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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

This chapter includes an overview of the background, research problem, and the aim and objectives of the study. A brief discussion of the research methodology is included, which will be expanded on in chapter three. The significance of the study is presented, and operational definitions of key terms are included to ensure clarification. This chapter is concluded with a summary of each chapter in the thesis.

1.2 BACKGROUND: INCIDENCE OF CERVICAL CANCER

Globally, cervical cancer has been identified as one of the main public health concerns due to the degree, and extensive distribution in low-resource communities and setting (WHO, 2020). Approximately 570 000 cases, and 311 000 deaths occurred from cervical cancer in 2018 (WHO, 2020). Cervical cancer was the fourth most common cancer in women, ranking after breast cancer with 2.1 million cases, 800 000 cases of colorectal cancer and lung cancer at 700 000 cases (Arbyn et al., 2019). Approximately half a million new cases of carcinoma of the cervix occur annually worldwide, with most cases documented in developing countries (Anorlu, 2006).

There are certain categories of cancer which might not present with symptoms and can only be detected through regular screening, such as the human papilloma virus (HPV), a sexually transmitted infection (Keti, 2016; WHO, 2013). While it can take 15 to 20 years for an infection with the HPV to result in cervical cancer, HPV can be prevented through vaccination, and potential cancer by regular screening and treatment of precancerous lesions (Ebu et al., 2019).

Ramathuba et al. (2016) describe cervical cancer as a public health problem due to the high rate of prevalence, and mortality, in women of low socioeconomic levels and in the reproductive phase.. Almobarak et al. (2016) indicate that traditionally there is minimal screening for cervical cancer among South African women. This may be due to a lack of knowledge among nurses, resulting in a lack of provision of health promotion and education which could assist the community, and concurrently a lack of recognition of signs and symptoms among women leading to a late presentation of the disease (Almobarak et al., 2016).

Infections caused by certain genotypes of HPV increase the risk of cervical cancer. HIV-infected women are more likely to have persistent HPV infection, with higher-risk genotypes. (Akokuwebe et al., 2021). In SA, two vaccines are currently registered for the prevention of HPV related disease – HPV quadrivalent vaccine (types 6, 11, 16, and 18), recombinant (Gardasil), and HPV bivalent vaccine (types 16 and 18), recombinant (Cervarix) (Akokuwebe et al., 2021).

In the past, there have been significant challenges to achieving high coverage and uptake of vaccination – contributory factors include cost and lack of awareness. An HPV demonstration project among schoolgirls in rural KwaZulu-Natal revealed that a high vaccine uptake is achievable. In 2014, the National Department of Health launched the national HPV vaccination programme among female learners attending public schools. Awareness of HPV vaccination among healthcare providers, education of parents, teachers and learners, and avoidance of missed opportunities for vaccination are vital to the success of the programme. Primary healthcare practitioners can play an important role in the prevention of cervical cancer by identifying, and offering vaccination to, girls who miss the opportunity to be vaccinated at school. HPV vaccination should be considered as one arm of a comprehensive programme of cervical cancer prevention and control (Akokuwebe et al., 2021). Because South Africa is one

of the developing countries with a high prevalence of cervical cancer it is important to explore the knowledge and attitudes of student nurses regarding cervical cancer (Elamurugan, Rajendran & Thangamani, 2016)

1.3 PROBLEM STATEMENT

Regular screening for carcinoma of the cervix can contribute to reducing morbidity and mortality caused by cervical cancer, therefore nurses need to be aware of all aspects of prevention of cervical cancer specifically the impact of screening (AbdAllah, Hummeida & Elmula, 2016; Pegu et al., 2017). In South Africa (SA), >4 000 women die annually of cervical cancer, a disease primarily caused by the human papillomavirus (HPV) (Akokuwebe et al., 2021).

Treatment of cervical cancer varies according to the stage at diagnosis, and consists of surgery if identified early, chemotherapy and radiotherapy are added if the disease is in an advanced stage, all of which places a financial burden on the health budget (Small et al., 2017). Screening for the Human Papilloma Virus is inexpensive and can identify potentially precancerous changes (Small et al., 2017). The World Health Organization (WHO) recommends that woman be screened every two to three years once they become sexually active throughout their reproductive years (WHO/ICO Information Centre on HPV & Cervical Cancer, 2007). Screening for cervical cancer can impact the cost regarding management therefore nurses should be mindful of the important and influential role they play in terms of educating, encouraging, and informing women about the importance of prevention of cervical cancer (Ebu et al., 2019).

It is important for student nurses to understand that they can be instrumental in health promotion about HPV vaccination to prevent cervical cancer and to increase awareness about the availability of screening for HPV. As future health professionals, their knowledge and

attitude towards the prevention of cervical cancer may contribute to a reduction of morbidity and mortality. The researcher would therefore like to explore and describe the knowledge and attitudes of student nurses regarding the importance of cervical cancer screening.

1.4 AIM OF THE STUDY

The aim of the study was to assess the knowledge and attitudes of student nurses regarding cervical cancer screening.

1.5 OBJECTIVES

- To assess the knowledge of fourth year undergraduate nursing students regarding cervical cancer screening.
- To describe the attitudes of fourth year undergraduate nursing students regarding cervical cancer screening.

1.6 SIGNIFICANCE OF THE STUDY

The findings of this study look to provide nurse educators at a School of Nursing with a point of reference when addressing important factors related to the knowledge and attitudes of student nurses regarding cervical cancer screening. The study could also contribute to understanding the readiness of healthcare workers to perform a cervical screening. Nursing students, under direct supervision of a registered nurse, offer health promotion in communities in which they work. If they are well informed about cervical cancer screening, they will be able to educate those they engage with. Improved awareness of student nurses regarding the importance of cervical cancer screening would be the most significant contribution of this research study (World Health Organization. (2013).

1.7 RESEARCH METHODOLOGY

This chapter will include a brief overview of the research methodology which will be expansively discussed in chapter three.

1.7.1 Study Design

A study design is described as the different components of a study integrated together in a logical way to address the research problem (De Vos, Strydom, Fouche & Delport, 2011).

There are four main types of quantitative research: descriptive, correlation, causal comparative/quasi-experimental and experimental research. A quantitative, descriptive design was used to explore and describe the knowledge and attitudes of student nurses regarding cervical screening (Brink, van der Walt & van Rensburg, 2017). Descriptive study design is an explanation of occasions which exist where the investigator has no control around variables (Dudovsky, 2016). Correlational research is related with determining relations between two or more variables in the same population or between the same variables in two the population in the study (Curtis, Comiskey & Dempsey, 2016). A quasi-experiment is a prospective study in which patients self-select into or their healthcare providers select on their behalf one of different therapy groups for the sake of comparison with the real-world effectiveness and safety of those non-randomized treatments (Maciejewski, 2020). An exploratory design seeks to generate new thoughts that assist mould knowledge into practice by examining sincerity of purpose from real practice (Polit & Beck, 2017).

1.7.2 Population and Sample

According to (Brink et al., 2017) population is the comprehensive set of persons or objects that poses some common attribute that is of interest to the researcher. The target population in this study was fourth year undergraduate nursing students in a School of Nursing at a university in the Western Cape. The population (N=200) was inclusive of all fourth-year undergraduate nursing and the sample included all students (n=124) who gave informed consent to be part of the study. The accessible population, the entire population, included all fourth-year undergraduate nursing students (N=200) registered for the 2021 academic year and who had

completed their midwifery and community health nursing clinical placements in their third year of study.

1.7.3 Sampling

A sample is a selection of those elements from the population that were used in the study (Williamson, 2018). The probability sampling strategy was applied in this study. Probability sampling is a process for randomly selecting participants from a population (Polit and Beck, 2012). Research respondents are those who volunteer to participate in a study (De Vos et al., 2011). The research respondents had all completed the clinical competencies related to cervical screening during their midwifery and community health nursing clinical placements.

1.7.3.1 Inclusion criteria

To be included in this study, respondents had to have the following characteristics:

- A registered undergraduate fourth year nursing student for the 2021 academic year.

1.7.3.2 Exclusion criteria

Respondents were excluded from the study if they had the following characteristics:

- They were not registered undergraduate fourth year nursing students for the 2021 academic year.
- Students who did not completed their midwifery and community health nursing clinical placements.
- Students who were not present during data collection.

1.7.4 Research Setting

According to Silverman (2016), a research setting refers to a place where data is collected for a study. The study was conducted at a School of Nursing in a university in the Western Cape. This Higher Education Institution comprises of seven faculties. The Department of Nursing (ND) falls within the Community and Health Sciences Faculty. The ND was identified for this

research study as it offers an undergraduate nursing program that is regulated by the South African Nursing Council (SANC). This ND provides comprehensive training through two streams: a four-year mainstream programme and a five-year extended curriculum programme. The programmes both lead to a qualification in General Nursing Science, Midwifery, Community Health Nursing Science and Psychiatric Nursing under the SANC Regulation 425. The setting was chosen by the researcher as it was accessible.

1.7.5 Data Collection Tool

In this study a questionnaire previously used in a study on nurse's knowledge, attitude and practices regarding cervical cancer screening and prevention methods at two tertiary hospitals in Nairobi, Kenya, was used with permission. Keita (2016) from the University of South Africa, provided permission for the use of the self-explanatory questionnaire.

1.7.6 Data Collection Method

Data was collected in a classroom on completion of a lecture session; this ensured that the students' learning time was not compromised. This was an advantage to the researcher and the students as it was a known and favorable environment (Botma, Greef, Mulaudzi & Wright, 2010).

1.7.7 Data Analysis

The quantitative data collected was captured and analyzed using SPSS version 28. Descriptive analysis included the mean, standard deviation, and scores of variables related to the individual items for each of the factors included. An average summary of the scores was calculated for each factor. Tables and other diagrams were used to represent the outcome of the data analysis that will be presented in chapter four.

1.8 ETHICAL CONSIDERATIONS

The research study was conducted in an ethical manner as required by the university. Ethical clearance was requested from the Human and Social Sciences Research Ethics Committee to conduct the research project. Upon receipt of ethical clearance, permission for recruitment of student respondents were requested from the Registrar of the university. Respondents were informed of the nature of the research, and they were provided with an information sheet which informed them of the purpose and intention of the study and that their participation was completely voluntary. The respondents were requested to complete a signed consent form. Each participant was given a number which was added to the questionnaire instead of their personal details, to ensure confidentiality. All data collected in this study were kept in a locked cupboard in the office of the research supervisor, which was only accessible to the researcher and the research supervisor. Ethical principles adhered to during the study included autonomy, beneficence, and justice.

1.9 OPERATIONAL DEFINITIONS OF KEY TERMS

Attitude: This is a manner, disposition, feeling, and position, regarding a person or thing, tendency, or orientation, especially of the mind (Google dictionary.com, 2020).

Operational definition: *In this study attitude means negative or resistant behavior or a negative state of mind regarding cervical cancer screening. This can be influenced by the knowledge students have regarding cervical cancer.*

Cervical cancer: This is a cancer that is found anywhere in the cervix. The cervix is the opening between the vagina and the womb (uterus) (Cervical cancer. NHS. 2021)

Operational definition: *In this study cervical cancer refers to cancer of any part of the cervix.*

Knowledge: This is a familiarity, awareness, or understanding of someone or something such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning (Google Dictionary, 2020).

Operational definition: *In this study knowledge is having education and experience as taught in the nursing undergraduate program at a university in the Western Cape.*

Screening: In medicine, screening is a strategy used to look for as-yet-unrecognized conditions or risk markers (Google dictionary.com, 2020).

Operational screening: *In this study, screening means performing an investigation or assessing patients for cervical cancer. This can be done through asking them questions or invasive procedures.*

Student nurse: A student nurse is a person who is in training at a Higher Education Institution enrolled in a program that leads to the registration as a Registered Nurse on successful completion of the programme with the South African Nursing Council (SANC,2005).

Operational definition: *In this study a student nurse refers to a fourth-year undergraduate nursing student at a School of Nursing who has completed her clinical learning outcomes related to cervical cancer screening.*

Registered nurse: A registered nurse is a healthcare professional who has been licensed by the South African Nursing Council to provide, and coordinate, patient care after receiving specialised education and passing the required examinations (SANC, 2005)

Operational definition: *A Registered Nurse affords students the chance to perform cervical screening and engage in health promotion activities to aid in the prevention of cervical cancer under direct supervision. Registered nurses serve as mentors/supervisors for nursing students when they are placed in clinical learning facilities.*

1.10 OUTLINE OF THE STUDY

The chapters of this study are outlined as follows:

Chapter 1: Introduction

This chapter outlines the study with the inclusion of the introduction, background, aim, goals, significance of the study, research method, ethical considerations, and a detailed description of operational definitions of this study.

Chapter 2: Literature review

This chapter includes a discussion on literature relevant to student nurses' knowledge and attitudes regarding cervical cancer screening.

Chapter 3: Research methodology

This chapter presents the research design and methodology identified for this study, and includes the research approach, research design, data collection tool and sampling procedure.

Chapter 4: Findings and discussion

This chapter presents and discusses the data analysis and the research findings of the study supported by relevant literature.

Chapter 5: Conclusion, limitations, and recommendations

This chapter presents a summary of evidence-based recommendations from research and concludes the findings and limitations of the study.

1.11 SUMMARY

The research topic has been introduced and contextualised in this chapter. A clear statement of the identified problem has been said and a brief outline of how to achieve the research aim and goals have been stated. In the next chapter literature that supports the problem named will be presented.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

A Literature review is done to enlighten the researcher about the current knowledge and information available on the topic of interest published by other scholars (Brink, van der Walt & van Rensburg, 2017). This is an experimental process for the planned research as it prevents copying existing information, assists the researcher to comprehend more in terms of the topic of interest and assists to differentiate new findings with the published literature (Brink, van der Walt & van Rensburg, 2017). The following search engines were used to conduct the literature review: Ebscohost, Google Scholar, PubMed, Science Direct, Wiley Online Library as well as textbooks and journals. This chapter will include a brief review of the literature to contextualise the study and focus on literature regarding student nurses' knowledge and attitudes regarding cervical cancer screening.

2.2 CERVICAL CANCER STATISTICS AND INCIDENCE

Globally, cervical cancer is the fourth most detected cancer, and the fourth leading cause of cancer-related death in women (Bray et al., 2018). South Africa, as a developing country, presents with a high prevalence of, and mortality from, cervical cancer in women in their reproductive years, and mostly linked to low social and economic environments. In South African public health facilities stipulated age categories were introduced for cervical screening among women, which led to minimum screening of women in certain age categories, in other words those not considered to be in the recommended years. The result of minimum screening is a lack of knowledge among women, insufficient health promotion/education from nurses, delayed or late diagnosis, and in many cases, death (Elamurugan, Rajendran & Thangamani,

2016; Almobarak et al., 2016). Approximately 570 000 cases of cervical cancer and 311 000 deaths from the disease occurred worldwide in 2018.

The approximate age-standardised incidence of cervical cancer was 13.1 per 100 000 women globally and the total number of cases differed among countries, with cases ranging from less than two (2) to 75 per 100 000 women (Arbyn et al., 2020). Cervical cancer was the major cause of cancer related deaths in women in Eastern, Western, Middle, and Southern Africa (Arbyn et al., 2020).

Arbyn et al. (2020) indicated that the highest occurrence of cervical cancer cases in Swaziland with approximately 6.55% of women under 75 years of age. South Africa and Swaziland both, as developing countries, presents with a high prevalence of, and mortality from, cervical cancer in women in their reproductive years, and mostly linked to low social and economic environments. China and India combined account for more than a third of the global cervical cancer burden in 2018 with 106 000 cases in China, and 97 000 cases in India. A total of 48 000 deaths were recorded in China and 60 000 in India (Arbyn et al., 2020).

Arbyn et al. (2018) identified that globally, the average age at discovery of cervical cancer was 53 years of age, which ranges from 44 years in the Republic of Vanuatu, to 68 years in Singapore. The global mean age at death from cervical cancer was 59 years, ranging from 45 years in Vanuatu to 76 years in Martinique, an island and an overseas department/region and single territorial collectivity of France, Cervical cancer came in the top three cancers attacking women younger than 45 years in 146 (79%) of 185 countries assessed (Arbyn et al., 2018). The global scale-up of regular cervical examinations, HPV vaccination and HPV-based screening—including self-sampling—has the potential to make cervical cancer a rare disease in the future (Arbyn et al., 2018).

The United Nations describes South Africa as an upper middle – income country instead of a developing country that presents with unequal distribution of wealth and a concurrent high rate of poverty (Botha & Dochez, 2012). The 2019 South African National Cancer Registry statistics for cervical cancer cases and deaths report that the number of new observed cases in South African women was 6,945 in 2019, accounting for 15.85% of all cancers diagnosed in South African women. The age-standardised rate (ASR) was 22.92 per 100,000 women (South African National Cancer Registry, 2019). Analysis of the ASR and new cases by ethnic group revealed that black women were more affected than any other population group due to being economically disadvantaged and with poor access to healthcare (South African National Cancer Registry, 2019).

Cervical cancer is the second most common cancer among women in South Africa after breast cancer. The National Cancer Registry reported age standardised incidence rates (ASRs) of 26.2 and 29.1 per 100,000 for black African women in 2008 and 2012, respectively (South African National Cancer Registry, 2019).

The population-based Eastern Cape Cancer Registry (ECCR) that records incidence of cancer occurrences among populations living in defined rural areas also reported an increase in cervical cancer ASRs from 22.0 to 29.4 per 100,000 women during the same period (Somdyala et al., 2020).

2.3 KNOWLEDGE OF CERVICAL CANCER

Cervical cancer is the second most common cancer and the leading cause of cancer death in women in sub-Saharan Africa (Jedy-Agba et al., 2020). In a study conducted in the Gabonese République on the West Coast of Central Africa, using a cohort from housewives and educators, poor knowledge was identified. This could be because they did not have sufficient sources of information, or in some respondents a lack of schooling could be a factor. All of these could

lead to a lack of relevant information which is required to ensure early diagnosis (Elamurugan, Rajendran, & Thangamani, 2016).

In this study health care providers were the main source of information and publicity regarding cervical cancer. It was indicated that 98% of teachers had knowledge about cervical cancer and screening methods and 79% knew about Papanicolaou examination. Among the housewives 72% knew about cervical cancer and 70% had heard of the availability of the screening methods, but only 38% had heard of Papanicolaou examination. The level of knowledge confirms the premise of a lack of educational level in housewives, only the teachers had adequate knowledge regarding Papanicolaou examination. It is considered to be the responsibility of health care providers to educate the public through campaigning and awareness, especially during visits to healthcare facilities (Elamurugan et al., 2016).

Cervical cancer is a worldwide burden which requires strategies such as the availability of free screening for all women who meet the eligibility criteria. The South African guideline (Department of Health. National for Cervical Cancer Screening Programme. Pretoria: DoH. 2015) has formulated an all-inclusive policy which indicates that every woman needs to be screened once every three years. This will reduce the incidence of late diagnosis as the Papanicolaou test detects precancerous cells and treatment can be commenced before cancer spreads (Small et al., 2017; Botha & Dreyer, 2017; Denny, 2010; Assoumou et al., 2015).

Student nurses work under supervision of midwives while in the health care setting. A study was done to explore the level of knowledge of cervical cancer and screening methods among midwives, students and women attending a specific private doctor. In the results of the study 22.7 % of the women knew about screening, 35.3% of midwives and 83.8% of students. It was evident from the findings that midwives had poor knowledge regarding the Papanicolaou examination, cervical cancer and HPV vaccination and needed to improve their knowledge;

they play an important role in health promotion and awareness among the public (Antic et al., 2014).

In a study that was done on 259 nursing students in the Department of Nursing and 137 nurses working in Health Research and Practice Center between April to June 2012 (Topan et al., 2015). The purpose of this study was to determine knowledge levels of working and student nurses about cervical cancer and prophylactic cancer vaccines. It was found that all nurses had some knowledge about cervical cancer and HPV vaccine, but this was not sufficient.

In a study aimed to assess knowledge, practices, and attitudes of nurses with regards to cervical cancer screening and preventive measures at two Nairobi hospitals in Kenya (Kieti, 2016). A number of 114 nurses participated in the study. The study revealed that nurses were conscious of cervical cancer, available screening methods and the purpose of screening. The study also revealed that nurses know that cancer screening could detect this cancer at an early stage, but the uptake is low (Kieti, 2016).

2.4 ATTITUDES TOWARDS CERVICAL CANCER

A study by Aweke, Ayanto and Ersado (2017) conducted in Ethiopia among women of childbearing age revealed poor understanding, lack of knowledge and negative attitude toward the Papanicolaou examination and cervical cancer; 46.3 % had poor understanding, 58.9 had no knowledge while 38% had a negative attitude. It was evident that 95% of the respondents were not actively seeking information or had even heard of cervical cancer and requisite screening methods. The reason for respondents failing to actively seek information is apparently their own lack of information regarding the disease, despite being in the childbearing age. Parity and gravida are risk factors for cervical cancer therefore women in this stage of life need to have routine Papanicolaou examinations. Health care providers need to

provide the necessary information and awareness so that the public can inform one another (Aweke, Ayanto & Ersado, 2017).

In a study conducted by Ganju et al. (2017), with a cohort of 400 respondents including 200 medical students (MBBS), 120 BSc nursing students and 80 staff nurses who answered a standardised questionnaire which was analysed. The majority of the MBBS students correctly believed that cervical cancer was not the most common cancer in females and 77.5% believed that HPV is identified in more than 50% of cases. Around 80% of the respondents knew that HPV is transmitted sexually and could be transmitted during pregnancy and can affect both males and females. More than 80% of the staff nurses answered correctly that HPV could be transmitted by needle sharing and 76% believed that the infection could be symptomless. More than 80% of the respondents were aware that a vaccine is available against HPV, but only 5.5% were vaccinated themselves. Though the knowledge was there although several gaps were noticed regarding HPV vaccination, the major concerns being safety, efficacy, and availability of the vaccine (Ganju et al., 2017).

In a cross-sectional community-based survey conducted by Mukama et al. (2017) in the Bugiri and Mayuge districts in Eastern Uganda, data was collected by means of a questionnaire. In this study, a total of 900 women aged between 25–49 years participated and women's knowledge and attitudes towards cervical cancer prevention were assessed and scored. Most of the respondents, 794 (88.2%) had heard about cervical cancer, 557 (70.2%) received information from radio broadcasts and 120 (15.1%) received information from health facilities. Most of the women 562 (62.4%) knew of at least one preventive measure and 743 (82.6%) knew at least one symptom or sign of the disease. Most respondents 684 (76.0%) perceived themselves to be at risk for cervical cancer and 852 (94.6%) were thought to have progressed to very severe in terms of the condition (Mukama et al., 2017).

Williams et al. (2013) identified barriers to participation in cervical cancer screening which included financial barriers such as the cost of screening and institutional barriers in terms of the lack of a national cancer control program in Ghana. Stigmatisation of women with cervical cancer results in low participation in cervical cancer screening by Ghanaian women of all education levels (Williams et al., 2013). In addition, healthcare providers who hold stigmatising beliefs about cervical cancer may only recommended preventive cervical cancer screenings to women they perceived be promiscuous. Therefore, culturally appropriate interventions aimed at increasing knowledge about cervical cancer and reducing stigmatising misconceptions are needed (Williams et al., 2018).

In summary, it is evident through studies conducted in the field that student nurses lack knowledge regarding cervical cancer and therefore have a bad attitude regarding the practice of cervical cancer screening. Women in rural and urban places depend on health care workers and the media for health promotion and health education. If nurses are not well educated they will not engage in health promotion or health education. Women will not attend facilities to screen for cervical cancer because they do not know about it, do not have symptoms or because they are not encouraged to do so, all of which leads to late diagnosis, and ultimately death.. The researcher is thus of the opinion that there is a need to describe and explore the knowledge, attitudes and practices of student nurses regarding cervical screening.

2.5 IMPACT OF CERVICAL CANCER

Cervical cancer continues to be a general health problem affecting middle-aged women, especially in low -income countries. The global scale-up of HPV “vaccination and HPV-based screening, including self-sampling, has the power to make cervical cancer a rare disease in the future” (Arbyn et al., 2018). Cervical cancer treatment takes approximately 18% of a health facility’s budget, yet it is preventable and can be diagnosed early through

screening using various methods—with the Papanicolaou test as the gold standard (Somdyala et al., 2020).

2.6 CERVICAL CANCER PREVENTION

Cervical cancer is highly preventable and can be easily treated if detected at an early stage. However, there is a disproportionately high burden of cervical cancer incidence and mortality in low-middle income country settings which lack organised screening and prevention programs (Pimple & Mishra, 2019). Knowledge of cervical cancer is an important element to assist women to participate in prevention programmes which include screening for cervical cancer (Mabelele et al., 2018).

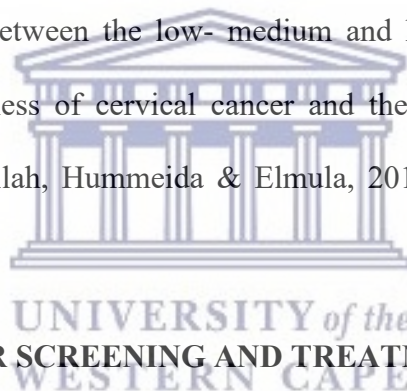
HPV is the most common cause of cervical cancer and is transmitted by close contact, including penetrative and non-penetrative sex, therefore preventing transmission is fundamental to preventing cervical cancer (Ducray et al., 2021). The use of condoms reduces the risk of contracting sexually transmitted viruses, including HIV, and unwanted pregnancy. Condoms may also reduce the risk of developing HPV related diseases because it reduces the likelihood of re-exposure (Ducray et al., 2021). Preventative methods include having one sexual partner, not smoking, exercising, eating healthily, abstaining from sexual contact/intercourse, and the use of condoms. Vaccination against the most common high-risk types of HPV, namely HPV 16 and 18, before exposure, is the most effective way to prevent HPV infections (Ducray et al., 2021).

Women attending the public-sector services are entitled to three free Papanicolaou smears per lifetime starting at the age of 30 years, with a 10-year interval between each smear unless the smears reveal dysplastic or atypical cellular changes. The goal of this screening program is to screen 70% of the target population within 10 years of implementation (Ducray et al., 2021). However, small-scale screening evaluation studies identified problems with the

implementation of the program. These problems include little to no follow up on positive smears and the level of understanding and knowledge of cervical cancer screening of the recipients (Somdyala et al., 2020).

Cervical cancer is a preventable disease, and a key aspect of prevention is early detection of precancerous conditions through Papanicolaou cytology screening (Pap smear), it has been accepted worldwide as an efficient tool for secondary prevention (AbdAllah, Hummeida & Elmula, 2016; Elamurugan, Rajendran & Thangamani, 2016).

HPV vaccination has been identified as the primary prevention method. Pap smears effectively reduce the incidence of cervical cancer by 75-90%. Cervical cancer screening using the Papanicolaou test prevents the development of cervical cancer by recognising the precancerous state. Disparity in incidence between the low- medium and high-income countries can be attributed to a lack of awareness of cervical cancer and the lack of effective cytological screening programmes (AbdAllah, Hummeida & Elmula, 2016; Elamurugan, Rajendran & Thangamani, 2016).



2.7 CERVICAL CANCER SCREENING AND TREATMENT

Healthcare workers, through adequate knowledge, play a substantial role in positively influencing the beliefs and practices of the public through health education, screening, and encouraging women to be involved in health campaigns (Heena et al., 2019). Three types of tests are presently accessible and widely used for the screening of cervical cancer: tests for HPV, cytology based Papanicolaou test and unaided visual inspection with acetic acid (World Health Organization, 2013). Meta-analyses and pooled analyses of randomised trials have shown that screening with HPV tests offers a better defense against future precancerous cervical lesions and hostile cancers than screening by cytology (Arbyn et al., 2012; Ronco et al., 2014).

The (WHO) recommends that women with HIV receive cervical cancer screening with HPV testing at least every three years if resources are available; for countries with fewer resources, visual inspection with acetic acid is an acceptable screening alternative. Screening with cervical cytology (pap smear) is only recommended for countries that have already achieved high cytology coverage and quality indicators (Campos et al., 2018).

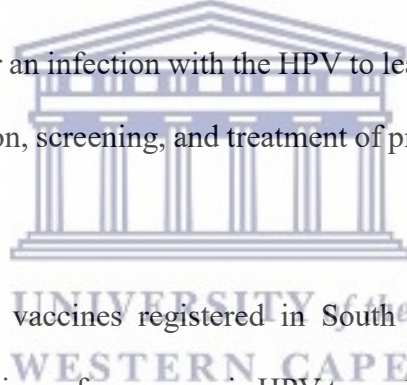
Cervical cancer is the most common cause of cancer-related deaths among women worldwide making it a global health burden. Developed countries have reported a significant drop in the incidence of cervical cancer due to intensive screening programs, but among women in developing and underdeveloped countries it remains the second most common cancer, comprising 80% of the global burden of this disease (Elamurugan, Rajendran & Thangamani, 2016; Ramathuba et al., 2016). This is mainly because of a lack of knowledge, health promotion and education from nurses and other health care providers. Similarly, underdeveloped countries and developing countries cannot afford to campaign for cervical cancer screening due to lack of budget or women being unable to access health care facilities due to the distance they must travel, and the lack of means to get to the facilities (Ramathuba et al., 2016).. In many countries health care facilities are faced with shortages of staff and resources which makes it difficult for them to offer cervical cancer screening amongst other services (Elamurugan, Rajendran & Thangamani, 2016; Ramathuba et al., 2016).

2.8 HPV VACCINE

Human papillomavirus (HPV) is a sexually transmitted virus observed in most cases of cervical cancer, which kills 275 000 women every year and is the biggest contributor to years of life lost from cancer among women in the developing world (Binagwaho et al., 2012). Due to evidence that recurrent human papillomavirus (HPV) infection is the primary cause of cervical cancer ushered the development of vaccines to prevent and halt HPV infection (Arbyn et al.,

2018). Evidence from studies shows that the licensed bivalent and quadrivalent HPV vaccines containing HPV16 and HPV18 antigens protect with good efficacy against infection and precancerous cervical lesions associated with these types when individuals are not yet exposed (Arbyn et al., 2018). Both types jointly cause 70–75% of all cervical cancers and 40–60% of its precursors (De Sanjose et al., 2010).

Almost all cervical cancers are caused by HPV and, therefore, are largely preventable (Fielding et al., 2021). Over the past several decades, the incidence of cervical cancer has decreased in developed countries (Adegoke, Kulasingam & Virnig, 2012; Bray et al., 2005). This is mainly attributed to increased awareness and more effective screening and prevention strategies utilised in these countries (Bray et al., 2018; Torre et al., 2017). In addition, the HPV vaccine has contributed to a decline in the incidence rate of cervical cancer (McClung et al., 2019). It can take up to 15 to 20 years for an infection with the HPV to lead to cervical cancer, but it can be prevented through vaccination, screening, and treatment of precancerous lesions (Ebu et al., 2019).



Currently there are two HPV vaccines registered in South Africa. The bivalent vaccine Cervarix™, containing VLP antigens for oncogenic HPV types 16 and 18; and the quadrivalent vaccine Gardasil™, containing VLP (virus-like particles) antigens for HPV types 16 and 18, as well as non-oncogenic HPV types 6 and 11, which are the most common and cause genital warts (Botha & Dochez, 2012).

The vaccines are recommended for prophylactic use, and should ideally be given before exposure to HPV, which is before sexual debut in girls aged 11–12 years. Possible routes for delivering the HPV vaccine are either through the routine Expanded Programme on Immunisation at the age of 12 years when the booster diphtheria and tetanus vaccination is

administered, or through the school system, e.g., to girls attending grade five (5) or six (6) (Botha & Dochez, 2012).

2.9 SUMMARY

Studies have shown that student nurses have a lack of knowledge and negative attitude towards cervical cancer. It is therefore of necessary to explore the knowledge and attitudes of student nurses regarding cervical cancer screening and HPV vaccine. Student nurses are the gatekeepers and the future of nursing. The population in general, and women in terms of this study, are educated by healthcare workers, or private doctors. It is therefore essential that healthcare professionals are willing and able to assist their patients by being able to offer comprehensive healthcare, which includes the provision of health education, particularly in terms of diseases that can be prevented. For women in rural areas, or those who lack education, it is the duty of healthcare workers to education is provided to promote health and prevent disease.



CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this chapter, the researcher describes the research method used to accomplish the aims and objectives of the study. The chapter explains the research design, setting, population, sample, data collection instrument, the reliability and validity, data collection process, data analysis, and ethical considerations. Research methodology is the method used to do research in a methodical manner (Struwig & Stead, 2013).

3.2 AIM OF THE STUDY

The aim of the study was to assess the knowledge and attitudes of fourth year undergraduate nursing students regarding cervical cancer screening.

3.3 OBJECTIVES

The objectives of this study were to:

- Assess the knowledge of fourth year undergraduate nursing students regarding cervical cancer screening.
- Describe the attitudes of fourth year undergraduate nursing students regarding cervical cancer screening.

3.4 RESEARCH METHODOLOGY

Quantitative research is used to enumerate research problems by producing mathematical data which can be twisted into statistics (Bergin, 2018). The quantitative method tends to take a broad view of the results from a larger target population by quantifying attitudes, opinions, behaviors, and other defined variables. Quantitative data collection methods include surveys and questionnaires (Wyse, 2011). The research approach of this study was of a quantitative

nature allowing the researcher a structured use of numerical data from a selected target group of the population to relate findings to the larger population under study (Maree, 2007).

3.4.1 Research Design

In this quantitative research study with a descriptive design, a questionnaire was used to collect data. The purpose of the descriptive design was to explore and describe the knowledge and attitudes of student nurses regarding cervical cancer screening. This method of data collection allowed for many respondents to be accessed in a limited time frame, promoting anonymity, was not time-consuming and the way in which data was collected was self-determining of the researcher (Brink, van der Walt & van Rensburg, 2017).

3.4.2 Research Setting

Brink, van der Walt and van Rensburg (2017) defines research setting as the place where data will be collected by the researcher. This study was conducted at a Nursing Department (ND) at a university in the Western Cape, South Africa. The ND forms part of the Faculty of Community and Health Sciences and offers a Bachelor of Nursing degree (four-year programme and a five-year extended programme) as accredited by the South African Nursing Council. This setting was chosen because it provided reasonable access to the cohort needed to fulfil the objectives of this study. The accessible population consisted of final year nursing students registered for the 2021 year of study and who had completed their midwifery curriculum outcomes in either the first or second semester of the year 2020.

3.4.3 Study Population

A study population is a group of people that are of interest to the researcher, meet the requirements the researcher is interested in studying and can be accessed by the researcher (Brink van der Walt & van Rensburg, 2017). The target population for this study included the total population of undergraduate fourth year nursing students (N=200), registered to study in

2021 towards the completion of the Bachelor of Nursing programme at a university in the Western Cape Province (Polit & Beck, 2020). This population was selected because they had completed their midwifery training and curriculum outcomes in either semester one or semester two in the year 2020, and therefore satisfied the requirements for this study. Data collection for the study was done at the end of the second semester, December 2021, and continued in January 2022.

3.4.3.1 Inclusion criteria

The inclusion criteria for this study refers to the important conceptions which determines the population of the study by the eligibility standards that confer the capacity to answer the research questions as accurately as possible (Polit & Beck, 2020). Therefore, the following students will be included in this study:

- Fourth year nursing students who have successfully completed their midwifery module in 2020.
- Students who willingly agreed to voluntarily participate in the study.

The students required adequate knowledge regarding cervical cancer screening to answer the research questions which would enable the researcher to achieve the objectives of this study.

3.4.3.2 Exclusion criteria

Polit and Beck (2020) refers to the exclusion criteria as characteristics additional to those found in study respondents who met the inclusion criteria, that can unfavourably influence the potential achievement of the study's objectives or outcomes. The following exclusion criteria were applied in this study:

- Student nurses who were not registered for the fourth year of study in the 2021 academic year.
- Students who had not completed the midwifery module in 2020.

- Students who declined to participate in this study.

3.4.4 Sampling Techniques

Sampling is a technique used to find a smaller group that is representative of the larger population (Brink van der Walt & van Rensburg, 2017). For small target groups, the whole population may be included in the study (Brink van der Walt & van Rensburg, 2017). A cross-sectional quantitative descriptive study design was used for this study. Convenience sampling method was applied and the whole population (N=200) was included. The sample size was 200 (n=200) fourth year undergraduate students.

A descriptive study involves conducting a survey to gather information from the respondents. This type of research is useful when the researcher is looking for information about the respondents' perceptions and attitudes. There are various methods that can be used to conduct a survey, such as online, in-person, or over the phone (Abdallah, Hummeida, & Elmula, 2016). In this study the researcher handed the questionnaire to the respondents in-person at the venue allocated to her by the class lecturer. The researcher chose this sampling method since the entire population was required for this study, a survey or quantitative design requires enough respondents to obtain adequate information to answer the research question and objectives (Abdallah, Hummeida, & Elmula, 2016).

3.4.5 Data Collection

Data collection is the process of collecting and organising data collected from the study respondents (Polit & Beck, 2017). Data collection is the process of gathering data from those respondents who agree to be part of the study. Data for this study was collected at a Nursing department, at a university in the Western Cape Province, using a questionnaire.

3.4.5.1 Data collection instrument

In this study quantitative data was collected from fourth year nursing students in a Bachelor of Nursing Programme at a Nursing Department at a university in the Western Cape Province. The data collection instrument is the tool used to gather data, it consists of questions designed to answer the research question and objectives of the study (Polit & Beck, 2020). The self-administered questionnaire in this study aimed to determine the knowledge and attitudes of the respondents regarding cervical cancer screening. The self-administered questionnaire (Annexure C) was originally developed by Keita Susan from a study to determine nurses' knowledge, attitude and practices regarding cervical cancer screening and prevention methods at two tertiary hospitals in Nairobi, Kenya. The study was conducted between May 2016 and July 2016, and the questionnaire from that study was used with permission and with minor modifications to address the objectives of this study.

The questionnaire consisted of three sections as follows:

- Section A focused on measuring the demographic data of the respondents which included the gender, age group, among others.
- Section B focused on measuring the knowledge acquired regarding cervical screening by the students during the four-year nursing undergraduate program.
- Section C focused on measuring the attitude of student nurses toward cervical screening.

All the above aspects could have been influenced by both theoretical knowledge obtained during lecture time, plus the clinical training received during rotations in clinical practice. The questionnaire took a maximum of 30 minutes to complete and consisted of thirty-seven questions which were divided over three sections as indicated in Table 3.1:

Table 3.1: Sections of the instrument

Section A 1-4	Demographic data
Section B 5-9	Knowledge of cervical cancer
Section C 10-37	Attitudes towards cervical cancer screening

3.4.5.2 Pre-testing of questionnaire

The aim of pre-testing the research instrument was to identify sensitivity, consistency, and acceptability of the survey questions, identify shortcomings of the tool and reduce errors that could occur in the main study (Brink van der Walt & van Rensburg, 2017). Pretesting of the questionnaire establishes if the study is feasible in terms of availability of the identified respondents, time available and the presence of financial resources. The authors also indicate that a pilot study is necessary to identify problems that could occur and interfere with the study's validity. Hence, the pilot study was conducted before the main study to determine any concerns regarding the data collection instrument (Gray, Grove & Sutherland, 2017). Pre-testing also allows the researcher to have an experience with the respondents and the setting, it further allows test the vigorousness, validity, and reliability of the researcher's instrument. In this study, the pre-test was done by administering the questionnaire to respondents who met the inclusion criteria. On a day that the respondents were available on campus, the researcher met with the ten students chosen to be part of the pre-test and explained the aims and objectives of the study, provided the information sheet and consent form and once consent was obtained, proceeded to administer the questionnaire. These responses were included in the main study as there were no indicated changes to the data collecting tool. On completion of the entire study the questionnaires were submitted to a statistician for evaluation to ensure content and face validity and reliability.

3.4.5.3 Validity and reliability

Heale and Twycross (2015) explain that accuracy in quantitative research is achieved through measuring the validity and reliability of the study. Validity is well-defined as the degree to which a concept is precisely measured, while reliability points to the extent to which the research instrument was constant and would generate the same results if used in the same context on recurring occasions. There are three main types of validity namely, content, construct, and criterion validity (Heale & Twycross, 2015). Face validity was applied in this study by checking with respondents whether they understood the questions, which would ascertain if the instrument correctly appraised what it was supposed to measure. Content validity was guaranteed by including important findings from the literature review in the research instrument to precisely measure all aspects of the phenomenon (Heale & Twycross, 2015). The instrument was based on a study conducted in Nigeria using nursing staff working in two hospitals, and to ensure its content validity, a total of 10 nursing students in the Nursing Department were included in the pre-testing phase. Reliability was achieved when the instrument was used repeatedly under the same conditions, and it produced similar results (Kumar, 2011). Internal consistency of reliability is an expansively used reliability approach among nursing researchers (Polit & Beck, 2020). Calculation of the Cronbach's Alpha coefficient, also known as Coefficient Alpha, is normally used to evaluate the internal consistency. For this study, the Cronbach's alpha value was 0,76. An alpha value of 0.76 suggests that the items in the measure are relatively consistent with each other, indicating a moderate to high level of internal consistency confirming the reliability. In other words, the items in the measure are measuring the same underlying construct or concept consistently (Cronbach, 1951).

3.4.6 Data Collection Process

Prior to commencing data collection ethical approval was applied for and granted by the Humanities and Social Sciences Research Ethics Committee (HSSREC/HS20/10/65), approval period 14 July 2021 to 14 July 2024. Permission to conduct the study was granted by the university Registrar (ref: UWC 5049145814814384905) approved on the 16 August 2021, and by the Head of the Nursing Department at the university of interest.

The researcher met with respondents in a venue on campus as arranged and explained the study and the data collection procedure. Hard copies of the study information sheet (Annexure A), consent form (Annexure B) and the questionnaire (Annexure C) were provided. Access to campus had to be obtained via administrative processes in place during the global pandemic of COVID 19. Respondents were allocated to a predetermined venue and time which allowed for social distancing, sanitising of hands and wearing of masks to maintain adherence to the COVID 19 protocols of the university. Informed written consent was obtained from respondents prior to them commencing with the questionnaire. The researcher administered the 33-item questionnaire to respondents at a time and place convenient for them. Data collection commenced in December 2021 and continued after the vocation period in January 2022, when a maximum of 124 respondents completed the questionnaires. Data collection took place during a period of four to eight weeks.

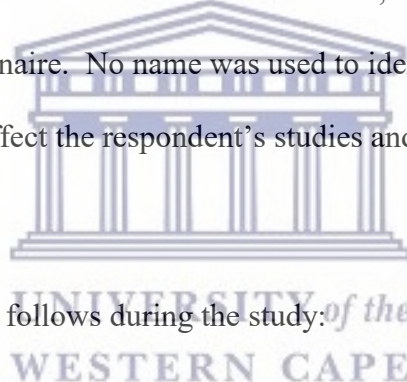
3.4.7 Data Management and Analysis

When the respondents were done completing the questionnaires, the researcher checked them for completeness and if the consent form was signed by the respondent. The researcher captured the data on excel Microsoft and numbered the questionnaires one to one hundred and twenty-four. The information was checked by the researcher and the statistician for data cleaning and thereafter the data were analysed using the statistical package of Social Science statistic version 28 for the analysis. Data was summarised using descriptive statistics and frequency and

percentage of categorical variables were presented in tables (Mishra et al., 2019). On completion of the analysis the questionnaires were locked in a protected cabinet to which only the researcher has access. The documents will be kept for a period of five years after which they will be destroyed as stipulated in the policy of the university where the study was conducted.

3.5 ETHICAL CONSIDERATIONS

The researcher adhered to the ethical principles of autonomy- respondents were participating independently, no respondents were forced to participate, beneficence- the researcher did no harm to the respondents in the duration of the study. Confidentiality- the information shared by the respondents was kept confidential between the researcher, supervisor and the statistician, anonymity- the questionnaires were de-identified, no names were used, numbers were allocated to each questionnaire. No name was used to identify individual questionnaire. and justice- the study did not affect the respondent's studies and respondents were treated equally (Sims, 2010).



Ethical principles adhered to as follows during the study:

Respect for persons (dignity and autonomy)

Voluntary informed consent - The researcher explained the details of the study in English and the forms were in English. Every participant voluntarily signed informed consent before commencement of the study. Ethical principles adhered to as follows during the study:

Voluntary participation- Respondents were not forced or threatened to be part of the study.

Participation was voluntary (Department of Health Ethical Guidelines, 2015).

Distributive justice (equality)

Right to withdrawal - Those who refused to participate or to withdraw from the study at any stage were informed that in doing so their studies were not affected in any way.

Respect for persons (dignity and autonomy)

Privacy - No survey was directly linked to a participant. Uncompleted questionnaires were excluded from the study.

Confidentiality - The confidential information shared by the respondents was shared among the research team, for example the supervisor and the statistician.

Dissemination of results: Respondents were told that they will be provided with a copy of the final report upon request (Department of Health Ethical Guidelines, 2015).

3.6 SUMMARY

In this chapter, the researcher included the introduction, methodology, described the research approach, study design, setting, population, sampling, data collection process, inclusion and exclusion criteria, data collection instrument, instrument validity, reliability and pre-test, data management, data analysis and ethical considerations. The next chapter presents the results of the study.

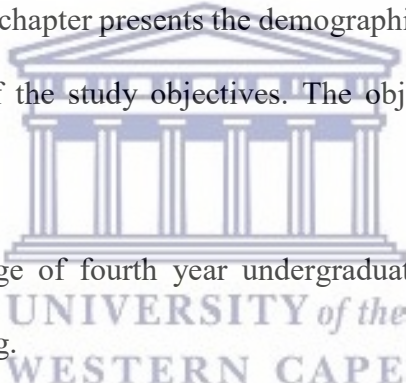


CHAPTER 4

RESULTS

4.1 INTRODUCTION

This chapter includes the results of the quantitative data collected, with a discussion based on the analysis. The researcher distributed 200 (N=200) questionnaires, of which 124 questionnaires were returned. The response rate in this study was 77.5% (n=124). The purpose of this study was to assess the knowledge and describe the attitudes of student nurses at a university in the Western Cape Province regarding cervical cancer screening. Data was collected by means of a self-administered questionnaire (Annexure C), which was coded and captured on an Excel spreadsheet. The data was analysed, using SPSS version 28 with the assistance of a statistician. This chapter presents the demographic data followed by the results, presented according to each of the study objectives. The objectives of this study were as follows:

- 
- To assess the knowledge of fourth year undergraduate nursing students regarding cervical cancer screening.
 - To describe the attitudes of fourth year undergraduate nursing students regarding cervical cancer screening.

Responses to the open-ended questions describing the knowledge and attitudes of nursing students regarding cervical cancer screening are presented separately. The results of this study are based on a sample of 124 (n=124) fourth year undergraduate student nurses who voluntarily participated in the researcher-administered questionnaire. The results of this study will be outlined using tables, graphs, and charts.

4.2 DEMOGRAPHIC DATA

In this study 65% (n=81) of the respondents were females and 35% (n=43) were males. The gender profile and ages of the respondents are illustrated respectively in Figure 4.1 & Table 4.1 because gender and educational level of the respondents are numerical variables. Gender, a categorical variable, will be illustrated using a pie chart (Figure 4.1).

4.2.1 Gender

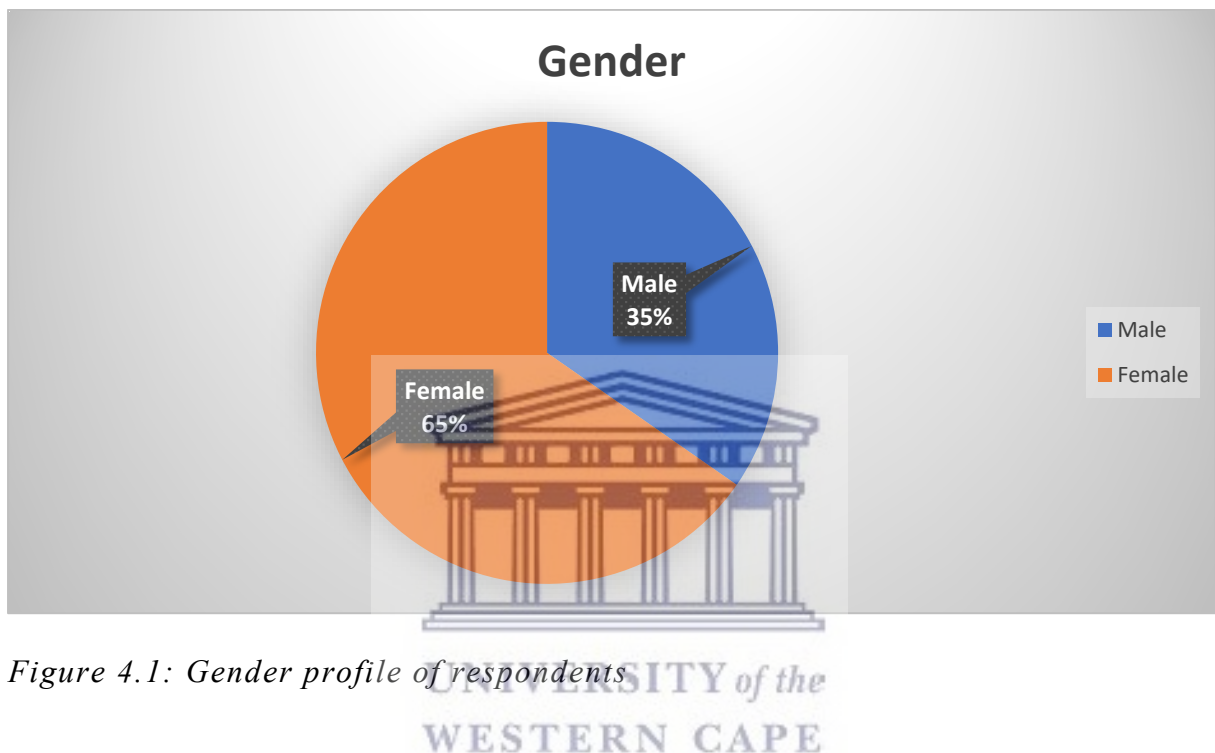


Figure 4.1: Gender profile of respondents

4.2.2 Age

Table 4.1 below illustrates the minimum age of respondents at 17 years of age and the maximum age of respondents was 36 years of age. There was however a total of nine (n=9) respondents who did not complete the age category on the data collection instrument; they are classified as unknown. The mean age group of the respondents was 22 years of age as illustrated in Table 4.1. The minimum age of the respondents was seventeen and the maximum age was thirty-six with a mean age of 23.8 years with a standard deviation of 3.655 years.

Table 4.1: Age of respondents

Age	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Standard Deviation Statistic
Age in years	115	17	36	23.82	3.655

4.2.3 The Marital Status of Respondents

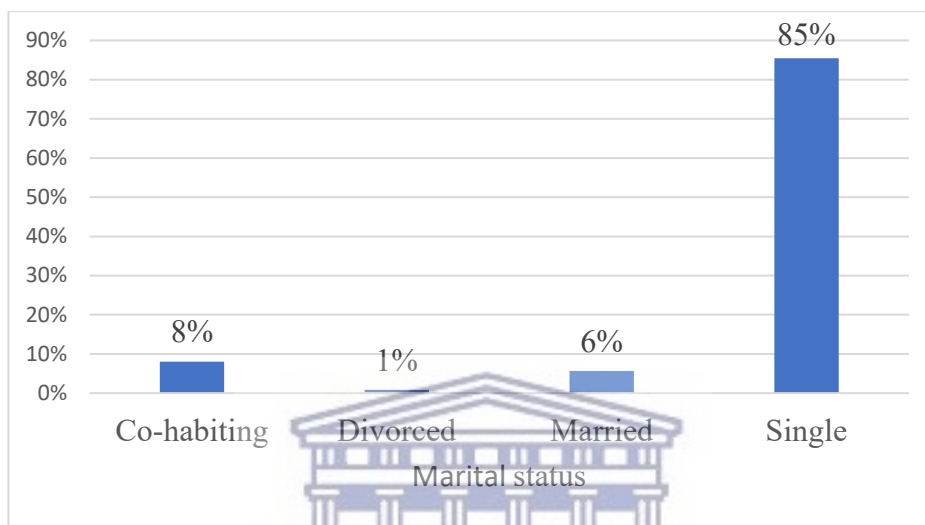


Figure 4.2: Marital profile of respondents

Most of the respondents at 85% (n=106) indicated that they were single, and one respondent (1%; n=1) was divorced (Figure 4.2).

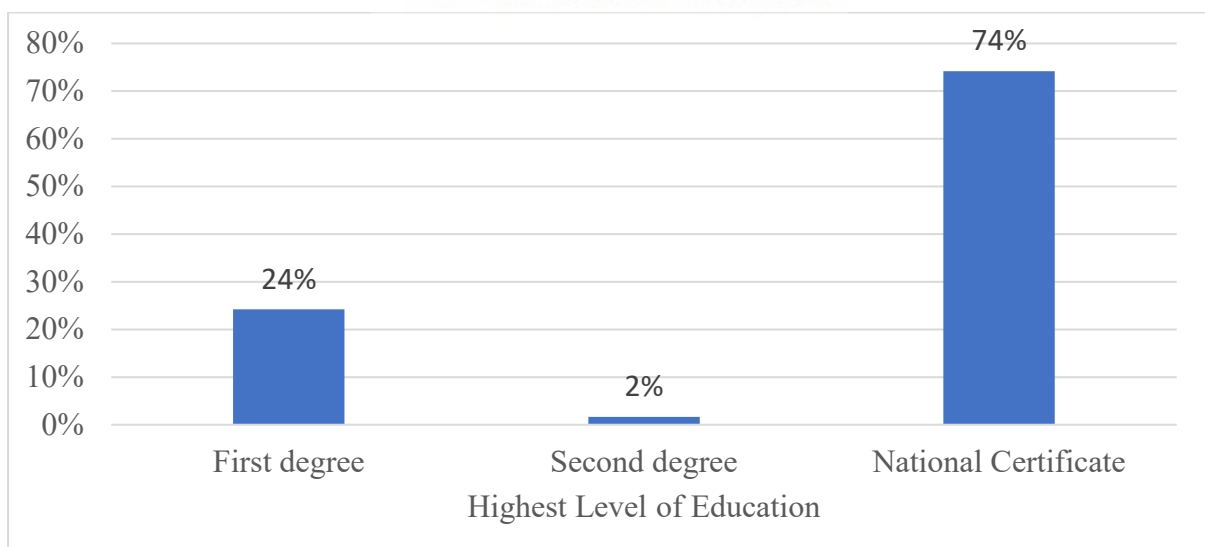


Figure 4.3: Education level of respondents

Indicated in figure 4.3 it is evident that from the 124 respondents (n=124), 74% of respondents (n=92) were studying toward their first degree having met the minimum requirements for admissions to a bachelor's degree at a university. Two respondents (n=2; 2%) already graduated with a previous degree and were completing a third degree. Of the 124 respondents a total of 24% of respondents (n=30) were studying towards a second degree.

Table 4.2: Summary of the gender, marital status, and educational level of respondents

Summary		n=	Percentage
Gender	Female	81	65%
	Male	43	35%
Marital status	Co-habiting	10	8%
	Divorced	1	1%
	Married	7	6%
	Single	106	85%
Highest Level of Education	First degree	30	24%

A total of 87.5% (n=109) of students attended the information and data collection session, and data was collected from a second group of students (12.5%; n=15) at their clinical placement facilities. One hundred and twenty-four (n=124) respondents completed the surveys that were returned overall.

4.3 Knowledge of cervical cancer and prevention

The responses indicated that 61% (n=75) had good knowledge of cervical cancer screening while 6.5% (n=8) of the respondents reported their knowledge to be exceptionally good. Only 4.1% (n=5) of respondents indicated that their knowledge was extremely poor while 28.5% (n=14) of respondents reported poor knowledge about cervical cancer screening. Respondents were also asked to rate their knowledge of prevention of cervical cancer using a Likert scale indicating as follows: 1 = very poor, 2 = poor, 3 = good and 4 = exceptionally good. A total of 3.3% (n=4) of the respondents reported having extremely poor knowledge of cervical cancer

prevention and 79.9% (n=98) of respondents reported having good knowledge of cervical cancer prevention (Table 4.3).

Table 4.3: Knowledge of cervical cancer screening and prevention

Knowledge		Very poor	Poor	Good	Very good
How do you rate your knowledge about cervical cancer screening?	n =	6	35	75	8
	%	5%	28.0%	60.4%	6.6%
How do you rate your knowledge on prevention?	n =	5	14	98	7
	%	3.3%	11.4%	79.7%	5.7%

Ella et al., (2020) concluded in a study that examined the knowledge, attitudes, and practice of cervical cancer screening among female undergraduate nursing students at the University of Calabar, Nigeria, that nursing students had good knowledge (93.3%) of cervical cancer screening. The students exhibited a poor attitude towards cervical cancer screening as only 26.7% displayed a positive attitude while the majority (73.3%) did not deem it necessary to screen.

A study done to examine the knowledge, attitude and practice of cervical cancer screening among female undergraduate nursing students in Department of Nursing Science, University of Calabar, Nigeria. Using simple random sampling technique, a sample size of 212 nursing students (Ella, Duke, Esienmoh, Nyah, & Uka, 2020). Undergraduate nursing students had good knowledge (93.3%) of cervical cancer screening. The students exhibited poor attitude towards cervical cancer screening as only (26.7%) displayed positive attitude, while majority (73.3%) did not find it necessary to screen. Only (5%) had been screened for cervical cancer while (95%) did not undergo any screening test. The findings of the study identified that poor knowledge and a lack of positive attitude towards effective screening prevents adequate response to the rising incidence which contributes to late presentation (Ella et al., 2020).

4.4 Knowledge regarding cervical cancer screening and prevention

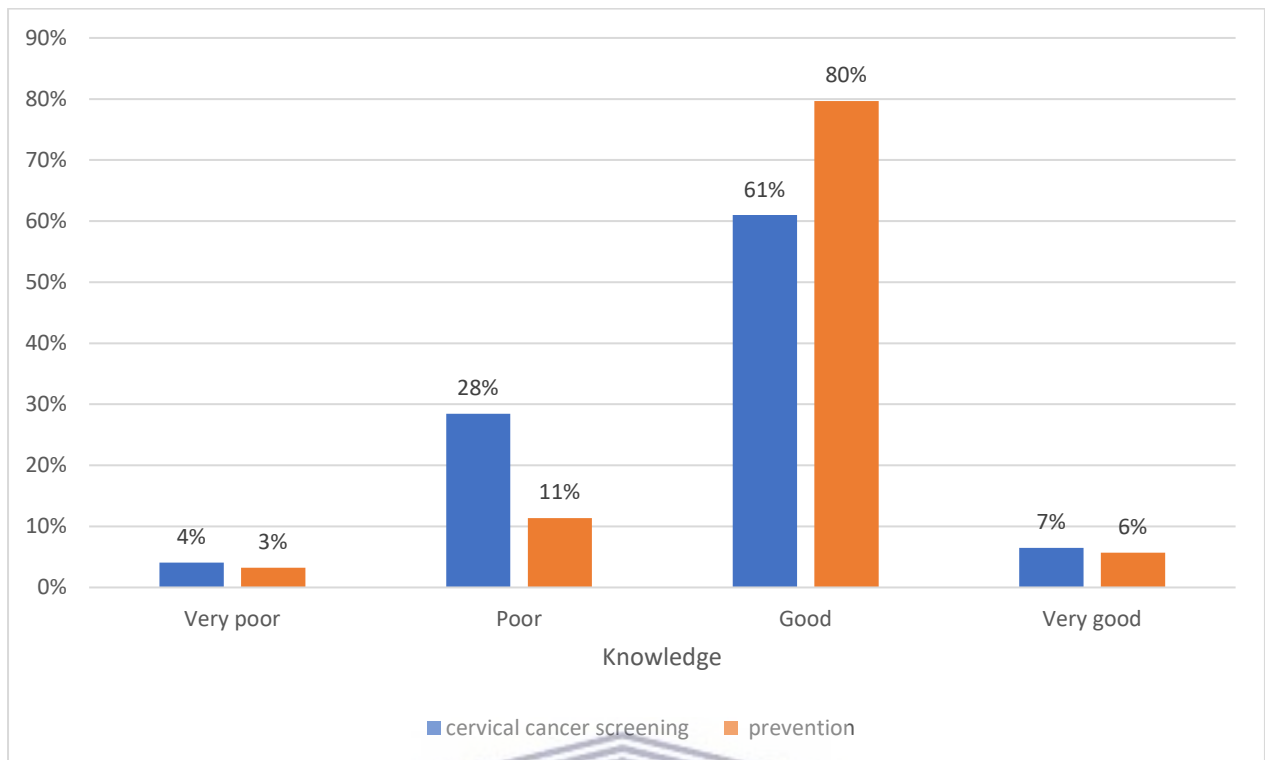


Figure 4.4: Knowledge regarding cervical cancer screening and prevention

Figure 4.4 demonstrates that most of the respondents (74%; n=92) are studying nursing as their first degree, having entered university immediately after completing their senior certificate (Grade 12). This is due to the lack of information sessions or seminars provided by the community, or the health care sector in the community. This study revealed that 48% (n=59) of the respondents had heard or learned about cervical cancer and the prevention thereof during their nursing studies. This knowledge attainment could have been during theory sessions in the classroom or during their clinical placement at health facilities, for example, midwifery. Only 1.6% (n=2) of the respondents had heard about cervical cancer through attendance of seminars or workshops.

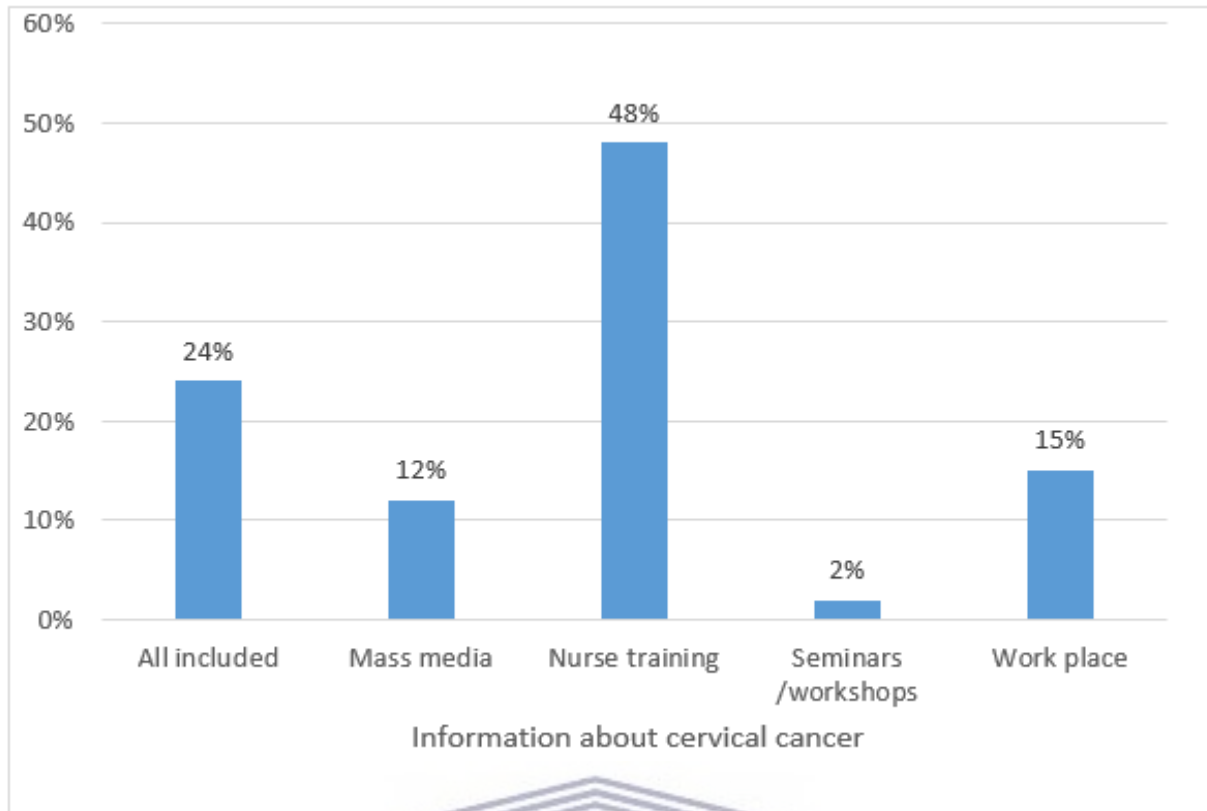


Figure 4.5: How knowledge about cervical cancer was gained.

A total of 30% (n=24) of the respondents reported hearing about cervical cancer from mass media, nurse training, the workplace, workshops, and seminars, as illustrated in Figure 4.5. As fourth-year undergraduate nursing students there is an expectation that they would have a degree of knowledge regarding cervical cancer screening and prevention.

Evidence suggests that the increasing incidence of cervical cancer is associated with a poor attitude towards preventive practices by nurses. This is despite the fact that nurses should be custodians of health education in general and preventive practices, such as cervical cancer screening, in particular Nursing students who are in the process of studying need to be highly aware and knowledgeable about cervical cancer screening and develop a positive attitude towards such practices (Ella et al., 2020). There remains to be a high prevalence of cervical cancer in developing countries (Randall & Ghebre, 2016; Small et al., 2017). It is expected that

cervical cancer may account for more than 95% of all cancer related death by 2030 in these countries (Alfaro et al., 2021).

In an environment like that of Nigeria, where late presentation is common, where most cervical cancers are only detected by women when symptoms begin to manifest, there is a need for adequate knowledge and a positive attitude towards the practice of cervical cancer screening by health workers, especially nurses and nursing students in training, who will in turn educate the public. Nurses and other health workers play an integral role in health promotion and disease prevention in society because they are at the forefront of health education. It is expected therefore that they will possess adequate and current knowledge, sustain a good attitude and practice for health preventive practices in general, and for cervical cancer screening in particular; only then can they effectively play their role (Abebaw et al., 2022). The World Health Organization (2022) affirms that the high mortality rate due to cervical cancer globally could be reduced through a comprehensive approach that includes effective screening for prevention, early diagnosis, and treatment programme.

4.5 PAP SMEAR USE FOR DETECTION OF CERVICAL CANCER AND CURABILITY

Respondents were asked if a pap smear is used to detect cervical cancer and if found early, could it be cured.

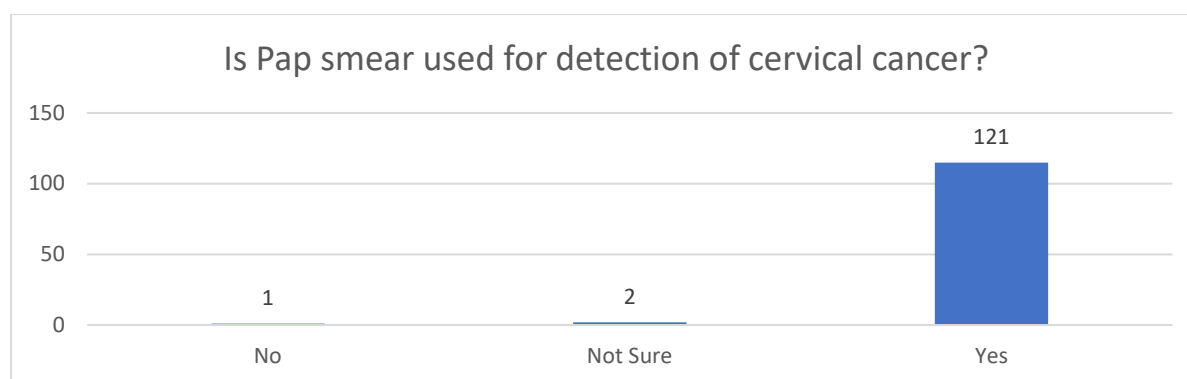


Figure 4.6: Detection of cervical cancer.

The responses showed that 115 respondents (97.5%; n=121) indicated that pap smears can be used for the detection of cervical cancer. Only one (0.8%; n=1) respondent indicated ‘no’, and two (1.6%; n=2) respondents indicated that they were not sure if pap smears can be used for the detection of cervical cancer. In Figure 4.6 the responses from respondents regarding their knowledge as to whether cervical cancer can be cured if detected early are displayed. A total of 97.5% (n=121) of the respondents believed cervical cancer can be cured if detected early enough, while 0.8% (n=1) did not believe that cervical cancer can be cured if detected early, and 1.6% (n=2) were not sure if cervical cancer could be cured if detected early (Figure 4.7).

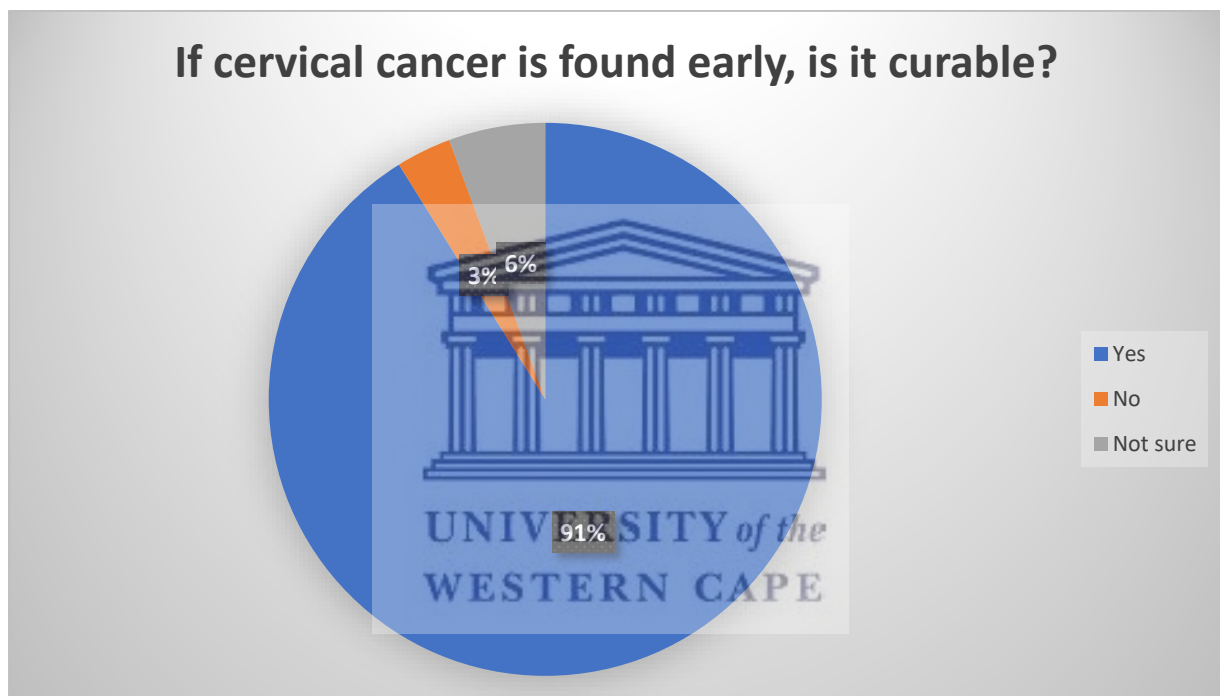


Figure 4.7: Is cervical cancer curable?

Cervical cancer hardly ever shows symptoms and is also called a “quiet” disease. Nevertheless, it is crucial to point out that it is a cancer that can be detected and prevented. A regular gynecological exam is dependable, and a simple measure to detect cervical cancer on time. With Pap smear screening, cervical cancer can be prevented. If discovered on time, it can be treated successfully (Franjic, 2019)

4.6 SYMPTOMS OF CERVICAL CANCER

As with any other illness, there are signs and symptoms associated with a diagnosis. The knowledge of students regarding cervical cancer was further tested by asking them if they knew that cervical cancer can present with or without symptoms. More than 50% (n=62) of the respondents filled in that cervical cancer can present without symptoms. A total of 31% (n=38) indicated that cervical cancer cannot present without symptoms while 19% (n=24) of the respondents were not sure if cervical cancer can present with or without symptoms as illustrated in Figure 4.8.

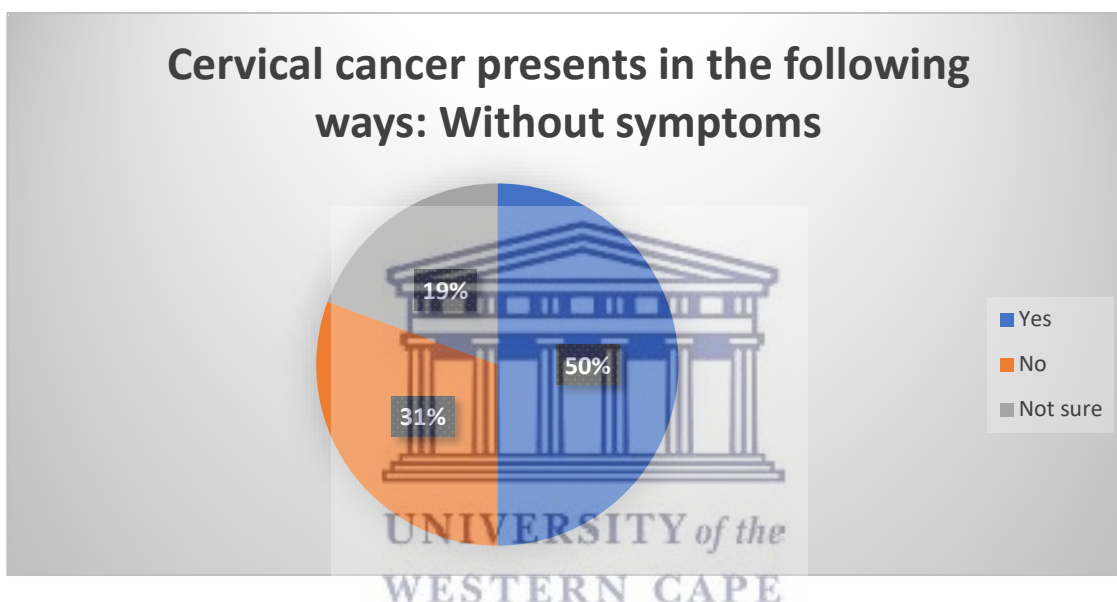


Figure 4.8: Knowledge of symptoms of cervical cancer

A few symptoms were presented and students were asked if cervical cancer can present with these symptoms: foul blood stained vaginal discharge, irregular vaginal bleeding and post coital bleeding. A total of 58% (n=69) of the respondents suggested that post coital bleeding is a symptom of cervical cancer. A total of 22% (n=26) were not sure whether post coital bleeding is a symptom or not. An increased number, 83% (n=99) of the respondents believed that irregular vaginal bleeding is a symptom of cervical cancer. However, 8% were not sure as to whether or not irregular bleeding is a symptom of cervical cancer. Foul blood-stained vaginal bleeding also obtained a high positive respond rate as 81% of the students reported it to be a

symptom of cervical cancer screening; only 8% did not believe that it is a symptom of cervical cancer; (see Table 4.4, Figure 4.9; Figure 4.10) .

Table 4.4: Symptoms of cervical cancer

Cervical cancer symptoms		Yes	No	Not sure
Post-coital bleeding	N	74	24	26
	%	59.6%	19.4%	21%
Foul blood-stained vaginal bleeding	N	97	13	14
	%	78.2%	10.5%	11.2%
Irregular vaginal bleeding	N	99	15	10
	%	79.8%	12.1%	8.1%

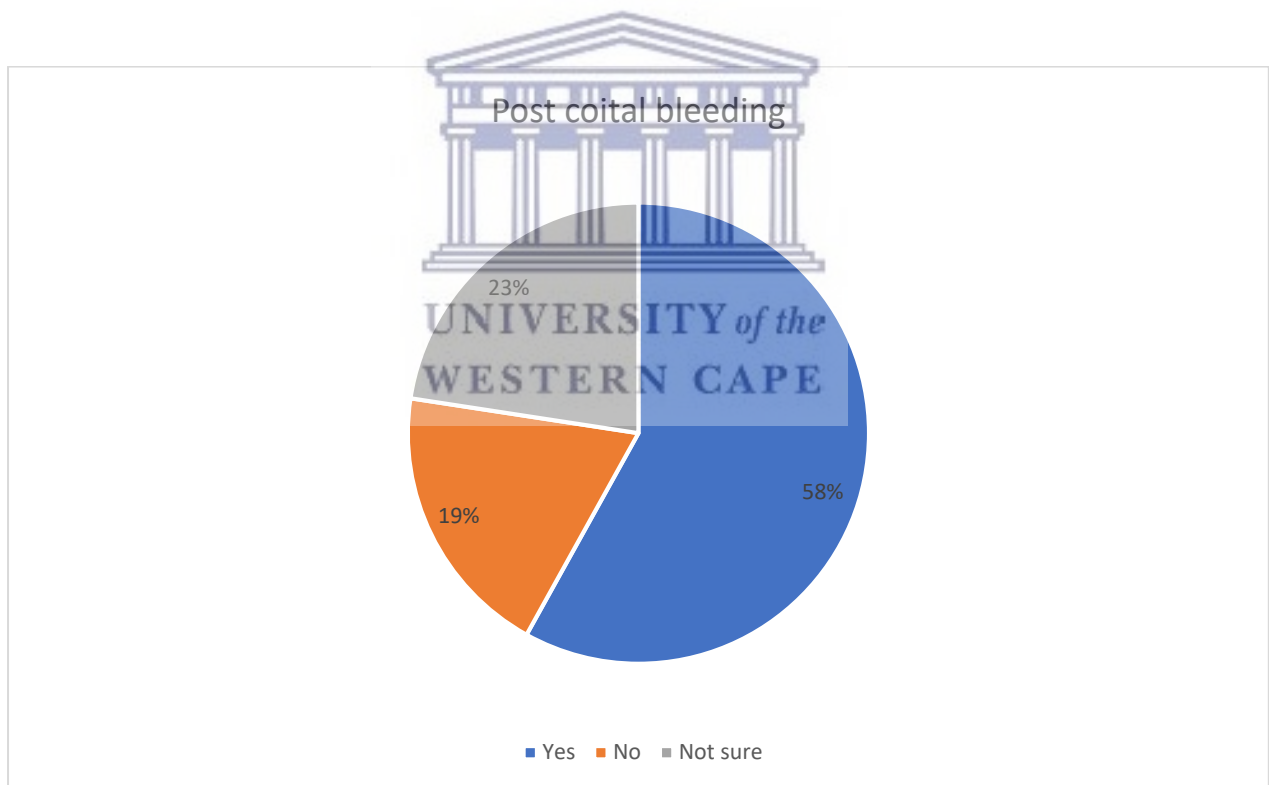


Figure 4.9: Post coital bleeding

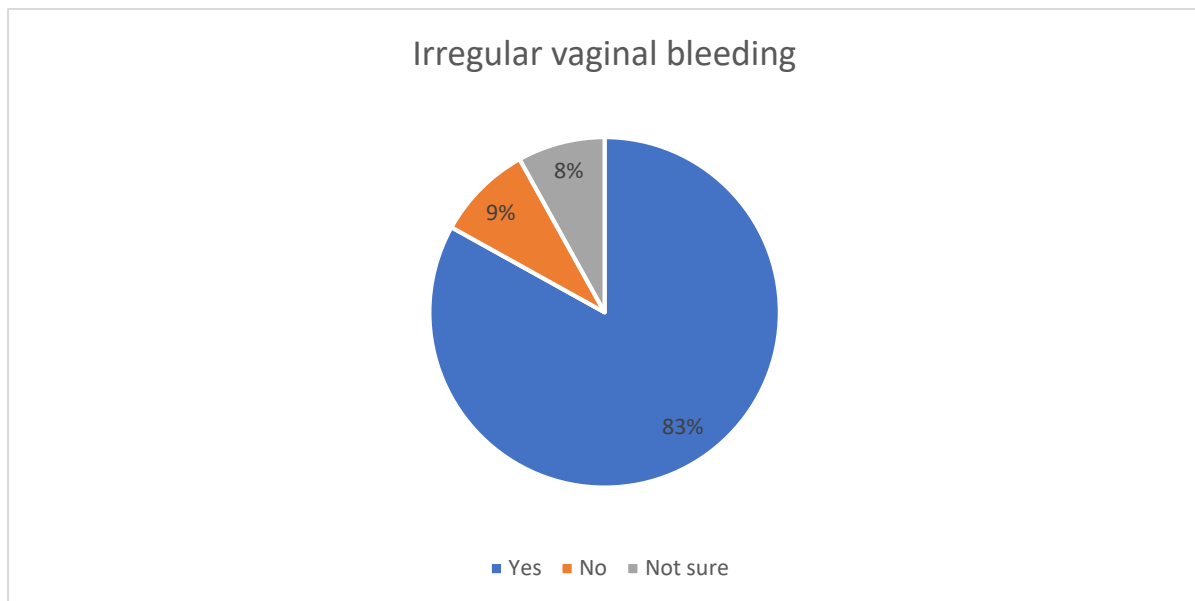


Figure 4.10: Irregular bleeding

According to the fact sheet provided by the Human Papillomavirus Information Center (2018), it is estimated that every year 316 women are diagnosed with cervical cancer and 158 die because of the disease in Saudi Arabia. Various common risk factors known to be universally linked with cervical cancer include sexually transmitted diseases (mainly HPV and others, human immunodeficiency virus & herpes simplex virus), reproductive and sexual factors (multiple sexual partners, early age at first sexual intercourse, early age at first delivery, parity, and oral contraceptive pills), behavioral factors (smoking and obesity), and host factors (genetic sensitivity). Irregular vaginal bleeding, foul-smelling vaginal discharge, and contact bleeding are documented as the main symptoms of cervical cancer, and in many cases, women with cervical cancer report no symptoms (Heena et al., 2019).

4.7 RISK FACTORS OF CERVICAL CANCER

Multiple risk factors were included for respondents to identify whether the risk factors were associated with cervical cancer. Risk factors included were early marriage, HIV infection, STI, multiple sexual partners, and HPV infection among others. A total of 83.1% (n=103) respondents believed that HPV is a risk factor for cervical cancer, 4% (n=5) respondents did

not believe that HPV infection is a risk factor for cervical cancer. Respondents reported (60.5%; n=75) that low social economic class is not a risk factor to having cervical cancer. A minority of 12.1 % (n=15) were unsure whether STI is a risk factor for cervical cancer. A total of 27.4% (n=28) were not sure if early sexual realtions could be a risk factor for cervical cancer. See Table 4.5 for a summary.



Table 4.5: Risk factors of cervical cancer

Are the following risk factors of cervical cancer?		Yes	No	Not sure
Human Papilloma virus infection	n	103	5	16
	%	83.1%	4.0%	12.9%
Multiple sexual partners?	n	75	28	21
	%	60.5%	22.6%	16.9%
Early sexual debut?	n	47	42	35
	%	37.9%	33.9%	28.2%
Many pregnancies/deliveries?	n	51	42	31
	%	41.1%	33.9%	25.0%
Low social economic class?	n	26	75	23
	%	21.0%	60.5%	18.5%
Early marriage?	n	21	81	22
	%	16.9%	65.3%	17.7%
Sexually transmitted infections?	N	95	14	15
	%	76.6%	11.3%	12.1%
Human immunodeficiency virus infection?	N	97	10	17
	%	78.2%	8.1%	13.7%

4.8 HOW OFTEN SHOULD WOMEN HAVE A PAP SMEAR TEST DONE

Generally, as indicated in Figure 4.11, 43.5% (n=54) of respondents indicated that pap smears should be done every three years. In this group 4.8% (n=6) of the respondents reported that pap smears should be done yearly, while 13.7% (n=17) reported that Pap smear screening should only be done when a patient presents with symptoms. Those who reported that Pap smear should be done with symptoms are those who were not sure about how often women should have a pap smear (13.7%; n=17). There was an indication by 24.2% (n=30) respondents that they believe that Pap smear should be done every two years.

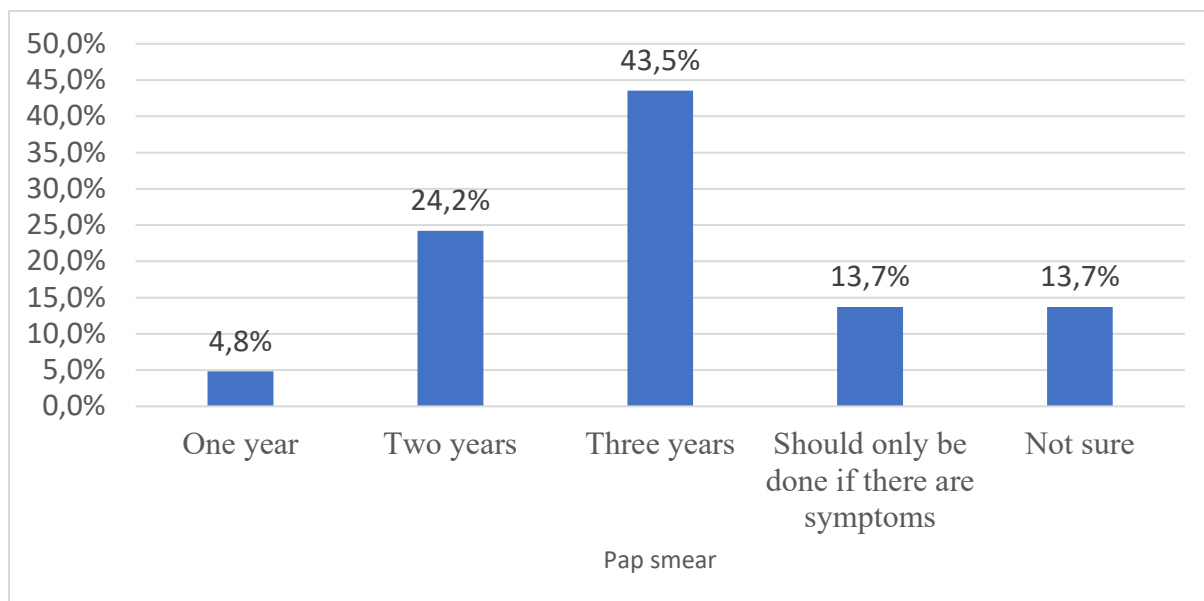


Figure 4.11: Pap smear screening intervals

Testing for HPV is recommended using an organised screening scenario to identify women with precursor lesions, or asymptomatic cervical cancer, older than 30 years of age, and it can be performed every 5 years (Zeferino et al., 2018). The American Academy of Family Physicians and the U.S. Preventive Services Task Force applaud beginning screening in immuno-competent, asymptomatic women from 21 years of age. Women 21 to 29 years of age should be inspected every three years with cytology alone (“Cervical Cancer Screening | AAFP”, 2018). Women 30 to 65 years of age should be screened every five years with cytology plus HPV testing or every three years with cytology alone. Screening is not suggested for women younger than 21 years or in women older than 65 years with an adequate history of negative screening results (Rerucha, Caro & Wheeler, 2018). The screening policy for cervical cancer in South Africa was established in 2000 and involves three Pap smears per life expectancy, beginning at 30 years of age and occurring at 10-year intervals. The smear is repeated after 12 months if any anomaly is observed. If the anomaly persists or if a high-grade lesion is detected, the patient is transferred for a colposcopy (Mbulawa, Coetzee & Williamson, 2015).

4.9 METHODS USED FOR SCREENING CERVICAL CANCER

The general knowledge among respondents regarding acetic acid as a method of screening for cervical cancer was good. A total of 67% (n=83) of respondents reported acetic acid as a method of screening. One respondent (1%; n=1) reported that acetic acid is not a method used to screen for cervical cancer and 32% (n=40) of respondents were not sure if acetic acid was used to screen for cervical cancer. This question was followed by a question related to colposcopy. The group (56%; n=70) reported colposcopy as a screening method for cervical cancer. None of the respondents said no or were not sure if colposcopy is used to screen for cervical cancer. Cervical cancer biopsy was the last question on the methods used to screen for cervical cancer. A total of 94% (n=117) respondents reported cervical cancer as a method of screening for cervical cancer. None of the respondents believed that a cervical biopsy is a method used to screen for cervical cancer while 6% (n=7) were not sure as illustrated in Figure 4.12 and Table 4.6.

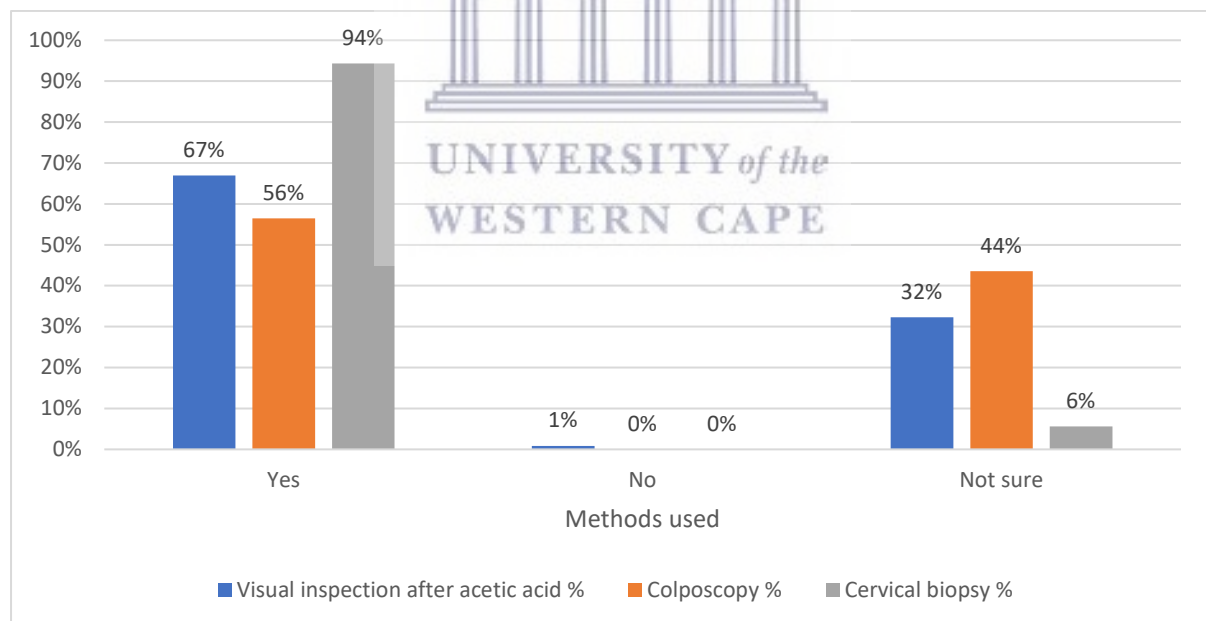


Figure 4.12: Methods used for cervical cancer screening.

Table 4.6: Methods used for cervical cancer screening.

Methods used for screening cervical cancer		Yes	No	Not sure
Visual inspection after acetic acid	n	83	1	40
	%	67%	1%	32%
Colposcopy	n	70	0	54
	%	56%	0.0%	44%
Cervical biopsy	n	117	0	7
	%	94%	0.0%	6%

Three types of tests are currently available and are widely used for the screening of cervical cancer. These include tests for HPV, cytology based Papanicolaou test (Pap test), and unaided visual inspection with acetic acid (VIA). Nevertheless, public awareness of these tests, especially in developing countries, is unfortunately limited (Heena et al., 2019). Zeferino et al. (2018) guides that HPV-DNA test refers to any test for the detection of oncogenic HPV-DNA in biological specimens obtained by a cervical smear or brushing. The detection of non-oncogenic HPV types is not clinically relevant in this setting. The use of HPV-DNA tests in cervical cancer screening is beneficial because it is more sensitive, identifying more women with precursor lesions and cancer than the conventional Pap smear. On the other hand, because of its lower specificity, more women may be unnecessarily referred for colposcopy, which leads to an increase in costs and unwanted morbidity. One advantage of HPV-DNA tests following an abnormal Pap smear is their high negative predictive value. When oncogenic HPV-DNA is undetectable, the occurrence of precursor lesions or cervical cancer is unlikely (Zeferino et al., 2018).

4.10 SCREENING IN HEALTH CARE FACILITIES

During their training nursing students are placed within health care facilities to complete their competencies as directed by SANC. Respondents were asked if their facilities offered cervical cancer services. A total of 74.3% (n=75) of respondents reported that their facilities offered cervical cancer screening, while 17.8% (n=18) of respondents were not sure whether their

facilities offered the service while 7.9% (n=8) reported that their facility does not offer cervical cancer screening (Figure 4.13).

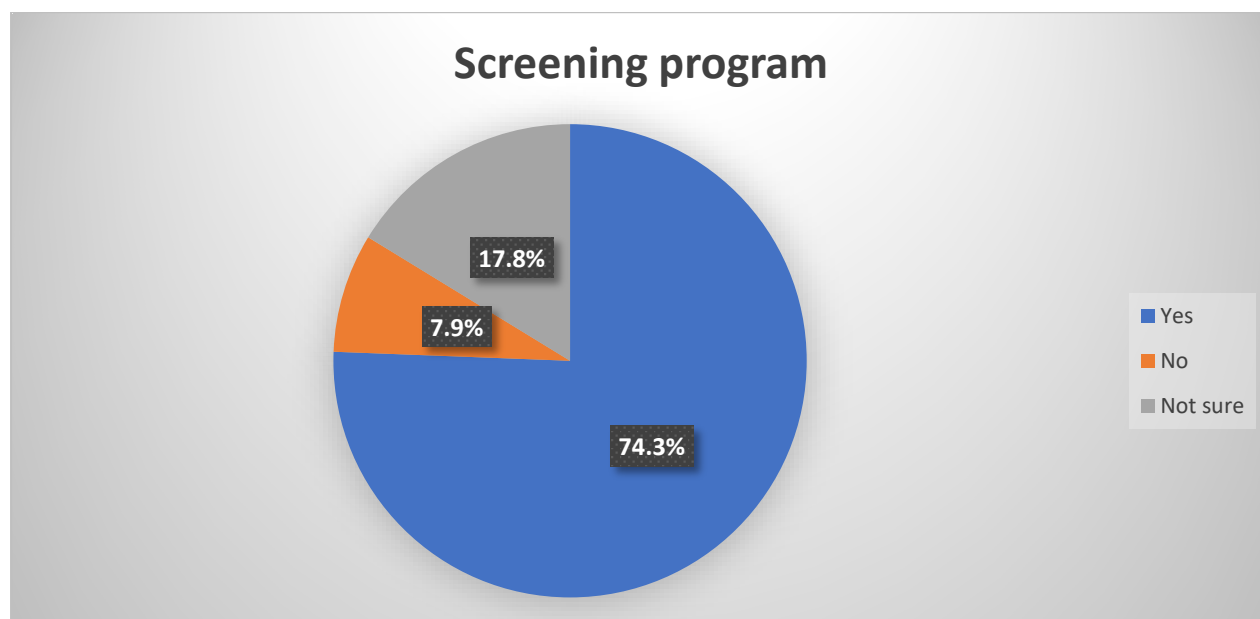


Figure 4.13: Screening programs in health facilities

4.11 RECOMMENDATION OF SCREENING PROGRAMME IN THE HEALTH FACILITY

The previous question inquired from respondents as to whether the health facilities where they are placed to meet their clinical learning outcomes offered cervical cancer screening. In this question respondents were asked if they recommended cervical cancer screening if their clinical placement health facility did not offer the service. A total of 123 (n=123) respondents reported that they would recommend a cervical cancer screening in their clinical placement health facility. Only one (1%; n=1) respondent did not recommend the cervical cancer screening programme in the health facility due to not being sure if they could recommend a cervical cancer screening programme in their health facility. This was followed by how often they or their partners (male (n=43) and female (n=81) students completed the questionnaire) have had a pap smear done. It was reported that 11.9% (n=12) respondents reported having or had their partners have Pap smear screening done every two (2) years. It was suggested by 30.7

% (n=31) that a pap smear should be done every three years. A total of 16.8% (n=17) of respondents reported that they or their partners have had a pap smear every four years while 40.6% (n=41) reported that they or their partners have a pap smear done irregularly, indicating at an interval of more than four years.

The respondents were asked if they or their partners had not had a pap smear what would be the reason. A total of 29.7% (n=30) reported that the test not being available to the public would be the reason not to have a pap smear done. Less than 50% (n=47) of the respondents said they feared the test. A total of 21.8%; (n=22) of the respondents suggested that the test is not important. A summary of the findings is presented in Table 4.7.

Table 4.7: Ccervical cancer screening at health facilities

Summary	N =	Percentage
Does your health facility have cervical cancer screening program?	Yes	75 74.3%
	No	18 17.8%
	Not sure	8 7.9%
Would you recommend cervical cancer screening programme to your health facility?	Yes	123 98.0%
	No	1 1.0%
	Not sure	1 1.0%
If yes how often do you or your partner have pap smear test?	Every 2 years	12 11.9%
	Every three years	31 30.7%
	Every four year	17 16.8%
	Irregularly	41 40.6%
If no what are the reasons for not having PAP test	Fear of the test	47 46.5%
	Test is important	2 2.0%
	Test is not important	22 21.8%
	The test is not available	30 29.7%
A Cervical cancer screening is essential for early detection and prevention of cervical cancer	Yes	123 100.0%

Several U.S. women maintain their preference to be screened once a year for cervical cancer, despite current guidelines that recommend three-to-five-year examination intervals, depending on screening outcome and patient age (Cooper & Saraiya, 2018).

4.12 CERVICAL CANCER SCREENING FOR EARLY DETECTION AND PREVENTION OF CERVICAL CANCER

All the respondents (100%; n=124) were aware that cervical cancer screening is essential for early detection and prevention of cervical cancer as they all reported yielding a 100% positive response to the question. The respondents were further asked if they would recommend cervical screening to women under childbearing age, childbearing women, and women who have reached menopause. A total of 30.7% (n=31) said they would recommend cervical cancer screening to women below childbearing age while 69.3% (n=70) reported they would not recommend cervical cancer screening to women below childbearing age. Only 3% (n=3) did not recommend cervical cancer screening for women of childbearing age. A total of 95% (n=96) of respondents recommended cervical cancer screening for women post menopause and 5% (n=5) of the respondents did not recommend cervical cancer screening for women who are post menopause as illustrated in Figure 4.14.

Huy et al. (2018), state that cervical cancer has a slow natural record and progress interval. Immediate detection of precancerous lesions by conventional screening and diagnosis modalities such as cervical cytology, colposcopy, cervical biopsy and endo-cervical curettage allows for treatment of precancerous lesions before they progress to invasive cancers. Pap smear screening has markedly reduced mortality from cervical cancer in developed countries. In Vietnam, routine Pap smears have been initiated to increase cervical cancer screening, especially in major centres; however, the cytological screening coverage is still low outside of the urban regions (Huy et al., 2018).

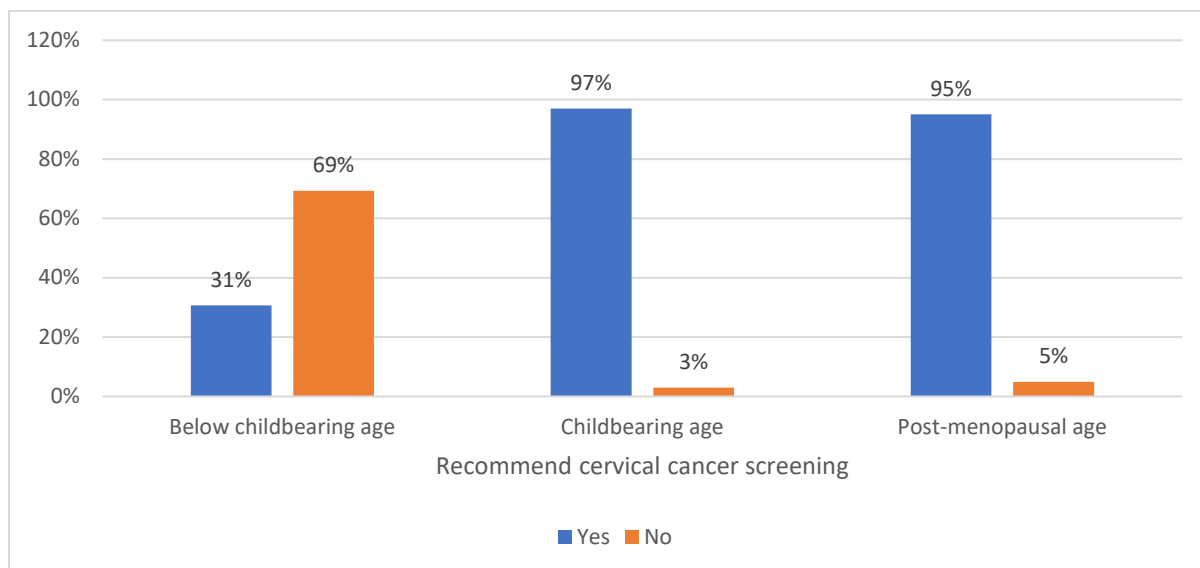


Figure 4.14: Recommendation of cervical cancer screening

The American Cancer Society (ACS) endorses that persons with a cervix initiate cervical cancer screening at age 25 years and undergo primary human papillomavirus (HPV) testing every five years through to age 65 years. If primary HPV testing is not accessible, then persons aged 25 to 65 years should be screened with co-testing, which means HPV testing in combination with cytology every five years, or cytology alone every three years. The ACS recommends that individuals aged > 65 years who have no history of cervical intraepithelial neoplasia grade two or more severe disease within the past 25 years, and who have documented adequate negative prior screening in the previous 10 years, discontinue all cervical cancer screening. These new screening recommendations differ in four important respects compared with the 2012 recommendations (Fontham et al., 2020). The preferred screening strategy is primary HPV testing every five years, with co-testing and cytology alone acceptable where access to US Food and Drug Administration-approved primary HPV testing is not yet available. The recommended age to start screening is 25 years rather than 21 years. Primary HPV testing, as well as co-testing or cytology alone when primary testing is not available, is recommended starting at age 25 years rather than age 30 years. The guideline is transitional, i.e., options for

screening with co-testing or cytology alone are provided but should be phased out once full access to primary HPV testing for cervical cancer screening is available without barriers.

4.13 HUMAN PAPILOMAVIRUS VACCINE

In a study conducted at the Faculty of Nursing, Benham University, to assess the knowledge and attitudes of nursing students towards human papilloma virus infection, 195 nursing students were randomly recruited. Students were issued with questionnaires comprising Likert scale options. About half of the nursing students (52.8%) with mean age of 20.7 were 20 years old, the highest percentage of them (79.0%) were female and more than one quarter of them (29.2%) were in the first year. About two third of nursing students (67.2%; n=65) had an average knowledge about human papilloma virus and pap smear and slightly more than half of them (59.5%) had an average knowledge about vaccination. Also, the highest percentage (72.3%) of nursing students in this study had a positive attitude toward Pap smear, HPV, and vaccination (Magdy et al., 2022).

HPV vaccine is considered an integral part in combating cervical cancer. In the current study students were asked if they recommend cervical cancer screening and 94.1% (n=95) recommended the vaccine and only 5.7% (n=6) had negative views towards the HPV vaccine which corresponds with the study done in Benham-Faculty of nursing where 72.3% of the students had a positive attitude toward HPV vaccination (Magdy et al., 2022).

When asked if they would recommend HPV vaccine to women below childbearing, childbearing, and post menopause, most of the students indicated their recommendation of the use of HPV vaccine for women before sexual debut, (1.4%; n=62) while 38.6% (n=39) did not recommend the use of HPV vaccine before sexual debut. A total of 94.1% (n=95) of respondents recommend the use of HPV vaccine for women who are of childbearing age while only 5.9% (n=6) did not recommend the vaccine for this age group. Several students indicated

that women who are post-menopausal should also get the vaccine (86.1%; n=87), but a minority (13.9%; n=14) did not agree (Figure 4.15).

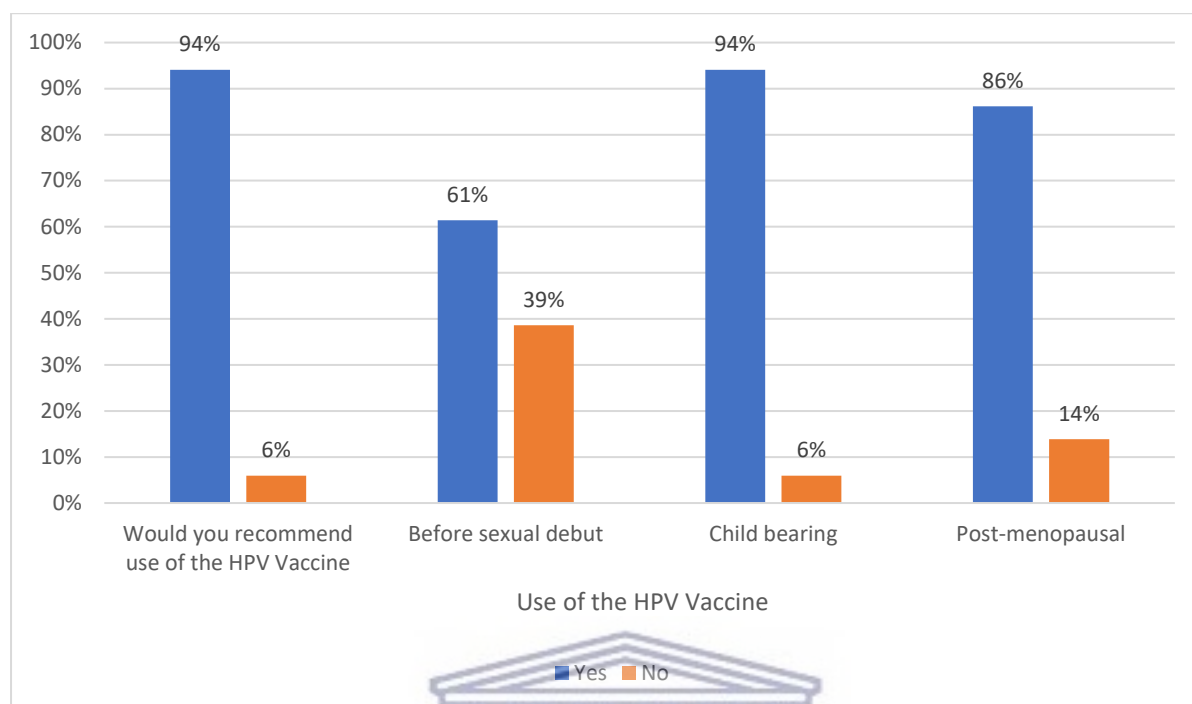


Figure 4.15: Recommendation of HPV vaccine

Abdullah (2016) indicates that nurses should educate the public about vaccination as well as increasing awareness about the accessibility of tests and treatment, which will contribute to a reduction in morbidity and mortality related to cervical cancer. There is a need to teach nurses about the risks and impact of HPV and cervical cancer (Abdallah, Hummeida & Elmula, 2016).

4.14 CONCLUSION

In this chapter, the results of the study were presented. This study found that nursing students expressed good understanding of cervical cancer screening in terms of knowledge and attitudes. Most students were able to identify methods used in screening for cervical cancer. In the next chapter, the results will be further discussed, study limitations and recommendations will be presented.

CHAPTER 5

SUMMARY OF FINDINGS, RECOMMENDATIONS, AND CONCLUSION

5.1 INTRODUCTION

The aim of the study was to assess the knowledge and attitudes of fourth year undergraduate nursing students regarding cervical cancer screening. The study objectives were to assess the knowledge of fourth year undergraduate nursing students regarding cervical cancer screening; and to describe their attitudes regarding cervical cancer screening. The findings of this study indicate that fourth year undergraduate nursing students are aware of cervical cancer screening, but do not recommend cervical cancer screening for their families as they think the test is not important or they have some fear of the test. In this chapter the researcher will explain how the aim and objectives of this study were accomplished, followed by the limitations and recommendations based on the findings of the study.

5.2 SUMMARY OF FINDINGS

The objectives of the study were:

5.2.1 Objective 1: To assess the knowledge of fourth year undergraduate nursing students regarding cervical cancer screening.

A total of 61% (n=75) of the respondents reported to have good knowledge of cervical cancer screening. There was 115 (n=115) of the respondents that reported that pap smears were used for detection of cervical cancer. Most of the respondents (n=62) felt that cervical cancer can present without symptoms while only 31% (n=38) responded to that cervical cancer can present with symptoms. With the given symptoms in the questionnaire 58% (n=69) reported post-coital bleeding as a symptom of cervical cancer and foul blood-stained vaginal bleeding stood at 81%

(n=96). Respondents also reported that irregular vaginal bleeding is a symptom of cervical cancer at 83% (n=99).

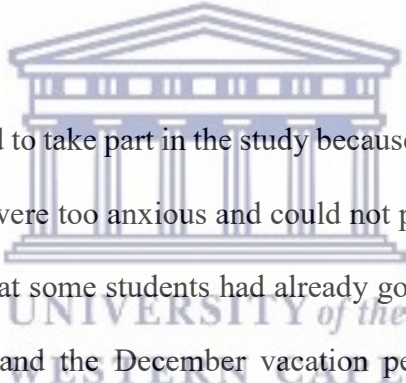
5.2.2 Objective 2: To describe the attitudes of fourth year undergraduate nursing students regarding cervical cancer screening.

A total of 98% (n=99) of the respondents reported that they would recommend cervical cancer screening which suggests a positive attitude towards cervical cancer screening. A total of 74.3% (n=75) reported that their facility does offer cervical cancer screening and only 7.9% (n=8) were not certain if their facility offers cervical cancer screening. Respondents were further asked if they would recommend a cervical cancer screening program in their facility if the facility does not offer the service. A total of n=123 reported recommending cervical cancer screening in their facilities. Only n=1 did not recommend cervical cancer screening at their facility.

Both objectives were addressed by the questions and answered by the results. Fourth year nursing students have shown good knowledge and attitude regarding cervical cancer screening. At the beginning of the study, respondents were asked to indicate or rate their knowledge about cervical cancer screening and their attitude about cervical cancer screening. More than 50% of the respondents reported to have good understanding in terms of both questions. It appeared that the researcher is of the opinion that with adequate knowledge about cervical cancer screening then it could be surmised that the respondents equally have a good attitude towards cervical cancer screening. Respondents mentioned methods used to screen for cervical cancer and were willing to have a test or have a pap smear done themselves, although most of them appear to be of the belief that testing should occur irregularly or when there are symptoms.

5.3 LIMITATIONS

Due to COVID-19 and the regulations set by the government, the respondents were learning remotely, which meant limited time on campus and therefore the researcher had limited access to them. The researcher could not reach the total population of respondents because they were attending campus on alternate weeks and were also in clinical placement during the data collection period. They had to achieve their stipulated clinical learning hours. Due to the above, the researcher had limited time with the 2021 Fourth year undergraduate student group and could only reach some of the total population. Data collection took place during the time of preparation for final examinations. During the information session it was emphasized that respondents could withdraw from the study at any time without any negative impact on their studies. They were prompted to call the student counselling helpline on 0800 222 333 if they needed to do so.



Some of the respondents refused to take part in the study because they wanted to focus on their clinical portfolio, while others were too anxious and could not pay attention. During this time the researcher also found out that some students had already gone home for the holidays as it was the end of the semester, and the December vacation period had commenced. Three attempts were made by the researcher to reach the maximum number of the total population (N=200). The first attempt was during a revision period where respondents were preparing for their final examinations. Due to various reasons some of the respondents had to work during the vacation area to meet the required clinical hours, in this period the researcher got the remaining 12 students to reach 124 of the total population that participated in the study. This was an unfortunate experience as the goal of this study was to include the entire population.

5.4 RECOMMENDATIONS

5.4.1 Knowledge and attitudes regarding cervical cancer

Research respondents had good knowledge and attitudes regarding cervical cancer screening. Community Health Nursing Science modules should include and cover more content on cervical cancer to help respondents to complete their expected learning outcomes and competencies. There should be a system in place to monitor the progress made by students during their placements regarding screening for cervical cancer. Most of the respondents were confident in their knowledge related to cervical screening and their attitude displayed a positive outcome as 98% of the respondents reported that they would recommend cervical cancer screening in the healthcare facilities where they are working.

5.4.2 Appropriateness of time of data collection

The time of data collection should be timeously communicated with educators to ensure data collection takes place at a time that is not only convenient for students, but for their educators as well. This will ensure that no learning time is compromised. Data should also not be collected at the end of the fourth year because this is a time when students prepare for examinations, they need to ensure that they have met all their clinical learning requirements. The students are focused on their progress and preparing themselves for examinations. Little or no attention was given to the researcher, which can influence the outcome of any study. The researcher had to remind the students and encourage them to complete the questionnaires often during the data collection sessions.

5.4.3 Advancement in Nursing Education

Nurses and other health care workers play an integral role in health promotion and disease prevention in society because they are at the forefront of health training. It is anticipated therefore that they will acquire adequate and recent knowledge, maintain a good attitude towards health preventive practises in general, and for cervical cancer screening, then they can

effectively play their role. The World Health Organisation (2020) affirms that the high mortality rate from cervical cancer globally could be lowered through the implementation of a comprehensive method that includes efficient screening for prevention, early diagnosis, and accessible treatment programmes. It is expected that if nursing students who transit through university education to become nurses are informed and trained to maintain a positive attitude towards cervical cancer screening, they may also be able to positively influence healthcare consumers to be equally informed and willing to attend preventive screening. It was therefore of interest to the researchers to explore undergraduate nursing students' knowledge and attitude towards cervical cancer screening. Health professionals, especially nurses, play an integral role in preventing disease through health promotion. They can influence adherence and health activities among most women therefore knowledge of cervical cancer screening and having the correct attitude is integral to the promotion of informed decisions about cervical cancer screening.

5.5 SUMMARY

The aim of the study was to assess the knowledge and attitudes of fourth year undergraduate student nurses regarding cervical cancer screening. According to the findings of this study, respondents have a good understanding and are knowledgeable about cervical cancer screening and prevention.

Ninety eight percent of respondents report they would recommend cervical cancer screening in their facilities which is a suggestion that they have a positive attitude regarding cervical cancer screening. Forty-eight percent of the respondents heard about cervical cancer screening during their nursing training. This suggests that nursing training is the primary source of information and training therefore more focus should be extended to educating and training nursing students.

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ANNEXURE A: INFORMATION SHEET



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9592819, Fax: 27 21-9593515

Project Title: **The knowledge and attitudes of student nurses regarding cervical cancer screening.**

What is this study about?

This is a research project being conducted by **Tetelo Mokgethwa Matshingwane student Number 3466978** at the University of the Western Cape. We are inviting you to participate in this research project because you are an undergraduate nursing student that has completed the 3rd year midwifery clinical competence essential to the study. The purpose of this research project is to describe the knowledge, attitudes, and practices of student nurses regarding cervical cancer screening.

"What will I be asked to do if I agree to take part?" ("What will I be asked to do if I agree to take part? – The responses of ...")

You will be asked to participate in questionnaire by completing a google survey at the time and place of your convenience send by the researcher.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution by hiding your identification and allocating numbers to google forms. Your identity will remain confidential.

What are the risks of this research?

All human interactions and talking about self or others carry some number of risks. We will nevertheless minimize such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the knowledge and attitudes of student nurses regarding cervical cancer.

Do I have to be in this research, and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. "If you decide to participate in this research, you may stop participating at any time." ("have to be in this research and may I stop participating at any time?") If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Participation in the research is not a course requirement nor does it affect your progress.

What if I have questions?

This research is being conducted by *Tetelo Mokgethwa Matshingwane* in the Department of the School of Nursing at the University of the Western Cape. If you have any questions about the research study itself, please contact 0748803800 or alternatively email 3466978@myuwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Prof. J. Chipps

Head of Department: School of Nursing

University of the Western Cape

Private Bag X17

Bellville 7535

jchipp@uwc.ac.za

Prof Anthea Rhoda

Dean of the Faculty of Community and Health Sciences

University of the Western Cape

Private Bag X17

Bellville 7535

chs-deansoffice@uwc.ac.za

HSSREC

Research Office

New Arts Building

C-Block, Top Floor, Room 28

University of the Western Cape

Private Bag x17

Bellville, 7535



This research has been approved by the University of the Western Cape's Humanities and Social Sciences Research Ethics Committee

REFERENCE NUMBER: HS20/10/65

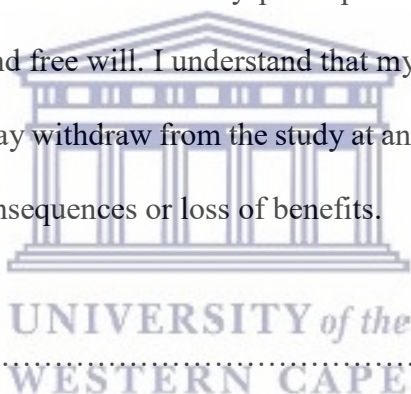
ANNEXURE B: INFORMED CONSENT FORM



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592819, Fax: 27 21-9593515

Title of Research Project: The knowledge and attitudes of student nurses regarding cervical cancer screening.

The study has been described to me in a language that I understand. My questions about the study have been answered. I understand what my participation will involve, and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.



Participant's name

Participant's signature.....

Date.....

ANNEXURE C: QUESTIONNAIRE



UNIVERSITY OF THE WESTERN CAPE
 Private Bag X 17, Bellville 7535, South Africa
 Tel: +27 21-9592819, Fax: 27 21-9593515

Title of Research Project: The knowledge and attitudes of student nurses regarding cervical cancer screening.

Data collection instrument (self-administered questionnaire)

This questionnaire takes 30 minutes to complete.

Please tick or make a cross in areas relevant to you in the questions.

SECTION A: DEMOGRAPHIC DATA

Please tick or make a cross in areas relevant to you in the questions below.

1. Gender	Male			Female		
2. Age						
3. Marital status	Married	Co-habiting	Single	Divorced	Separated	Widow/widower
4. Highest Level of Education	National Certificate		First degree		Second degree (Master and above)	

SECTION B: KNOWLEDGE OF CERVICAL CANCER

Please make a cross in the areas relevant to you in the answers following questions below:

	1 - Very poor	2 - Poor	3 - Good	4 - Very good
5. How do you rate your knowledge about cervical cancer screening?				
6. How do you rate your knowledge on prevention?				

7. Where did you get information about cervical cancer?

1 - Work place	2 - Nurse training	3 - Mass media	4 - Seminars /Workshops	5 - All including 1 - 4
----------------	--------------------	----------------	-------------------------	-------------------------

8. Is Pap smear used for detection of cervical cancer?

a) Yes	b) No	c) Not sure
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9. If cervical cancer is found early, is it curable?

a) Yes	b) No	c) Not sure
--------	-------	-------------

10. Cervical cancer presents in the following ways: Without symptoms.

a) Yes	b) No	c) Not sure
--------	-------	-------------

11. Post coital bleeding

a) Yes	b) No	c) Not sure
--------	-------	-------------

12. Foul blood-stained vaginal discharge

a) Yes	b) No	c) Not sure
--------	-------	-------------

13. Irregular vaginal bleeding

a) Yes	b) No	c) Not sure
--------	-------	-------------

Are the following risk factors of cervical cancer?

14. Human Papilloma virus infection

a) Yes	b) No	c) Not sure
--------	-------	-------------

15. Multiple sexual partners?

a) Yes	b) No	c) Not sure
--------	-------	-------------

16. Early sexual debut?

a) Yes	b) No	c) Not sure
--------	-------	-------------

17. Many pregnancies/deliveries?

a) Yes	b) No	c) Not sure
--------	-------	-------------

18. Low social economic class?

a) Yes	b) No	c) Not sure
--------	-------	-------------

19. Early marriage?

a) Yes	b) No	c) Not sure
--------	-------	-------------

--	--	--

20. Sexually transmitted infections?

a) Yes	b) No	c) Not sure
--------	-------	-------------

21. Human immunodeficiency virus infection?

a) Yes	b) No	c) Not sure
--------	-------	-------------

22. How often should a woman have Pap smear done?

1-One year	2-Two years	3-Three years	4-Should only be done if there are symptoms	5-not sure
------------	-------------	---------------	---	------------

If your answer for the above question (d) is either of the 4 choices, give your reasons briefly:

Are the following methods used for screening cervical cancer?

23. Visual inspection after acetic acid

a) Yes	b) No
--------	-------

24. Colposcopy

a) Yes	b) No
--------	-------

25. Cervical biopsy

a) Yes	b) No
--------	-------

Other methods used for screening cervical cancer?

26. Does your health facility have cervical cancer screening program?

1 - Yes	2 - Not sure	3 - No
---------	--------------	--------

27. Would you recommend cervical cancer screening programme to your health facility?

a) Yes	b) No
--------	-------

If your answer for the above question (g) is either of the 2 choices, give your reasons briefly.

28. If yes how often do you or your partner have pap smear test?

1 - Every 2 years	2 - Every three years	3 - Every four year	4 - Irregularly
-------------------	-----------------------	---------------------	-----------------

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29. If no what are the reasons for not having PAP test

1 - The test is not available	2 - Fear of the test	3 - Test is not important	4 - Test is not important
-------------------------------	----------------------	---------------------------	---------------------------

SECTION C: ATTITUDE TOWARDS CERVICAL CANCER SCREENING

Please indicate your own personal view/attitude towards cervical cancer screening by marking your response in the space provided.

30. A Cervical cancer screening is essential for early detection and prevention of cervical cancer

a) Yes	b) No
--------	-------

Would you recommend cervical cancer screening to the following female groups?

31. Below childbearing age?

a) Yes	b) No
--------	-------

32. Childbearing age?

a) Yes	b) No
--------	-------

33. post-menopausal age?

a) Yes	b) No
--------	-------

If your answer for the above questions (b) is either of the choices, give your reasons briefly:

34. Would you recommend use of the HPV Vaccine?

a) Yes	b) No
--------	-------

If yes at, what stage would you recommend HPV vaccination?

35. Before sexual debut?

a) Yes	b) No
--------	-------

36. Childbearing age?

a) Yes	b) No
--------	-------

37. Post-menopausal age?

a) Yes	b) No
--------	-------

If your answer for the above questions (c) is either of the choices, give your reasons briefly:

SECTION D - PRACTICES REGARDING CERVICAL CANCER SCREENING:

38. Have you or your partner ever had a PAP smear test?

a) Yes	b) No
--------	-------

39. If yes to question 38, how often do you or your partner have pap smear test?

1- Every 2 years	2-Every three years	3- Every four years	4-Irregularly
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40. If no to question 38, what are the reasons for not having PAP test

1-The test is not available	2-Fear of the test	3-Test is not important	4-Not at risk
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Can cervical cancer be prevented by the following?

41. Abstinence?

a) Yes	b) No
--------	-------

42. Condom use?

a) Yes	b) No
--------	-------

43. Single sexual partner?

a) Yes	b) No
--------	-------

44. Having regular Pap smear?

a) Yes	b) No
--------	-------

45. HPV vaccination before sexual debut?

a) Yes	b) No
--------	-------

46. What do you think are the barriers to cervical cancer screening?

ANNEXURE D: PERMISSION TO UTILISE TOOL



Prof LM Modiba
Department of Health Studies
Room 7/160
Winnie Madikizela -Mandela Building
Tel: 0124296337

To whom it may concern

PERMISSION TO UTILISE THE TOOL OF PREVIOUS MASTERS IN NURSING; TITLE: KNOWLEDGE, ATTITUDE AND PRACTICES ON CERVICAL CANCER SCREENING AND PREVENTION METHODS AMONG NURSES AT THE TWO NAIROBI HOSPITALS IN KENYA By **SUSAN NDILA KIETI**; Supervisor : **Prof LM Modiba, 2016.**

Mr. Tetelo Matshingwane enrolled for his Masters at the University of the Western Cape; Titled: Student nurses' knowledge and attitudes regarding cervical cancer screening. The student contacted me on 18th August 2021. I tried to contact Ms. NS Kieti without any success.

I therefore, give permission as the supervisor for SN Kieti for Mr T Matshingwane to use the tool, to bear in mind that this is the product of the University of South Africa. Therefore, acknowledge the University of South Africa, the student i.e. NS Kieti and Prof LM Modiba.

I wish you all the best on your journey and after completion if possible share it with the University of South Africa.

Sincerely Yours
Prof LM Modiba

2021/10/07



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

ANNEXURE E: PERMISSION TO CONDUCT RESEARCH



UNIVERSITY OF THE WESTERN CAPE PERMISSION TO CONDUCT RESEARCH

DEAR **Tetelo Mokgethwa Matshingwane**

This serves as acknowledgement that you have obtained and presented the necessary ethical clearance and your institutional permission required to proceed with the project referenced below:

RESEARCH TOPIC

Student nurses knowledge and attitudes regarding cervical cancer screening

Name of researcher : Tetelo Mokgethwa Matshingwane
Permission valid till : 14 July 2024
Institution : University of the Western Cape
Ethics reference : HS20/10/65
Permission reference : UWC 5049145814814384905

You are required to engage this office (researchperm@uwc.ac.za) in advance if there is a need to continue with research outside of the stipulated period. The manner in which you conduct your research must be guided by the conditions set out in the annexed agreement: Conditions to guide research conducted at the University of the Western Cape.

Please be at liberty to contact this office should you require any assistance to conduct your research or require access to either staff or student contact information.

Regards
Dr Ahmed Shaikjee
Deputy Registrar Academic Administration

Approval status: **APPROVED** 16 August 2021

To verify or confirm the authenticity of this document please contact the University at researchperm@uwc.ac.za.



UNIVERSITY OF THE WESTERN CAPE
Robert Sobukwe Road, Bellville, 7535, Republic of South Africa

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ANNEXURE F: HSSREC ETHICS APPROVAL



UNIVERSITY of the
WESTERN CAPE



15 July 2021

Ms TM Matshingwane
School of Nursing
Faculty of Community and Health Sciences

HSSREC Reference Number: HS20/10/65

Project Title: Student nurses' knowledge and attitudes regarding cervical cancer screening.

Approval Period: 14 July 2021 – 14 July 2024

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report by 30 November each year for the duration of the project.

The permission to conduct the study must be submitted to HSSREC for record keeping purposes.

The Committee must be informed of any serious adverse events and/or termination of the study.

*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*

NHREC Registration Number: HSSREC-130416-049

Director: Research Development
University of the Western Cape
Private Bag X 17
Bellville 7535
Republic of South Africa
Tel: +27 21 959 4111
Email: research-ethics@uwc.ac.za

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

ANNEXURE G: PERMISSION TO CONDUCT RESEARCH AT THE SCHOOL OF NURSING, UNIVERSITY OF THE WESTERN CAPE



18 August 2021

Dear Ms Matshingwane

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT THE SCHOOL OF NURSING, UNIVERSITY of the WESTERN CAPE

Name of Researcher: Ms Tetelo Mokgethwa Matshigwane

Research Topic: *Student nurses' knowledge and attitudes regarding cervical cancer screening*

Ethics Clearance Reference No.: HS20/10/65

UWC Permission Reference Code: UWC 5049145814814384905

Target population: 4th year B Nursing students

Validity Period: 14 July 2021 – 14 July 2024

As per your request and evidence provided, we acknowledge that you have obtained the necessary permission and ethics clearance. Permission is therefore granted for you to conduct your research as outlined in your proposal.

Please note that while permission is granted to conduct your research (i.e. interviews and surveys) staff and students at the School of Nursing are not compelled to participate and may decline to participate or withdraw should they wish to.

Should you wish to make use of or reference the School's name, spaces, identity, etc. in any publication/s, you must first furnish the School with a copy of the proposed publication/s so that the School can verify and grant permission for such publication/s to be made publicly available.

As per your letter of permission to conduct research at the UWC from Dr Ahmed Shaikjee, Deputy Registrar, assistance to access student contact information, must be done through the office of the Deputy Registrar or be facilitated by your supervisor.

We wish you success with your research.

Yours sincerely

Prof Penelope Martin
Director: School of Nursing
Faculty of Community and Health Sciences
UNIVERSITY of the WESTERN CAPE
T: 021 959 9345
E: pmartin@uwc.ac.za

ANNEXURE H: REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592819, Fax: 27 21-9593515

10 August 2021

Professor Martin
Head of School of Nursing
University of the Western Cape
Private Bag X17
Bellville
7535

Dear Prof Martin

Permission to conduct a research study in your institution

I am ~~Tetelo Matshingwane~~, student number 3466978, a registered post graduate student at the University of the Western Cape.

I hereby request permission from you as the HOD of the School of Nursing to collect data from students using an online platform.

Title of Research Project: Student nurses' knowledge and attitudes regarding cervical cancer screening

Please be assured that anonymity and confidentiality of students' information will be maintained at all times.

Yours faithfully

Ms. ~~Tetelo Matshingwane~~ (Student researcher)

Email: 3466978@myuwc.ac.za

Cell number: 074 880 3800

ANNEXURE I: TURNITIN REPORT

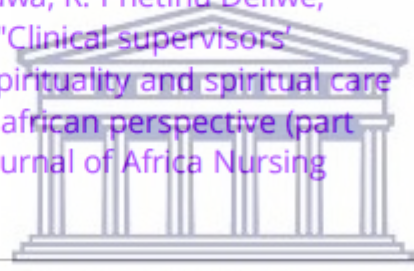
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ORIGINALITY REPORT

11 %	8 %	7 %	1 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Azwinndini Gladys Mudau, Augustine Kwame Tugli. "Women's awareness and practices regarding papanicolaou smear in the selected regional hospital of Limpopo Province, South Africa", <i>Obstetrics & Gynecology International Journal</i> , 2022 Publication	3 %
2	etd.uwc.ac.za Internet Source	2 %
3	S. Linda Ntombizodwa, R. Phetlhu Deliwe, Hester C. Klopper. "Clinical supervisors' understanding of spirituality and spiritual care in nursing: a south african perspective (part 2)", <i>International Journal of Africa Nursing Sciences</i> , 2020 Publication	<1 %
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