THE KNOWLEDGE, ATTITUDE AND PRACTICES OF NURSES REGARDING THE PROVISION OF SERVICES ON CERVICAL CANCER AT HEALTHCARE FACILITIES IN WINDHOEK DISTRICT, NAMIBIA

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ABSTRACT

The purpose of this study was to determine the knowledge, attitudes and practices of nurses regarding the provision of services on cervical cancer at the health facilities in Windhoek district, Namibia. To achieve this aim, four objectives were set: (a) to assess the knowledge of cervical cancer and cervical cancer services among nurses (b) to determine the nurses' attitudes towards the provision of cervical cancer services (c) to assess the practices of nurses towards the provision of services on cervical cancer; and (d) to analyse the association between the key variables with regards to cervical cancer and the provision of its services. A quantitative, descriptive and analytical study, using a self-administered structured questionnaire was completed in 2019.

Data on socio-demographic, knowledge, attitudes and practices regarding cervical cancer service provision was collected from nurses that are working at the randomly selected healthcare facilities such as Windhoek Central hospitals, Intermediate Katutura Hospital, Hakahana clinic, Wanaheda clinic, Okuryangava clinic and Katutura Health Centre. A total of eighty (80) participants was sampled with the means of stratified random sampling, proportionate to the size of the population at a certain health facility. With SPSS version 25, the researcher started with double data entry, descriptive statistics, recoding, redefining, scoring and finally categorising the findings. At a later stage Cross tabulation was done together with Pearson‘s Chi-squared test to determine the significance of the association between the variables, p-value < 0.05.

The study comprised mostly females (78.4%) with 21.6% of males. Of the participants, 74.3% were reported to have a good level of knowledge of cervical cancer and the provision of its services. None of the nurses was found to have poor level of knowledge. All nurses in this study showed a positive attitude towards cervical cancer and its services. Many nurses 71.2% indicated to have a good practice compared to few 28.8% of the nurses with poor practice of cervical cancer service provision. The findings further reported gender to be a significant predictor of practice with the p-value=0.000. Moreover, the study revealed that the level of knowledge was not significantly associated with practice p-value= 0.366.

The researcher proposed for an ongoing in-service training to improve nurses’ knowledge and to keep them updated with information on cervical cancer services. Additionally, the researcher recommended a different study to on the challenges faced by healthcare workers in providing services regarding cervical cancer and the women uptake of these services.

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LIST OF ABBREVIATIONS

AIDS-	Acquired Immune Deficiency Syndrome
ART-	Anti Retroviral Therapy
CAN-	Cancer Association of Namibia
CASA-	Cancer Association of South Africa
CCA -	Cervical Cancer Association
CIN -	Cervical Intraepithelial Neoplasia
DNA-	Deoxyribonucleic Acid
HAART -	Highly Active Antiretroviral Therapy
HBM -	Health Belief Model
HIV-	Human Immune deficiency Virus
HPV -	Human Papilloma Virus
IHK -	Intermediate Hospital Katutura
I-TECH-	International Training and Education Center for Health
KAP -	Knowledge Attitudes and Practice
KHC -	Katutura Health Centre
LEEP-	Loop Electrosurgical Excision Procedure
MOHSS-	Ministry of Health and Social Services
NCI-	National Cancer Institute

PCR - Polymerase Chain Reaction

VIA- Visual Inspection with Acetic acid

VILI - Visual Inspection with Lugol's Iodine

WCH - Windhoek Central Hospital

WHO - World Health Organization

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DECLARATIONS

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Name of Student Signature Date

DEDICATIONS

I would like to dedicate this study to all Namibian women. Be assured that we are and will try everything possible to bring down the incidences of cervical cancer.

CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 INTRODUCTION

Cancer is the second most common cause of deaths in the world (Kieti, 2016). Globally, cancer of the cervix is a significant public health problem. According to National Cancer Institute (2014), cervical cancer is the cancer that arises from the cervix due to the abnormal growth of cells that have the ability to spread to other parts of the body. Rhee, Shin, Kim and Jang (2010) indicated that cervical cancer has a significant association with infection of human papillomavirus (HPV), and repeated or persistent infection with high risk HPV appear to increase the chances of developing the disease. HPV is a common sexually-transmitted disease. Infected individuals with HPV are usually asymptomatic (Rhee *et al.*, 2010). Like any other diseases, cervical cancer also has factors that increase the possibility of being infected with it. The predisposing factors linked with cervical cancer include infection with certain high risk subtypes of HPV, multiple sexual partners, engaged in sexual activity at an early age, sexual transmitted disease, prolonged use of oral contraceptives, weakened immune system, low socioeconomic status, poor personal hygiene and cigarette smoking (Ganju, Gautam, Barwal & Walia, 2017).

Cervical cancer is reported to be one of the cancers that are mostly preventable. Women of the age of 30-40 are perfect for cervical screening because this is the ages when women are at higher risk of developing precancerous lesions. However, women who have been sexually active at a younger age should be screened as earlier as possible, because they may have developed precancerous lesions (International Agency for Research on Cancer, 2013). Methods such as regular screening (Papanicolaou test), committing to safe sexual practice and injection against HPV can prevent cervical cancer with the effectiveness of up to 80%

(Ganju *et al.*, 2017). Precancerous lesions are detectable for ten (10) years or more before the actual cancer can develop. Early detection and appropriate treatment of these lesions are reported to be one of the keys to reducing cervical cancer morbidity and mortality (Cervical Cancer Action, 2011).

Papanicolaou test is one of the cytology-based screenings. However, cytology-based screening programs are reported to present a huge number of challenges for countries that are still developing, due to lack of trained cytology technician and poor health infrastructure. Otherwise, it is commonly used to detect precancerous lesions and the results can be used to treat Cervical Intraepithelial Neoplasia (CIN) and thus, prevent invasive cancer. This can only be achieved with appropriate treatment and regular follow up (Mishra, Pimple & Shastri, 2011). Moreover, other alternatives were developed to screen cervical precancerous lesions which include screening by visual inspection with acetic acid (VIA) and HPV Deoxyribonucleic Acid testing. There are safe and effective outpatient methods for treating cervical precancerous lesions such as cryotherapy and loop electrosurgical excision procedure (LEEP) (Carvalho, 2016)

Furthermore, it is important that cervical cancer prevention eliminates the most important barriers that affect the women's participation, as well as identify and foster conditions that support their use of services which include the client-provider relationship, the ability of the provider to answer questions asked by women (knowledge, attitude and practices of the nurses). These services should be provided by competent health workers who are knowledgeable and able to provide adequate information on cervical cancer and comfortable in carrying out the procedures (Chidyaoma-Maseko, Chirwa & Muula, 2015).

Nowadays nurses take on many responsibilities such as advocating for patients, care providers, health educators and research supervisors. In addition, nursing personnel are

actively involved in the patient care. Similarly, they are responsible for carrying out and providing cervical cancer services. It is significant for nurses in all settings, to realise that their role in cervical cancer screening involves both care provision for a population and the provision of sensitive personal information for individuals and thus, affecting the number of women participating in cervical cancer screening services (Chidyaoma *et al*, 2015).

The International Agency for Research on Cancer (2013) indicated that cervical cancer is a major public health problem worldwide. There were 528 000 new cases of cervical cancer and 266 000 deaths due to this disease in 2012, worldwide. In 2008, there were 529 800 estimated, new cases worldwide and more than 85% of these were in developing countries.

Global Cancer Facts and Figures (2011) reported that there were an estimated 80 400 new cases of cervical cancer in Africa, in 2008. This type of cancer also caused 10.4% of all cancer deaths in Africa. In sub-Saharan Africa, 34.8 new cases of cervical cancer are diagnosed per 100 000 women per year, and 22.5 per 100,000 women die from the disease. These statistics proved that cervical cancer is quite common in developing countries (Sylla & Wild, 2012).

According to the statistics obtained from pink ribbon red ribbon organisation, Namibia has recorded 18% incidence of cervical cancer and the prevalence of HIV/AIDS in women over 15 years is 13.3%. Women over 15 years living with HIV/AIDS stood at 120 000 in 2017 and it is evident that HIV/AIDS increases the women susceptibility to contracting cervical cancer (Kapitako, 2017).

Loop Electrosurgical Excision Procedure (LEEP) and cryotherapy are some of the precancerous treatment procedures. The former destroys precancerous cells by freezing them in the cervix, using compressed carbon dioxide or nitrous oxide gas. While the latter uses a looped shaped electric wire to remove precancerous lesions. Unlike cryotherapy, LEEP

requires local anaesthesia and a continuous power supply. It is a less expensive and less invasive option than carrying out a more complex inpatient method, such as a hysterectomy which can also be used to treat cervical cancer (Cervical Cancer Association, 2011).

Services on cervical cancer include early detection (prevention), screening, and treatment. These are the major targeted areas with poor literacy and low level of awareness amongst women added. Nurses should have knowledge on the facts about cervical cancer and the screening tests, for a successful cervical cancer control program, (Mcarey, Pirek, Tebeu, Boulvain, Doh & Petignat, 2011).

Most if not all health facilities in Windhoek offer cervical cancer services (early detection, screening and treatment). At all the health facilities, nurses form the largest group of the health personnel. Thus, they need to be knowledgeable, have positive attitudes and good practices towards cervical cancer services, because they are the ones responsible for screening and disseminating information to women about cervical cancer.

1.2 PROBLEM STATEMENT

A population of 813 157 women in Namibia aged 15 years and older is reported to be at risk of developing cervical cancer ("Namibia Human Papillomavirus and Related Cancers, Fact Sheet, 2017 It was indicated that every year close to 132 women are diagnosed with cervical cancer and at least 59 die from the disease. Cervical cancer comes as the second most frequent cancer among Namibian women and the third most frequent cancer among women between 15 and 44 years of age. ("Namibia Human Papillomavirus and Related Cancers, Fact Sheet, 2017)**.**

Namibian Ministry of Health and Social Services (MOHSS) recommends Pap Smear Testing to be done annually to HIV positive women who are sexually active and every three (3) years to women who are below or over the age of 21 with the HIV status of negative ("Namibia-

National-ART-guidelines, 2014''). Despite this guideline, cervical cancer has been reported to be on a rise. This could be because of poor awareness of the guidelines governing the provision of cervical cancer services, negatives attitudes and poor practices of the health workers, which are significantly associated with the women's uptake of these services. This may results in late diagnosis and advanced stage of the disease resulting in high morbidity and mortality rate. The favourable nurses' knowledge, attitudes and practices, may in turn indirectly influence women understanding and practice of cervical cancer screening.

The inaccurate knowledge and negative attitudes of cervical cancer among healthcare providers, mostly nurses can cause substantial barriers to cancer control program in developing countries (Mcarey *et al*, 2011).

The researcher, thus, realised the need to determine the nurses' knowledge of cervical cancer, their attitudes and practices towards the provision of cervical cancer services at the health facilities in Windhoek.

1.3 AIM OF THE STUDY

The aim of this study was to assess the nurses' knowledge of cervical cancer, their attitudes and practices towards the provision of services on cervical cancer at the health facilities in Windhoek district, Namibia.

1.4 OBJECTIVES OF THE STUDY

The objectives of this study were to:

- determine the knowledge of cervical cancer and cervical cancer services provision among nurses at the health facilities in Windhoek district;
- determine attitudes of the nurses towards the cervical cancer and provision of cervical cancer services at the health facilities in Windhoek district;

- assess practices of nurses towards the provision of services on cervical cancer at the healthcare facilities in Windhoek district; and
- Analyze the association between the key variables with regards to cervical cancer.

1.5 SIGNIFICANCE OF THE STUDY

The study might add to the already existing body of knowledge about cervical cancer in Namibia. It might help the Ministry of Health and Social Services (MOHSS) through the primary healthcare services to improve on the strategies to disseminate information regarding cervical cancer screening to women. The results of the study might be used as a determinant of the need to develop training programmes to educate nurses and train them, in order to enhance their knowledge and improve their attitudes and practices on cervical cancer services provision. This might lead to an improvement in the services rendered to women. It might help the country at large in educating and keep people informed of available cervical cancer prevention services, thus helping in reducing the cervical cancer incidences.

1.6 DELIMITATION OF THE STUDY

This study was strictly limited to nurses working in the selected healthcare facilities within Windhoek district that formed the population of the study. Because of the costs involved in travelling from healthcare facility to the other, the researcher could not afford to use all the health care facilities in Windhoek and thus those the ones close to the workplace and residential area. Nurses from other unselected facilities in Windhoek were excluded from the study.

1.7 PARADIGMATIC PERSPECTIVES

Henning, Van Ransburg and Smith (2014) define a paradigm as a framework in which theories are formed. These theories affects how one sees the world, give shape to one's understanding of how certain things are related to each other and determine one's views on different things. A research paradigm is a group of beliefs under which research is based.

Paradigm perspective influences the way a research is designed, how data is collected and analysed and how the research findings are presented and distributed. This study depended on participants responses to the self-structured questionnaire. This study considered meta-theoretical assumptions, theoretical research basis of the study and definition of concepts.

1.7.1 Meta –theoretical assumptions

The meta-theoretical assumptions considered in this study are: ontological, epistemological, axiological and methodological. They are described below:

1.7.1.1 Ontological assumption

Ontological assumption is nature of reality. This relates to various views from which an individual can see the nature of the world, which in normative emphasises that social phenomenon is different from other factors (Rahmawati, 2012). This research is in a positivist tradition. Positivism research is usually directed at getting to understand the underlying cause. It is believed that all diseases have a specific cause and if the causative factors can be manipulated, similar diseases can be eliminated or managed in the future. In this study, a structured questionnaire was used to find out knowledge, attitudes and practices of nurses.

1.7.1.2 Epistemological assumption

Epistemological assumption has to do with how knowledge can be developed, recognised or acknowledged. This can be subjective or objective (Mkanzi & Acheampong, 2012). Used in this study, is the structured data collection using questionnaires which enabled the quantification of the responses and conduction of statistical data analysis. The use of questionnaires has ensured the researchers' detachment from the participants thus maintaining objectivity (Polit & Beck, 2014). Through conduct of statistical analysis of the respondents' data, which were obtained with structured questionnaires, the research was able to find out the facts about the nurses knowledge, attitudes and practices.

1.7.1.3 Axiological assumption

Axiology is all about values. Value plays a big role in the interpretation of research results for paradigmatic worldviews (Wagner, Wright, Ganesh, Zhou, Mobahi & Ma, 2012). It refers to the aims of the research and attempts to explain if an individual is trying to explain or predict the world or actually seeking to understand it. In this study, the researcher tried to understand nurses' knowledge attitudes and practices regarding cervical cancer, objectively by using questionnaires. Conclusions were derived from analysed data and statistics were provided as evidence to support the findings.

1.7.1.4 Methodological assumption

Methodological assumption has to do with research strategies. It focuses on analysing the methods used for data collection (Cohen, Manion & Morrison, 2012). This study is one of the applied researches because it focused on finding a solution to the high prevalence of cervical cancer in Namibia. It is a KAP study aimed at collection of data on what is known, believed and done in relation to cervical cancer.

1.7.2 Theoretical base of the study

This study adopted the Health Belief Model (HBM). HBM was developed in the 1950s (Kieti, 2016). The theoretical frameworks which inform this study are the psychological or behavioural perspectives. These frameworks were chosen because it focuses on the individual level. This was found particularly important to understand the knowledge, attitudes and practices of nurses towards cervical cancer. These were used in chapter 3, to guide the construction of the research questionnaire.

The Health Belief Model (HBM) is intended to describe health behaviour by better understanding attitudes and principles regarding wellbeing and health. It was first applied in vaccination programs and in screening programs of public health nature and further adopted to study other behavioural areas (Kieti, 2016). The model has four beliefs that dictate whether

a person will take a given action of a particular situation of health, namely: consider themselves vulnerable (perceived susceptibility), consider the disease to have grave implications (perceived severity), believe taking a remedy will lessen the gravity of the condition (perceived benefits), consider the actions to take will yield better result (Perceived barriers) are less than the positive aspects, are exposed to things that would prompt one take immediate action.

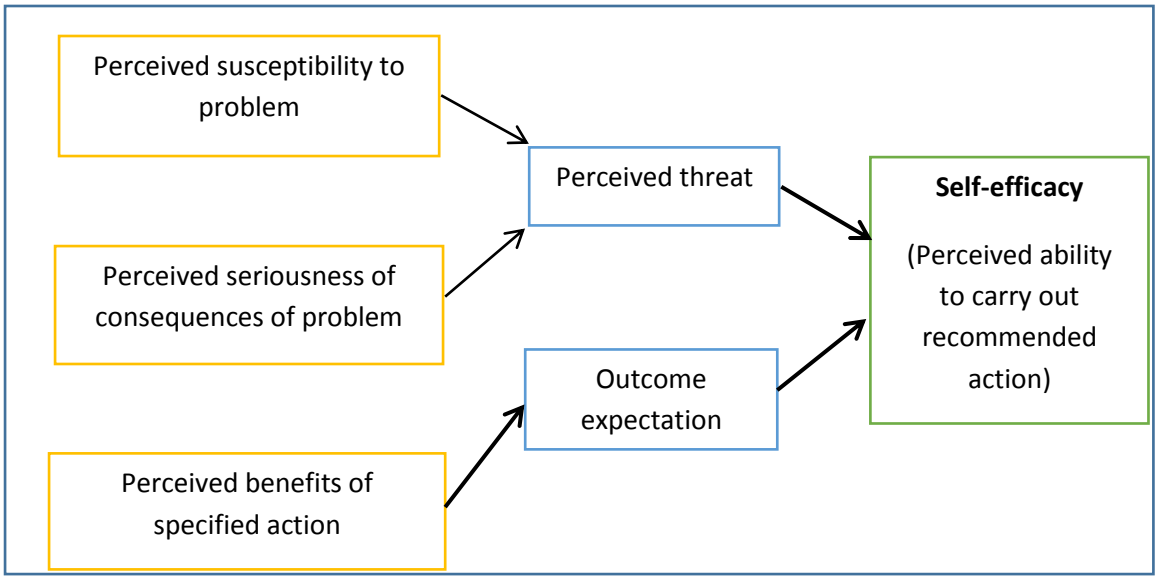

Figure 1.1: Health belief model: major components and linkages; Becker, (1976) in Kieti (2016)

Perceived susceptibility

This component measures an individual's perception of being at risk of contracting susceptible a disease. It is believed that the person's chances of following recommended health behaviour are higher if they feel that they are prone to developing a certain disease (Glanz, Barbara, Rimer, & Viswanath, 2018). In this study, perceived susceptibility has been identified as knowledge of the causes and risk factors of cervical cancer, vulnerable age group, self-awareness of being at risk, who should have a pap smear and how often cervical incidence of the disease.

Perceived severity

This belief of the model addresses feelings regarding the severity of the disease. It refers to an individual's subjective evaluation of the seriousness of the disease and the seriousness of leaving it untreated (Glanz *et al*, 2018). For this study, perceived seriousness has been defined as general knowledge about cervical cancer, who can contract cervical cancer, its signs and symptoms and the progression of the disease.

Perceived benefits

This dimension predicts that a person's intention of following a recommended behaviour is a function of the degree to which they believe the behaviour will benefit in reducing risk from a particular illness (Glanz *et al*, 2018). In this study, perceived benefits have been identified as knowledge about cervical cancer screening tests and the benefits of early detection of cervical cancer.

Perceived barriers

This component refers to the negative aspects of the recommended health behaviour. According to the HBM, people go through subjective mental evaluations about the expected effectiveness of the behaviour against perceptions of it being costly, dangerous, difficult, and time consuming (Glanz *et al*, 2018). In this study, perceived barriers were identified as attitudes of nurses. The outcome of this evaluation will influence nurses' intention of seeking screening. In recent years, the HBM has incorporated in its explanatory components of health behaviour, the concept of "self-efficacy", which was originally developed by the social psychologist Albert Bandura (Carpenter & Christopher, 2010). Self-efficacy refers to a person's conviction that one can successfully execute the behaviour required to produce the outcomes.

1.7.3 Definition of concepts

The concepts that are to be defined below were derived from the tittle: "the knowledge of cervical cancer, their attitudes and practices towards the provision of services on cervical cancer at the health facilities in Windhoek district, Namibia" and they are defined as follow:

Knowledge, attitude, and practice (KAP) surveys are widely used to gather information for which can be used in the establishment of health programmes concerning the public in different countries.

Knowledge: refers to the information, skills and facts which can be acquired through experience or education (Oxford dictionary). In this study, knowledge refers to the nurses' awareness of information and facts on cervical cancer, causes, risk factors, treatment and cervical cancer screening. Nurses' knowledge was rated as good, average and poor according to the score.

Attitude: The term attitude refers to a person's general feelings about an issue, object, or person (Ajzen & Fishbein, 2004). In this study, the general feelings of nurses towards cervical cancer and cervical cancer screening were determined. The attitudes of nurses were rated as positive or negative depending on how the score was.

Practice: this is the use of an idea or applying a method relevant to theories related to it (oxford dictionary) Practices have to do with the use of various treatment and prevention options. In this study, practice refers to the actions or behaviour of the nurses relating to the provision of cervical cancer services, which were assessed. Depending on the participants' scores, practices were rated as positive or negative.

Cervical cancer: Cervical cancer is a disease in which the cells of the cervix become abnormal and start to grow uncontrollably forming tumours (Kieti, 2016). In this study,

cancer of the cervix refers to a disease that affects women, of which nurses have to provide cervical cancer services to.

Services: refers to the action of assisting or doing some work for someone (oxford dictionary). In this study, services refers to the work performed as long as cervical cancer is concerned. These are acts of early detection of cervical cancer (prevention), cervical cancer screening, caring for cervical cancer patients and treatment of patients with cervical cancer at the health facilities in Windhoek.

Nurses: Nurses are part of the healthcare professionals who take care of the sick. They can perform independently or under the medical officer, surgeon or dentist supervision. They are skilled in maintaining and promoting health (Manojlovich, 2005) in (Kieti, 2016). In this study, nurses are referred to as registered, enrolled and assistant nurses, who work at the selected health facilities in Windhoek.

Health facilities: Health facilities are established system of health centres maintained by the national government to carter for the community health needs. They are committed to maintaining, protecting and improving the wellbeing and health of citizens (Hayes, 2015). In this study, the health facilities are Windhoek Central Hospital (WCH), Intermediate Hospital Katutura (IHK), Katutura Health Centre (KHC), Okuryangava clinic, Hakahana clinic and Wanaheda clinic.

1.8 SUMMARY OF THE CHAPTER

This chapter presented the introduction and background of the study, problem statement, aim and objectives of the study, delimitation, significance of the study were discussed. Paradigmatic perspectives were explained as well as concepts were defined. The next chapter will discuss the existing literature related to the title.

CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

This chapter reviews existing literature on the subject. In doing this, it discusses various concepts relating to cervical cancer in general, with the specific aim of identifying research gaps and where the present study fits within the academic discourse.

2.2. CERVICAL CANCER PREVALENCE

Globally, cancer of the cervix is a significant public health problem. In developed countries, breast cancer is the most common in women, whereas cancer of cervix occupies the top rank among cancer in women in developing countries. Worldwide, cervical cancer is the second most common cancer and the major cause of cancer deaths among women (WHO, 2013).

The trend of cervical cancer being most prevalent cancer among women in low resource settings is not unique to Africa. In sub-Saharan Africa cervical cancer is reported to be the second most common cancer among women and in Kenya is the most common cancer. According to the Nairobi cancer registry 2000- 2001 in (Vishwakarma, Rawat, Mittal & Shree, 2018) reported that there were 15 cases of cervical cancer reported in Nairobi each week. In other African country such as Haiti 93 cases of cervical cancer per 100 000 women was reported; Zimbabwe reported 52 per 100; Malawi 56 per 100 women and Swaziland 52 cases per 100 women (Vishwakarma *et al,* 2018). In South Africa, cervical cancer is rated as the second most common cancer among women following breast cancer. The incidence rate in South Africa is reported to between 22.8 and 27 cases per 100 000 women as compared to the global mean of 15.8 cases per 100 000 women (Cancer Association of South Africa, 2020). In Namibia like many of the African country, rated cervical cancer as the second most common cancer among women (Kapitako, 2017). According to the statistic obtained from Cancer

Association of Namibia (CAN), Namibia recorded a number of 1 790 new cases of cervical cancer between the year of 2010-2016. With the lowest cases reported in 2011, 141 cases and the highest in 2016 (343 cases). A number of 135 deaths by cervical cancer was recorded in 2018 in Namibia (Cloete, 2019).

2.3. BACKGROUND INFORMATION ABOUT CERVICAL CANCER

Cancers can be caused by Deoxyribonucleic acid (DNA) mutations (gene defects) that activate cells promoting cell division (oncogenes). Sometimes this could be caused by inactivation of tumour suppressor genes, which results into an abnormal proliferation of cervical cells. Cancer of the cervix occurs as a result of an abnormal cell changes in the tissue layers of the cervix. It may appear as a cauliflower-like growth that may bleeds easily on contact (Smeltzer & Bare, 2014).

Cervical cancer usually starts in the cells on the surface of the cervix, involving columnar or squamous cells. The most affected cells are the squamous cells. Progression of pre-cancer lesions (dysplasia) is usually slow and detection of early pre-cancer lesions can easily be achieved through a Pap smear testing and these lesions are 100% treatable (Cervical Cancer Health Guide, 2018). If left undetected, pre-cancer lesions can develop into cervical cancer and may eventually spread to other organs such as the uterus and ovaries, bladder, intestines and liver.

2.4 CERVICAL CANCER RISK FACTORS

Different cancers have various risk factors. It is important to note that although the presence of cervical cancer risk factors increase the odds of a woman getting cervical cancer in her lifetime, not all women exposed to risk factors develop cancer. There are factors that are associated with cancer of the cervix. Several risk or predisposing factors were identified and discussed. These are factors such as multiple sexual partners, history of HPV, younger at first

sexual intercourse, high parity, cigarette smoking, poor hygiene and weakened immunity (Urasa & Darj, 2011).

2.4.1 Human Papilloma Virus (HPV)

The most important risk factor for cervical cancer is the sexually transmitted HPV. The HPV infection is mostly prevalent in young women under 30 and less in older women over 30 years. Currently, there is no cure for HPV infection reported by literature, apart from managing the lesions or growths caused by them (American Cancer Society, 2019). The HPV type 16 and type 18 cause more than half of cervical cancer incidences worldwide, although there are variations across countries (Khan, Castle, Lorincz, Wacholder, Sherman, Scott, Rush, Glass & Schiffman, 2015). Early studies have shown a relationship between HPV and cervical neoplasia. In a study conducted in Denmark, women with high risk of HPV infection had a 33-fold increased risk of cervical neoplasm compared to HPV-negative women. Women who were HPV positive for type 16 and 18 were found to be at a higher risk of developing cervical cancer lesions when followed over a ten (10) year period. This further suggests evidence of HPV as a significant risk factor for cervical cancer (Khan *et al*, 2015)

2.4.2 Weakened Immune System

Chirenje, Loeb, Mwale, Nyamapfeni, Kamba and Padian (2013); Hawes, Critchlow, Faye Niang, Diouf, Aissatou, Touré, Kasse, Dembele, Sow, Coll-Seck and Kiviat (2014), concurred that the highest burden of pre-cancer lesions is among HIV infected women and in some cases coexistence of HPV infection also increases this risk. In addition to HIV seropositivity as a risk factor, Kjaer, De Villiers, Dahl, Engholm, Bock, Vestergaard, Lynge and Jesen (2010), argued that other factors significantly associated with cervical lesions should also be considered, such as smoking, parity (given birth) three times or more, low educational level and usage of oral contraceptives.

Conversely, early sexual debut and multiple sexual partners, which are known to be risk factors for cervical cancer, were not associated with increasing risk in this study (Kjaer *et al*, 2010). Some studies have shown a significant association between recurrences of cervical dysplasia after therapy or a hysterectomy in women who are HIV infected (Tate & Anderson, 2012). Therefore, there is an increasing concern for cervical cancer screening for women living with HIV, though this remains a challenge for low-resource settings. The National Health Departments should encourage Pap smear testing for all patients who are HIV infected to facilitate early diagnosis and prompt management.

2.4.3 Contraceptive methods

Women who used oral contraceptive methods for more than four years have been found to have high risk of developing cervical cancer compared to women who used barrier methods of contraception (World Health Organisation, 2014; Brinton, 2012). These differences are attributed to different exposures of the cervix to seminal fluids, sperm and viruses such as the genital warts virus, and genital herpes and thus put the cervix at a higher risk of developing cervical cancer (Chomet & Chomet, 2015; Brinton, 2012).

2.4.4 Cigarette and Tobacco smoking

Cigarette smoking is suspected as an independent cause of cervical cancer (Brinton, 2012). Long-term or frequent users of tobacco have been reported to have a two-fold risk of cervical cancer (Brinton, 2012). Researchers have found nicotine and cotinine in cervical mucus which suggests a biological effect of smoking, while it is also possible that smoking suppresses the immune system and as a result the body is weaker in fighting infectious agents like the Human Papilloma Virus (HPV) (Brinton, 2012). There is no agreement on the exact extent to which smoking affects the initiation of the disease (Brannon & Feist, 2016). American Cancer Society, (2019) reported that the risk of developing cervical cancer is doubled in smoking women compared to non-smokers this is due to exposure to high levels

of carcinogens in smoke. Carcinogens are thought to damage the DNA of cervical cells, leading to cervical cancer. Although smoking among African women is not highly prevalent, there is a need to raise awareness in all communities in this regard (WHO/ Information Centre on HPV and Cervical Cancer, 2019).

2.4.5 Genital hygiene

According to a report from the World Health Organisation (2014), there has been no evidence of a relationship between poor sexual hygiene and risk of cervical cancer. However, most studies examining personal hygiene have been conducted in western countries where there is an emphasis on hygiene (Brinton, 2012). One study, conducted in rural China, found an elevated risk of cervical cancer associated with poor personal hygiene such as lack of genital washing and use of sanitary pads (Zhang, Parkin, Yu, & Yang, 2014). This issue is not one easily investigated by interviews, since personal hygiene is a difficult term to operationalise. The suggestion that partners of circumcised men have a lower risk of cervical cancer has not been confirmed by most studies (World Health Organisation, 2014; Brinton, 2012). However, this issue recently regained support in a study that found out that wives of circumcised men had lower rates of cervical cancer (Kjaer *et al.*, 2010). The benefit of male circumcision is the reduced risk of contracting HIV and transmitting the HPV, which causes cervical cancer in women (Cloete, 2019).

Other risk factors

The other risk factors include a family history of cervical cancer, early sexual debut, age, a lack of regular Pap smear testing, as well as the number of pregnancies (American Cancer Society, 2019; Kjaer *et al*, 2010). In a study conducted in Mali among women with invasive cancer, an increase in the number of pregnancies proved to increase the risk of cervical cancer, this relationship was proven to be significant. In addition, early sexual debut was

reported to increased odds of invasive cancer (Bayo, Bosch, de Sanjose, Munoz, Combita, Coursaget, Diaz, Dolo, van den Brule & Meijer, 2015).

2.5 CAUSES OF CERVICAL CANCER

Rhee *et al* (2010) indicated that cervical cancer has positive association with infection of human papillomavirus (HPV), and repeated or persistent HPV infections appear to raise the chances of developing the disease, HPV is a common sexually-transmitted disease that does not always cause symptomatic disease in infected individuals (Rhee *et al*, 2010).

The most probable cause for cervical cancer according to epidemiological studies is some sexually transmitted virus, which can be passed on from male to female or vice versa (Brinton, 2012; Brandon &Feist, 2016; Chomet & Chomet, 20105The suspected agents include chlamydia, spermatozoa, herpes simplex virus, bacterial vaginosis, syphilis, and gonorrhoea (Brinton, 2012; Morrow & Townsend, 2011).

The virus that is most suspected to cause cervical cancer is the HPV. Munoz and Bosch (2016) reviewed the literature on the topic and concluded that there is compelling evidence suggesting a causal relationship between HPV infection and cervical cancer. However, other researchers have pointed out that not all types of the HPV initiate cancer. Some types of HPV are of lower risk and produce only abnormal changes while others such as the HPV type 16 and 18 can produce malignancy (Brinton, 2012).

2.6 THE LINK BETWEEN CERVICAL CANCER AND HIV AND AIDS

Studies have suggested that the lifespan of women living with HIV is prolonged through the use of HAART (highly active antiretroviral therapy), which results in an increased risk of contracting cervical cancer (Health Systems Trust, 2014). The relationship between HIV and cervical cancer has been established through several studies conducted in Africa on HIV negative and HIV positive women. It has been reported that HIV positive women with pathologies of the cervix, progress to invasive cancer quickly compared to HIV negative

women (Health Systems Trust, 2014, Chirenje *et al*, 2013, Ruche *et al*, 1998, Franceschi & Jaffe, 2017). Franceschi and Jaffe (2017) further emphasised the need for offering cervical screening to all women who are HIV positive so that the opportunity of preventing invasive cancer will not be missed.

2.7 PREVENTION OF CERVICAL CANCER

Okokwo, Kerna and Brown (2018) argued that, secondary prevention is the most effective and realistic strategy for prevention of cancer of the cervix. Secondary prevention refers to early detection and treatment of precursors of cancer of the cervix. The point of cervical cancer screening is to screen women into two groups: (1) those women that are more likely to develop cancer of the cervix and (2) those women that are less likely to develop cancer of the cervix.

A study done in South Africa reported barriers to the provision and expansion of cervical cancer screening services. It revealed that service providers were not provided with ongoing education and training in order to increase their awareness about screening and upgrade their skills (Mookeng, Mavundla & Mcfarland, 2010).

In Namibia, prevention of cervical cancer is done through early detection by screening of precancerous lesions and treatment of these lesions before they progress to invasive cancer. The Cancer Association of Namibia in September 2019, announced its first national HPV screening program to help to fight and reduce the incidences of cervical cancer in the country (Xinhua, 2019).

2.7.1 Cervical cancer screening methods

Cervical cancer screening detects precancerous lesions which can be treated before they become invasive cancers. Cervical cancer is rated to be one of the most preventable cancers because of the many screening methods that can be done to detect the possibility of it

coming. These are methods such as cervical cytology (Pap smear), HPV DNA PCR test and VIA or VILI (Visual Inspection with Acid or Lugol's Iodine) (Okokwo *et al*, 2018).

The more common and most well-established method is that of cervical cytology. It is known to be the standard screening method for cervical cancer and premalignant cervical lesions since it was first introduced by Papanicolaou in 1941 and it was then named after the founder (Okokwo *et al*, 2018).

The aim of cervical cytology is to detect cancer of the cervix while it is still in its early asymptomatic form when it can be treated successfully. During a Pap smear, cells are scraped from the external surface of the cervix (ectocervix) and the cervical canal (endocervix) to evaluate the transformation zone, which is the area at risk for neoplasia. This is done under a speculum examination. A Pap smear is done to obtain cells to detect abnormalities in the cervix. Thus, it is a test that is predictive of disease and is not for making a diagnosis of cancer of the cervix (Okokwo *et al*, 2018). After pre-cancerous lesions are detected, a further investigation may be warranted with colposcopy, which can be with or without biopsy (Foxx, 2017).

Because of a significant association between HPV and cervical cancer, HPV DNA was introduced as an alternative to cytology cervical cancer screening which is used more to detect high risk HPV infections and provides more clinical sensitivity and specificity for detection of cervical intraepithelial neoplasia. This was to minimise redundant or excessive follow-up procedures (Bayo *et al*., 2009). Both Pap smear and HPV DNA methods are done under the same procedure, they all require speculum.

Alternative methods to reduce the incidence of invasive cervical cancer resulting from HPV infection have been researched and explored. Given this, HPV vaccine has been developed to reduce the risk of cervical cancer caused by HPV. There is no much-established literature on

this vaccine. However, there would be a challenge in giving out information to the communities about the vaccine availability in poor resource settings. (Moodley, 2016). Because this vaccine is said to be expensive, in Namibia it is only available in private health sectors.

The VIA method was first introduced by Schiller in 1930 (Lynette Denny, MD, Section Editor, Barbara Goff, & the Deputy Editor, & Sandy J Falk, n.d.). The purpose of the VIA is to detect well defined dull aceto-white lesions on the cervix. This will lead to the early diagnosis of high-grade cervical intraepithelial neoplasia and early preclinical, asymptomatic invasive cancer. The VIA method is more advantageous in a sense that it is a real-time screening test, and the outcome is known soon after the procedure. This is good because it allows further investigations or treatment to be planned and carried out during the same visit. Visual inspection is indicated for women who do not have access to cytology and HPV DNA test, otherwise there is no absolute contraindication to Visual inspection test (Munoz & Bosch, 2016).

Studies showed that screening for precancerous cervical lesions using visual inspection with acetic acid is a simple, low cost and efficient alternative to cytology testing in low-resource areas moreover, other studies from other African low income countries (Sudan-Mozambique) showed that the VIA is a feasible and acceptable cervical cancer screening method in a primary health care setting (Sauvaget, Fayette, Muwonge, Wesley & Sankaranarayanan, 2011 and Moon, Silva-Matos, Cordoso, Baptista & Sida, 2012). Since 2010, Morocco implemented a systematic VIA based screening for cervical cancer in primary health care facility. Training sessions were organised for all nurses in order to familiarise and to motivate them to use the VIA for all eligible women.

The International Training and Education Center for Health (I-TECH) through the Namibian Ministry of Health and Social Services launched a direct service delivery of the provision of cervical cancer screening for HIV-positive women, in Khomas region. Between octber 2018 and March 2019, a number of 536 HIV positive women was screened of which 65 women received treatment for precancerous lesion (O'Malley, 2020). Other than that, women in Namibia get options to be screened during different visits at the hospital. The Ministry of Health and Social Services have a guideline for HIV positive women to be screened yearly and HIV negative women to be screened after every three years. In addition, there are type of visits that women get screened for cervical cancer as part of comprehensive primary healthcare. These are visits such as follow up visits for HIV positive women, during postnatal and when women book for cervical screening, with the screening age of 21-64 years. The Pap smear and VIA, are currently the main screening tests in Namibia (Human Papillomavirus and Related Diseases Report NAMIBIA, n.d.).

2.8 GLOBAL OVERVIEW OF KNOWLEDGE, ATTITUDES AND PRACTICES (KAP) ON CERVICAL CANCER AMONG NURSES

2.8.1 Socio-demographic characteristics

KAP studies on cervical cancer have presented similar demographic characteristics, such as gender, age, marital status, years of working experience, higher qualification, cadres to name a few. In a study conducted by Goyal, Vaishnav, Shrivastava, Verma and Modi (2013) in their socio demographic data they had marital status, age at marriage, age at first intercourse and religion. Majority of nurses (88%) in their study were married. In a different study, Urasa & Darj (2011) asked participants' age groups, cadres, department and years of working experience. Their study sample was made up of more enrolled nurses than registered nurses. Nurses aged more than 40 years constituted the majority (62%). The mean duration of working experience was 21 years with the standard deviation of 10.6, also nurses with more than 20 years of working experience made up the largest proportion (53.3%). In a study done

in Morocco by Najdi, Benaicha, Fakir, Tachfouti, Berraho, Khazraji, Belakhal, Abousselham, Bekkali, and Nejjari, (2016) they asked the participants' age, sex, seniority in public health, seniority in current position, training of cervical cancer and exercising area as in rural or urban. In Najdi *et al* (2016) study, majority (95.5%) of the nurses were female and the mean age was 45.15. The majority (91.6%) of the nurses had gone under training of cervical cancer screening. The current study used data from these study as long as relevance is concerned.

2.8.2 Knowledge of nurses towards cervical cancer and cervical cancer screening

A study done in Nigeria to investigate the knowledge, attitudes and practices of nurses towards cervical cancer screening revealed a good knowledge of cervical cancer among the respondents with a limited understanding of the types of cervical cancer screening techniques and a poor disposition towards undergoing cervical cancer screening (Awodele, Adeyomoye, Kwashi & Dolapo, 2011). It was recommended that the institutions should periodically organise seminars and training for health personnel especially the nurses which form a group of professionals that should give health education to women about cervical cancer, (Awodele *et al.,* 2011).

In a different study done to determine nurses' awareness of cervical cancer and their own screening practices at a hospital in Tanzania, it reported that less than half of the nurses had adequate knowledge regarding cervical cancer (Urasa & Darj, 2011). There was a significant association between knowledge levels of causes of cervical cancer and transmission of HPV and age. Knowledge was more adequate among the young nurses and knowledge differed significantly between cadres. The registered nurses had more adequate knowledge than enrolled nurses. The majority did not know screening intervals and a few were aware of HPV vaccine. Most nurses (84.6%) had never had a Pap smear examination. The majority of the nurses in this study also had inadequate knowledge on transmission of HPV, causes, risks, symptoms, treatment and prevention of cervical cancer (Urasa & Darj, 2011).

In a study conducted by Najdi *et al* (2016) in Morocco, nurses of that study were found to have adequate knowledge about cervical cancer risk factors. This finding is not the same with other studies conducted in Uganda, Turkey, Nigeria and Tanzania (Urasa & Darj, 2011). The difference could be explained by the fact that Najdi *et al* (2016) conducted their study in the training area where most nurses have already gone under training of cervical cancer with the purpose of implementing early detection programs. However, Najdi *et al* (2016) found some gaps in nurse's knowledge regarding the prevention of the Human papilloma virus (HPV) transmission. In fact, about 60% of nurses believed that condom can allow a total protection against the HPV transmission. Nurses have a crucial role in health education and in rising awareness of the target population regarding the HPV vaccine (Nadj *et al*, 2016) Indeed, studies have shown that attitudes of teenage girls toward the HPV vaccines are directly dependent on the nurses' level of knowledge on the HPV infection whether in developed or developing countries (Navalpakam, Dany, Hajj Hussein, 2016; Dany, Chidiac & Nassar, 2015). So, in order for the nurses to be able to play their role effectively and wholly as health educators, their knowledge must be constantly updated and improved. This, as well will strengthen their role as opinion leaders in their respective communities (Rosen, DiClemente, Shepard, Wilson & Fehr, 2016).

In a study conducted by Gebrie, Belete, Lemlem, and Woreta (2015) on Knowledge, Preventive Practice and associated factors of female nurses' towards Cervical Cancer in the Selected Government Hospitals in Addis Ababa, distribution of knowledge score on cervical cancer risk factors, main presenting symptoms, treatment options and preventive measures amongst female nurses. Of the respondents, only 36.9% of respondents were aware that cervical cancer is the leading cause of cancer death in developing countries, 35.8% agreed that it was the second leading cause following breast cancer, while 20.8% reported they did not know. Well over half the sample (83.8%) reported that there were risk factors for cervical

cancer. About the knowledge of specific risk factors, Gebrie *et al* (2015) found that, 53.5% of the respondents knew that having multiple sexual partners is a risk factor followed by sexually transmitted infections (47.3%) and early onset of sexual activity (45.4%). Many of the respondents (59.6%) knew that the most common cause of cervical cancer is Human Papilloma Virus.

Regarding the respondents' knowledge of the main symptoms of cervical cancer, Gebrie *et al* (2015) found that, 51.2% respondents mentioned bleeding after intercourse, 48.1% pain during sexual intercourse, 41.5% offensive vaginal discharge, 37.3% abnormal bleeding between periods while 13.1% of the respondents stated that cervical cancer has no symptoms. Just under half the sample used by Gebrie *et al* (2015) in their study, (46.9%) respondents correctly identified colposcopy as investigation of abnormal cells, with 27.3% being unsure. In relation to Pap smear, 86.5% of nurses had heard about the test. Only 28.5% of the respondents reported at age 21or within three years of the first time of sexual intercourse as when a woman start being tested; 28.5% gave an incorrect answer for the recommended frequency of Pap smear test such as every 10 years.

Majority (78.8%) of nurses used by Gebrie *et al* (2015) in their study knew that cervical cancer can be prevented if proper measures are being taken, while very few stated that cervical cancer cannot be prevented and less than 10 percent claimed they did know anything about prevention of cervical cancer. Regular medical check-ups (screening) was mentioned by majority of the respondents (72.3%) as a helpful prevention measure, and 91.5% also knew that cervical cancer can be treated. When the respondents were asked about treatment options, almost 40% mentioned surgery, chemotherapy, less than 10% radiation therapy; and few of the participants said treatment according to the stage. The majority agreed that cervical cancer can be cured if detected early (Gebrie *et al* (2015).

A study conducted by Pegu, Dhiman, Chaturvedi and Sharma (2017) showed that nursing staff had average knowledge and attitudes towards cervical cancer but has limited understanding of different types of cervical cancer screening technique.

According to Rositch, Gatuguta and Choi (2014), health literacy is the ability to read and comprehend medical terminology, understand and act on health information such as medication instructions, appointment slips, and complete health-related forms. To this extent, knowledge was reported to be associated with health literacy. This could simply mean that the more literate a person is, the more knowledgeable the person will be and the more likely he or she is to gain access to socially privileged positions and thereby gain the capacity and the information to influence thoughts, plans and behaviours. Rositch *et al* (2014) further reported that low health literacy correlated with less knowledge about cervical cancer screening. Similarly, Sudenga, Rositch, Oteino & Smith (2013) reported that lack of knowledge about cervical cancer is one of barriers to cervical cancer screening.

Sudenga *et al.* (2013) argued that because the doctor to patient ratio is low in India, if trained nursing staffs could act both as health educators and service providers they can help in spreading awareness regarding cervical cancer in the target population. Sudenga *et al.* (2013) concluded that, in order to have a successful cancer control program, nursing staff must themselves be aware of facts about cervical cancer and screening procedures.

2.8.3 Attitudes of nurses towards cervical cancer and cervical cancer screening

According to a study done to determine awareness of cervical cancer and screening in rural India reported that a large number (184) of participants understood cancer of cervix as a public health problem. Closely one-third of the study participants perceived even the precancerous stage of cervix as an incurable and fatal illness. This pessimistic attitude of cancer fatalism needs to be addressed, as it has been long identified as a barrier to participation in cancer screening, detection and treatment. Also the majority of participants

held a view that Pap test is doctor's procedure. Such attitudes that screening is to be done by a doctor or a gynaecologist only, needs to change for the success of any kind of cancer screening program (Shashank, Chanderdeep, Sita & Nidhi, 2013).

Awodele *et al* (2011) in a study conducted in Nigeria found nurses in their study to have good attitudes. However, in a study conducted by Najdi *et al* (2016) in Morocco, when nurses were asked about their daily screening activities, 90% of them admitted that they provide occasionally tests for cervical cancer screening for their patients but, not regularly and not for all eligible patients. The main reason was found as the refusal of patients to be screened by a male examiner (notice of 84 nurses), On the other hand, 104 nurses argued they have too much patients and, therefore, they have not enough time for screening. Najdi *et al* (2016) later concluded that attitudes and practices among nurses towards cervical cancer screening were negative, as most of the nurses admitted that they did not provide regularly tests and they did not screen eligible women.

Pegu *et al* (2017) study results showed that female nurses had average knowledge and positive attitude towards cervical cancer screening. They were not aware of the routine screening guidelines and had limited understanding of different types of cervical cancer screening techniques. Hence, it was recommended that routine training should be given on regular basis to all the health care providers (Pegu *et al.*, 2017).

2.8.4 Practices of nurses on the provision of cervical cancer services

According to Urasa and Darj (2011) study done to determine nurses' awareness of cervical cancer and their own screening practices at a hospital in Tanzania revealed that most of the respondents had never had a Pap smear and the most common reason (54.7%) was not knowing where to go for the test, followed by seeing no reason for the test (13.1%), being afraid of the procedure (9.5%) and being afraid of bad results (7.3%).

According to Shashank *et al.* (2013) study to determine awareness of cervical cancer and screening in rural India. Reported that 34% of the respondent knew the correct timing of Pap test. On periodicity of Pap test, the majority (79%) of the respondents believed that Pap smear should only be repeated in the presence of symptoms. Almost all of them (225) knew cervical biopsy as an alternate modality, however, only 34% were aware of the visual inspection with acetic acid as a tool for cervical cancer screening. The study concluded that nurses' practices of cervical cancer could not be rated as positive.

In a study conducted by Najdi *et al*. (2016) in Morocco, it have been exposed that nurses in rural area are less likely to practice systematic cervical screening for targeted women. The nurses complained about the lack of adequate spaces for the examination. The nurses further self-explained this by several reasons such as the refusal of eligible women, the lack of examination spaces dues to the overcrowding of primary health care facilities and the lack of time to do screening. All these aspects need to be considered by screening program managers and must be carefully approached.

An analysis of data showed that nurses who work in rural areas (p=0.02), who had less seniority in the public service and who were younger, were less likely to perform cervical cancer screening in order to meet the targeted program's objectives compared to the ones that were working in the hospitals in town. After adjustment on confounding factors, working in the rural area remained the only associated factor with low screening practice among nurses (p=0.02) (Najdi *et al.*, 2016).

In a study conducted by Gebrie *et al.* (2015) in Ethiopia, practicing preventive measures of cervical cancer like pelvic exam, pap smear and HPV vaccine was found to be significantly associated with female nurses' work experience, age, marital status, professional experience, self-history of cervical cancer, unit of work, ever take care of patient with cervical cancer and

ever visit to health institution. Nurses aged 40-49 years were less likely to practice preventive measures for cervical cancer than those aged 20-29 years. Marital status was not found to be significantly associated with preventive practice when adjusted for possible confounders. Religion, education, parity and positive family history were also not significantly associated with practice of preventive measures for cervical cancer (Gebrie *et al.*, 2015). Other independent variables like ever being trained about cervical cancer and having knowledge of cervical cancer were not found to be significantly associated with preventive practice (Gebrie *et al.*, 2015).

While a number of studies have focused on challenges faced by the patients in cervical cancer management (Makin, Fort, Siegler, Ault, Rochat, 2014 & Chirenje *et al.*, 2014), few have focused on the challenges faced by the health care workers. Kawonga and Fonn (2015) identified challenges such as limited training among health care providers, lack of resources and poor data management systems. It is vital to establish the challenges faced by cervical cancer service providers and identify ways of dealing with them in order to improve health care system performance and eliminate cervical cancer incidences.

In a study conducted by Shayo (2018) in the northern part of Namibia to determine the knowledge, attitudes and practices on cervical cancer screening among healthcare workers. The study results indicated that healthcare workers were knowledgeable about risk factors, symptoms, prevention of cervical cancer and at least above 50% of the respondents had knowledge of the causes. However, nurses were observed to have inadequate knowledge of prevention of cervical cancer compared to the doctors (Shayo, 2018).

Nurses from different studies had different level of knowledge, attitudes and practices, but most of them reported inadequate knowledge, unfavourable attitudes and practices towards cervical cancer screening. There is no study same as the present, which was done in

Windhoek thus, the researcher saw it was necessary to determine KAP of the nurses regarding cervical cancer and the provision of cervical cancer services in Windhoek, Namibia.

2.9 SUMMARY OF THE CHAPTER

This chapter presented literature review of the summary of the scholarly internet articles, journal and research reports which included current knowledge on the topic. It was based on the findings or information of other published researches related to the topic, this included cervical cancer prevalence, background information on cervical cancer, risk factors, causes the link between cervical cancer and HIV and AIDS, prevention of cervical cancer and final the global overview of KAP on cervical cancer among nurses. The next chapter hold the research methodology.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter entitles the research methods used in this study. The study design, the population, the sample and sampling methods were explained. Data collection process and the process of analysing data is discussed. Reliability and validity are explained, lastly, ethical principles are outlined.

3.1 RESEARCH DESIGN

Brink, Van der Walt, and Van Rensburg (2016) defined research design as an overall plan for gathering data in a research study. The researcher employed quantitative, descriptive and analytical design. This design is suitable for this study purpose because the researcher wished to determine and describe the knowledge, attitudes and practices and also analyse the association between the key variables. Information was emphasised with the use of questionnaires. With descriptive, problems are be easily identified, justify practices and making judgements (Brink *et al*, 2016). It is for this reasons that the researcher chose this design.

3.1.1 Quantitative design

Quantitative research is used with the intention of confirming, validating and establishment of relationship and also to develop generalisations that can contribute to the theory. Generally, quantitative design is used in response to relational questions of variables within the research and involves a numeric or statistical approach to research design (Creswell, 2014). This study used a structured questionnaire for data collection, which yield statistical data.

3.1.1 Descriptive design

Descriptive research design involves the collection of information, which can be presented numerically or as individual interpretations. It includes gathering of data that describes events and organises data in form of different visual aids such as tables and figures with the aim to make the reader understands the distribution (Burns & Groove, 2013). In this study, described were the socio-demographic data, knowledge, attitudes and practices of nurses regarding cervical cancer and the provision of cervical cancer services. These were described through table and figures.

3.1.3 Analytical design

An analytical research design involves the use of proper strategies to break a problem down into element that are of essence in solving it. This design deals with the cause and effect relationship and correlations in a phenomena (Austin 2019). This design was chosen to establish assumptions and produce statistical-based association between the key variables. This helped to understand the association between socio- demographic data and knowledge, attitudes and practices of the nurses regarding cervical cancer.

3.2 POPULATION

Brink *et al* (2016) defined a population as a complete set of persons or objects that possess some common characteristic that is of interest to the researcher. Windhoek has many health care facilities about 11 facilities all over. Because of the costs involved in travelling from facility to the other, only healthcare facilities close to the researcher's residential area and workplace were chosen. The population of this study was grouped into three (3) categories, namely: hospitals, health centres and clinics. The researcher made use of Intermediate Hospital Katutura (IHK), Windhoek Central Hospital (WCH), Katutura Health Centre (KHC), Okuryangava clinic, Wanaheda clinic and Hakahana clinic. Because hospitals are divided into departments and not all departments deal with service provision on cervical cancer, the researcher have only focus on some departments such as outpatient department,

antenatal clinic and oncology department. Nurses from these department of the two (2) hospitals plus nurses from the one (1) health centre and three (3) clinics were used as the study population. The researcher consulted each healthcare facility nurse in charge to find out the number of nurses at a particular department. There are 38 nurses from WCH, 24 nurses from IHK, 13 nurses from Okuryangava clinic, 35 nurses from KHC, 9 nurses from Hakahana clinic and 8 nurses from Wanaheda, the total population was 127.

3.3 SAMPLE AND SAMPLING METHODS

Sample is defined as a subset of the population that is selected to represent the population (Burns & Groove, 2013). The researcher used the following formula to calculate the sample size:

The sample size was calculated using: Sample size $=n=\frac{N}{1+N\times a^2}$; N= Total population; n= sample size; a = confidence limit at 5%= 0.05

$$n=\frac{127}{1+127\times 0.05^2}$$

$$n=\frac{127}{1.3175}$$

n= 96

The following table indicates how the sample size was distributed between the health facilities.

Table 3.1: Distribution of the study sample size

Health facilities	Population	Sample
IHK	24	24÷127×96=18
WCH	38	38÷127×96=29
KHC	35	35÷127×96=6
Okuryangava clinic	13	13÷127×96=10
Wanaheda clinic	8	8÷127×96=6
Hakahana	9	9÷127×96=7
Total	127	96

The researcher used a stratified random sampling method. This is when the population is divided into small groups called strata (Brink *et al.*, 2016). The population is stratified into: hospitals, clinics and health centres. The researcher then used random sampling to select participants from each stratum, proportionate to the size until the researcher obtain the sample size of 96. All participants from all strata had equal and independent chances to be selected (Burns & Groove, 2013).

3.4 RESEARCH INSTRUMENT

The researcher formulated a self-administered structured questionnaire in English language which was used to gather quantitative data. It is a paper and pencil or pen report instrument, it is simplest and least expensive to collect quantitative data (Brink *et al.*, 2016). It consisted of four sections, namely: Section A: This section consisted of socio-demographic data of the nurses. These are such as health facility, gender, marital status, rank, and qualification, work place, years of experience and attendance of cervical cancer training or workshop. Next, was Section B, which consisted of questions on the nurses' knowledge on causes, risk factors, prevention and screening and treatment of cervical cancer on a three point Likert scale 'agree', 'don't know' and 'disagree'. Section C had questions about the nurses' attitudes towards cervical cancer and cervical cancer services on a five point Likert scale: strongly agree'', ''agree'', ''don't know'', ''disagree'' and ''strongly disagree''. Section D had questions regarding the nurses' practise of cervical cancer services. See Annexure A.

3.5 PROCEDURE FOR DATA COLLECTION

Information about the knowledge, attitudes and practices of nurses regarding provision of service on cervical cancer was collected with the use of self-administered structured questionnaires because all participants could read and understand English. Data were collected at the selected health facilities in the Windhoek district. The data was collected after ethical clearance was granted by the University of Namibia and the Ministry of Health and

Social Services Research Unit. Before approaching the participants, the researcher asked for permission to conduct the study from the Chief Medical Officer. Questionnaires and consent forms were then distributed to participants. After completion, the questionnaires were collected by the researcher into the box. This box was kept away in a cupboard safe and has been stored there until and throughout analysis of data.

Inclusive criteria:

- Healthcare facilities close to and around the residential area of Ombili, Katutura and WCH were included in the study.
- The study included all the nurses at the selected health facilities which are working at the selected departments.

Exclusive criteria:

- All healthcare facilities that are far from Ombili, Katutura and WCH were excluded from the study.
- All nurses from the health facilities and departments that were not selected were excluded from the study.

3.6 RELIABILITY AND VALIDITY

3.6.1 Reliability of the research instrument

Reliability refers to the degree to which instrument can be relied on to give consistent results if used repeatedly on the same participants or if used by different researchers. A pilot study was done to test reliability with the use of Cronbach alpha by calculating the co-efficiency. Cronbach's co-efficiency alpha is a measure used to test the reliability of items in the questionnaire. Co-efficiency is done to estimates the degree of interrelatedness among a set of

items. The broadly advocated level of adequacy for coefficient alpha is 0.70. An alpha of 0.60 is also reported to be acceptable adopted from Cronbach, 1951.

3.6.2 Validity of the research instrument

Validity refers to the ability of the instrument to measure what it is supposed to measures (Brink *et al*, 2016). Similarly, Cooper, Seiford and Zhu (2011) defined validity as the extent to which a test measures what it meant to measure. For the validity of the study instrument, applied were content, face and construct validity.

3.6.2.1 Content validity

Brink *et al* (2016) defined content validity as an assessment of how well the research instrument represents all components of variable intended to be measured. This study measured the knowledge, attitudes and practices of nurses regarding cervical cancer. The questionnaire was designed used recent articles and questionnaires related to cervical cancer, to identify important aspects that need to be included in the questionnaire. The questionnaire was then presented to the research academic supervisor, who is an expert in health research, Dr Amukugo, for evaluation.

3.6.2.2 Face validity

Face validity refers to how the instrument appears to measure what it is supposed to measure (Brink *et al*, 2016). It ensures readability and clarity of content. The research methodology used was chosen in a sense that they will lead to a production of answers to the research questions. Face validity was ensured by asking and giving the questionnaires to the experts Dr H Amukugo and Mr A Karera.

3.6.2.3 Construct validity

Construct validity measures the relationship between an instrument and the related theory (Polit & Beck, 2014). It measures if the set of items constituting an instrument faithfully represents the set of aspects of a theoretical construct and does not contain items which

represent aspects not included in the theoretical construct. Used in this study is HBM for psychological and behavioural perspectives which will allow a measure of nurses' KAP.

3.7 PILOT STUDY

The questionnaires were piloted on the nurses from a different department that was not included in the actual data collection. The instrument was explained to them to ensure clarity of questions. After completion, they were asked if they have encountered any challenges in answering the questions, to this only male nurses indicated that questions of practices were not all applicable to the males and there was no an option to indicate so. The researcher then added extra option which was "not applicable". Other than that no other concern was raised. To ensure reliability, the data from the pilot study were entered into SPSS and Cronbach alpha test was done. Some questions were edited; the alpha co-efficiency was 0.724.

3.8 DATA ANALYSIS

Data was be entered into SPSS version 25. A system of double entry was used to make sure there is correct caption of data. All statistical analysis was done using SPSS version 25 with the help of a statistician. . Pearson's chi-squared test was used to compare the frequency distributions and evaluate how likely the observation that are made would be. The researcher used self-rating to rate KAP of the nurses. The questions on knowledge were 26 and the Likert scale of three points was used at each question thus the minimum score was 26, maximum was 78 and the range was 52. Three point Likert scale it was used in a sense that that first point holds the acceptable answer and if chosen participant get a score of one. Second point scores two and third point scores three. This is why the participants with low scores are rated good and vice versa. Knowledge was rated good if the participant scored 26-43, average level of knowledge was rated to the scores between 44- 61 and poor level of knowledge was rated to the scores between 62 -78.

The questions on attitudes were 15 with the five points Likert scale. The minimum score was 15 and 75 was the maximum score, the range was 60. Attitudes was grouped into two categories, Participants with the score of 15-45 were rated to have positive attitude and participants with the scores of 46- 75 were rated to have negative attitudes.

Practice scores was as well grouped into two categories. Participants with the scores ranging from 27-56 were rated to have good practice whilst participants with scores from 57-84 were rated to have poor practice.

Data was then summarised and described using descriptive statistics such percentages and frequencies which were displayed in forms of tables and figures. Cross tabulation was then done to determine the association between socio demographic characteristics and KAP.

3.8 RESEARCH ETHICS

The researcher was granted permission by the University of Namibia Postgraduate Centre (see Annexure B). Permission was further given by the Ministry of Health and Social Services Research Unit (see Annexure C). Before commencement of the study in any of the selected facilities, the researcher had to seek permission from respective the health facilities. Permission was granted by the superintended of the two hospitals, WCH and IHK respectively (see Annexures D and E). For the clinics, permission was granted the director of primary health (see Annexure F). Before handing of the questionnaire participants were verbally asked for consent which they had to give by signing the consent letter provided to them (see Annexure G).

The researcher respected the participants, in the way they were approached and requested to participate in the study. Individuals had the right to decide whether or not to participate in the study without any risks of penalty or prejudicial treatment. Informed consent was signed by each participants prior to participation in the study. The researcher also respected participant's choices if they refuse to take part in the study or to withhold information, the

researcher respected the different practices without disregarding the human rights of potential participants be forced or manipulated (Brink *et al*, 2016). The researcher ensured that the well-being of participants was well secured by protecting them from any harm and discomfort, for the outcome of the research to be beneficial to the participants or anyone else involved in terms of providing useful ideas or interventions (Brink *et al*, 2016). Participants have no feel exposed by the research process in any way and were asked to be comfortable and safe from possible harm during and after the study (Hays & Singh, 2011). Participants were given time to complete the questionnaire at a time that was convenient for them. All participants were equally valued and respected as they were approached without any form of favouritism, stigma or discrimination and no false promises was made to anyone in the selected population, as stated by (Brink *et al*, 2016). Participants were equally treated during the data collection process.

3.9 SUMMARY OF THE CHAPTER

The study methods, adopted research approach and designs, study population, sample and sampling methods were discussed in this chapter. It further discussed the reliability and validity of research instrument, pilot study, analysis of data and presentation and finally, the ethics considered in this study.

CHAPTER 4

PRESENTATION STUDY FINDING

4.1 INTRODUCTION

Presented in this chapter is the analysis of questionnaires that were used for data collection. Demographic data and descriptive statistics are presented to ensure a clear background of information. Furthermore, a detailed analysis was conducted to explain data in more different ways in attempt to answer to the study objectives.

4.2 OVERVIEW OF DATA COLLECTION

As discussed in Chapter 3, 3.4 the questionnaire was used to collect data. It consisted of four sections of closed-ended questions. Section A was the demographic data of the participants, which included gender, age, marital status, rank, qualification, work place, years of experience and cervical cancer training. Furthermore, section B had the questions of knowledge of participants in regard to cervical cancer, section C, was the questions of the participants' attitudes toward cervical cancer and cervical cancer services and lastly section D, participants were asked about their practices towards cervical cancer services.

4.3 RESPONSE RATE

Welman, Kruger and Mitchell (2019) stated that a response rate of above 50% is enough to obtain meaningful statistical analysis and get acceptable results. Of n=96 questionnaires only n=74 was completed and received out which ended up to the response rate of 77.1%. Data was entered into SPSS and statistically analysed. The background of information is presented below.

4.4 PRESENTATION OF RESEARCH RESULTS

4.4.1 Socio demographic results

Participants were asked different socio-demographic characteristics. They were asked to indicate the applicable choice by placing an (x) next to it. These characteristics were such as: health facility, gender, marital status, rank, and qualification, work place, years of experience

and attendance of cervical cancer training or workshop. The results are going to be discussed below:

4.4.1.1 Participants' health facility

Participants were asked to indicate the name of their health facilities. Below are the results.

Table 4.1: Participants' health facility

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	WCH	28	37.8	37.8	37.8
	IHK	10	13.5	13.5	51.4
	KHC	12	16.2	16.2	67.6
	Okuryangava clinic	7	9.5	9.5	77.0
	Hakahana clinic	9	12.2	12.2	89.2
	Wanaheda clinic	8	10.8	10.8	100.0
	Total	74	100.0	100.0	

As evident in the above table, participants came from different health facilities. The majority 28 (37.8%) came from WCH, followed by KHC 12 (16.2%), 10 (13.5%) from IHK 9 (12.2%) from Hakahana Clinic, 8 (10.8%) from Wanaheda Clinic and 7 (9.5%) which is the least from Okuryangava Clinic.

4.4.1.2 Participants' Gender

The study participant was formed up mostly by females 58(78.4%), than males 16 (21.6%).

4.4.1.3 Participants' Age

Participants were from different age groups, the minimum being 21 and maximum of 59. The mean is 30.05 with the standard deviation of 7.839

4.4.1.4 Participants' marital status

Participants were asked to indicate their marital status, results were analysed and showed a number of few 20 (27.0%) participants were married compared to 54 (73.0%) participants were single.

4.4.1.5 Participants' ranks

The study consisted of 47(63.5%) registered nurses and 27(36.5%) enrolled nurses.

4.4.1.6 Participants' qualifications

Participants indicated the qualification they hold. Figure 4.1 below represents the results.

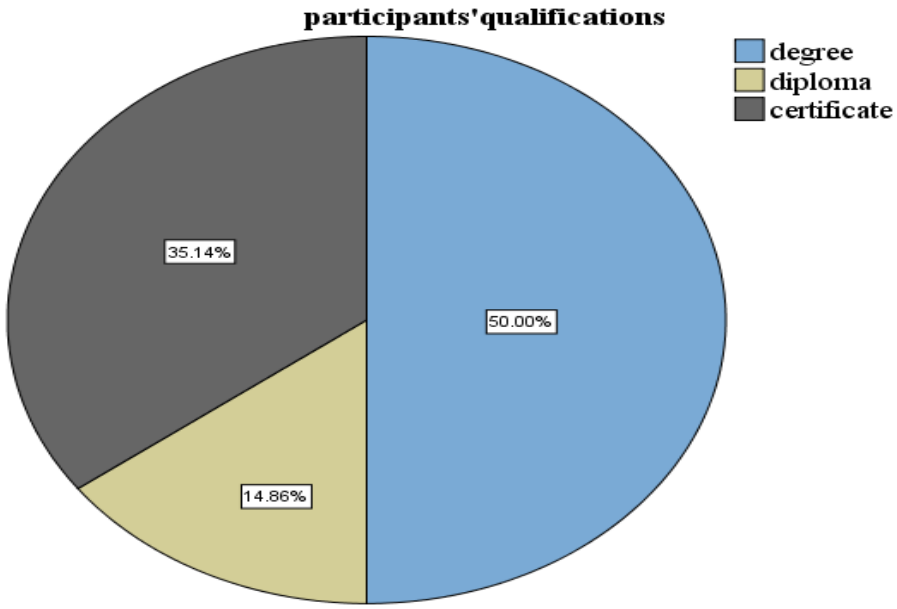

Figure 4.1: Participants' qualification

Half of the study participants hold a degree as a qualification, 35.14% qualified with a certificate and 14.86% with a diploma.

4.4.1.7 Participants' work place

Participants had to indicate their place of work by choosing from the three choices provided. Such as hospital, health centre or clinic

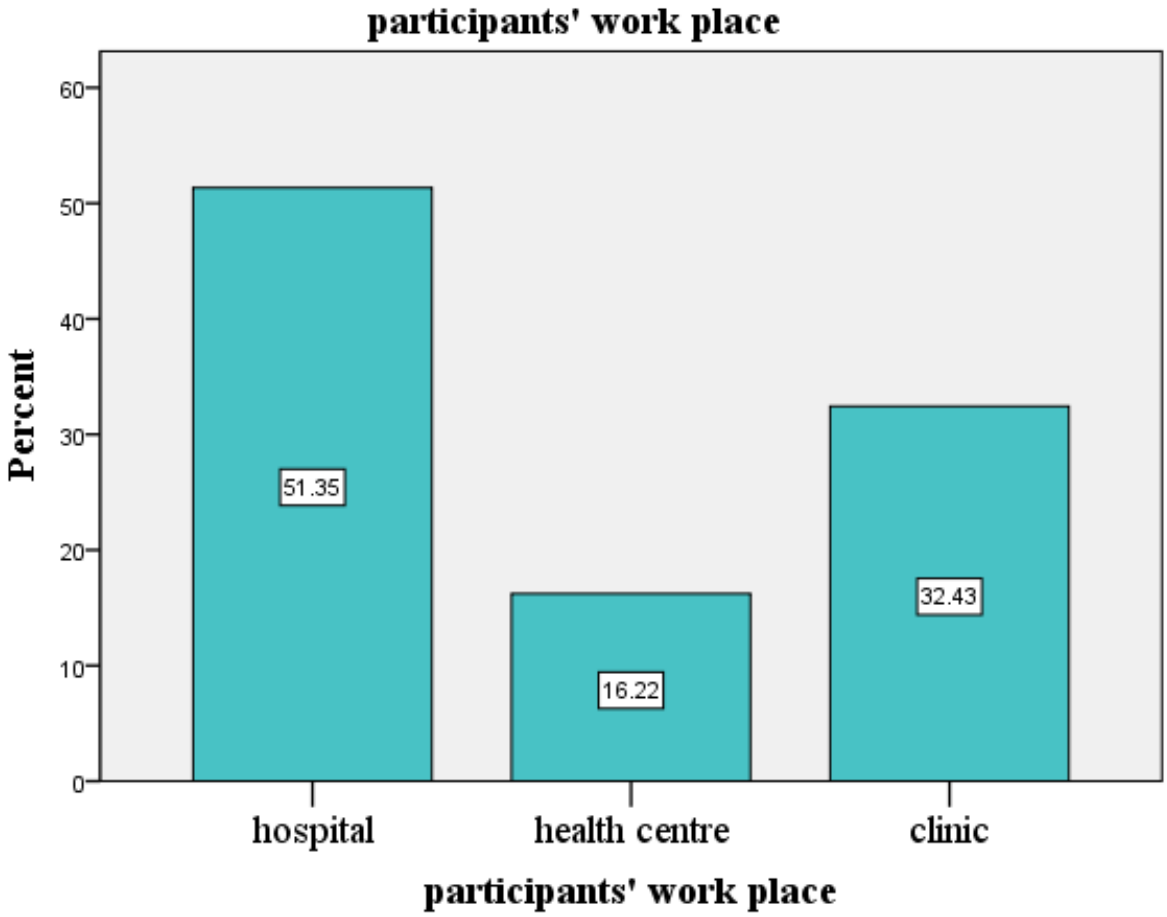

Figure 4.2: Participants' workplace

Participants from the hospital were 51.35% of the study, 16.22% from the health centre and 32.43% were from the clinic.

4.4.1.8 Participants' years of working experience

Participants had various years of working experiences. The mean years was 4.84 with the standard deviation of 6.398.

4.4.1.9 Participants' attendance of cervical cancer training

Surprisingly, out of 74 participants only 13(17.6%) have ever attended a training or workshop on cervical cancer, 61(82.4%) have never attended a training as much as cervical cancer is concerned.

4.4.2 Knowledge of nurses regarding cervical cancer and cervical cancer services (objective 1)

Participants were asked different questions to assess their knowledge. Questions on the risk factors, causes of cervical cancer, and progression of precancerous lesions to name a few were asked. Table 4.2 below presents the results.

Table 4.2: Participants' knowledge on cervical cancer

Statement	Agree	I don't know	Disagree
Item 1: The causes of cervical cancer include the following			
Item 1 a) Human papilloma infections	68 (91.8%)	3 (4.1%)	3 (4.1%)
Item 1 b) Bacterial infections	40 (54.1%)	19 (25.7%)	15 (20.3%)
Item 1 c) Genetic predisposition	52 (70.3%)	14 (18.9%)	8 (10.8%)
Item 1 d) Spicy foods	8 (10.8%)	20 (27.0%)	46 (62.2%)
Item 2 The risk factors of cervical cancer include			
Item 2 a) Smoking cigarette	43 (58.1%)	15 (20.3%)	16 (21.6%)
Item 2 b) Contraceptive pills	49 (66.2%)	11 (14.9%)	14 (18.9%)
Item 2 c) Alcohol	17 (23.0%)	30 (40.5%)	27 (36.5%)
Item2 d) Poor hygiene	37 (50.0%)	15(20.3%)	22(29.7%)
Item2 e) History of human papilloma virus	63 (85.1%)	6(8.1%)	5(6.8%)
Item 2 f) Multiple sexual partners	61(82.4%)	9(12.2%)	4(5.4%)
Item2 g) Condom use	9(12.2%)	16(21.6%)	49(66.2%)
Item2 h) High parity	39(52.7%)	21(28.4%)	14(18.9%)
Item 2 i) Early sexual debut	53(71.6%)	13(17.6%)	8(10.8%)
Item3 Cervical cancer is one of the leading causes of death in women worldwide	60(81.1%)	12(16.2%)	2(2.7%)

Item4 Cervical cancer is preventable	64(86.5%)	6(8.1%)	4(5.4%)
Item5 It is possible to detect precancerous cells	62(83.8%)	12(16.2%)	0
Item6 If untreated cervical cancer is fatal	64(86.5%)	8(10.8%)	2(2.7%)
Item7 Cervical cancer is not curable	23(31.1%)	10(13.5%)	41(55.4%)
Item8 The purpose of pap smear is to detect precancerous changes	66(90.4%)	4(5.5%)	3(4.1%)
Item9 There is a vaccine that can prevent cervical cancer	47(63.5%)	18(24.3%)	9(12.2%)
Item10 Cervical cancer can usually be found at an early stage because of the obvious symptoms	33(44.6%)	7(9.5%)	34(45.9%)
Item11 Treatments such a radiation therapy and chemotherapy are used to treat cervical cancer	67(90.5%)	5(6.8%)	2(2.7%)
Item12 For cervical cancer, the progression of precancerous cells to cancer can take 10-20years	39(52.7%)	31(41.9%)	4(5.4%)
Item13 Women should have pap smear at least every 3 years	41(55.4%)	10(13.5%)	23(31.1%)
Item14 Cervical cancer is caused by a virus that is spread sexually	49(66.2%)	13(17.6%)	12(16.2%)
Item15 During continued treatment patients should be advised to take adequate diet with essential nutrients	67(90.5%)	5(6.8%)	2(2.7%)

Presented in the table above are the participants' responses to the questions of their knowledge towards cervical cancer and cervical cancer services. Majority of the participants showed a good understanding of the causes and risk factor of cervical cancer. An impressive number of participants (91.8%) understood and agreed that human papilloma infections is one of the causes of cervical cancer. A large number of participants (81.1%) are aware that cervical cancer is the leading cause of death in women worldwide and that it can be prevented (86.5%). None of the participants disagreed that it is possible to detect precancerous cells. Participants were aware of the treatments that can be used to treat cervical cancer and that in addition to the treatment, patients need adequate diet with essential nutrients. Overall, participants presented a fair understanding of the questions and statement used to determine their knowledge on cervical cancer and cervical cancer services.

After the variables were scored, they were then categorised. Knowledge was categorised into three groups as discussed in Chapter 3. The scores were grouped as follow: good level of knowledge, average level of knowledge and poor level of knowledge. The results are presented in the tables below.

Table 4.3: Total knowledge scores

scores		Frequency	Percent	Valid Percent
Valid	29	1	1.4	1.4
	30	1	1.4	1.4
	32	7	9.5	9.5
	33	3	4.1	4.1
	34	6	8.1	8.1
	35	3	4.1	4.1
	36	3	4.1	4.1
	37	5	6.8	6.8
	38	4	5.4	5.4
	39	3	4.1	4.1
	40	5	6.8	6.8
	41	6	8.1	8.1
	42	3	4.1	4.1
	43	5	6.8	6.8
	44	5	6.8	6.8
	45	5	6.8	6.8
	46	2	2.7	2.7
	47	3	4.1	4.1
	48	1	1.4	1.4
	49	2	2.7	2.7
	54	1	1.4	1.4
	Total	74	100.0	100.0

As mention in Chapter 3, the scores presented in the table above were grouped in order to determine the participants' level of knowledge. Participants with the scores 26- 43 were rated with good level of knowledge, 44- 61 average level knowledge and scores of 62- 78 was rated with poor level of knowledge. The table below presents the knowledge categories.

Table 4.4: Total knowledge categories

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	good level of knowledge	55	74.3	74.3	74.3
	average level of knowledge	19	25.7	25.7	100.0
	Total	74	100.0	100.0	

As evident in the table above, 55(74.3%) of the participants shown a good level of knowledge while 19(25.7%) of the participants reported to have an average level of knowledge.

4.4.3 Attitudes of nurses regarding cervical cancer and the provision of cervical cancer services (objective 2)

To determine the participants' attitudes towards cervical cancer, participants were asked 15 questions scaling at five point Likert scale. These results are shown below in table 4.5

Table 4.5: Participants' attitudes towards cervical cancer

Statement	**Strongly agree**	**agree**	**I don't know**	**Disagree**	**Strongly disagree**
In general, do you believe:					
Item 1: Cervical cancer is a public health problem	44(59.5%)	23(31.1%)	3(4.1%)	3(4.1%)	1(1.4%)
Item 2: Secondary prevention of cervical cancer is also screening and treatment	35(47.3%)	35(47.3%)	1(1.4%)	2(2.7%)	1(1.4%)
Item 3: Precancerous lesions can be treated	42(56.8%)	25(33.8%)	6(8.1%)	1(1.4%)	0
Item 4: Cervical cytology is also known as Pap smear	36(48.6%)	27(36.5%)	6(8.1%)	4(5.4%)	1(1.4%)
Item 5: Pap test can detect precancerous lesions	42(56.8%)	23(31.1%)	5(6.8%)	2(2.7%)	2(2.7%)
Item 6: There is no need to have cervical cancer screening if it was not administered by the doctor	0	4(5.4%)	3(4.1%)	22(29.7%)	45(60.8%)
Item 7: Nurses can also carry out cervical cancer screening and treatment procedures	19(25.7%)	37(50.0%)	8(10.8%)	7(9.5%)	3(4.1%)
Item 8: If someone is having a normal pap smear she does not	1(1.4%)	4(5.4%)	3(4.1%)	26(35.1%)	40(54.1%)

need pap smear in the future					
Item 9: Hysterectomy can be used to treat cervical cancer	13(17.6%)	28(37.8%)	13(17.6%)	6(8.1%)	14(18.9%)
Item 10: Cervical cancer patients should be advised to put in special effort to maintain a healthy life style	42(56.8%)	31(41.9%)	0 (0%)	0 (0%)	1(1.4%)
Item 11: Caring for a cervical cancer patient is the same as caring for any other patients	36(48.6%)	22(29.7%)	0(0%)	11(14.9%)	5(6.8%)
Item 12: Cervical cancer screening is time consuming	0(0%)	5(6.8%)	6(8.1%)	27(36.5%)	36(48.6%)
Item13: Supporting of a cervical cancer patient is important to improve their life quality	42(56.8%)	29(39.2%)	1(1.4%)	1(1.4%)	1(1.4%)
Item 14: The only reason for most of the deaths due to cervical cancer is late diagnosis	53(71.6%)	19(25.7%)	2(2.7%)	0(0%)	0(0%)
Item15: Cervical cancer patients need social, spiritual and emotional support as much as they need medications	54(73.0%)	19(25.7%)	1(1.4%)	0(0%)	0(0%)

Above are the results of the participants' attitudes. Participants were given questions to which they had to react to. The majority of the participants a good feeling by agreeing that cervical cancer is a health problem and that the secondary prevention of cervical cancer is screening and treatment. A number of (60.8%) participants had a strong disagreement that there is no need for a cervical cancer screening if it was not prescribed by the doctor. Very few (6.8%) agreed that cervical cancer screening is time consuming. Also, none of the participants held a disagreement that the reason for most of the deaths is due to late diagnosis of cervical cancer. All in all, many of the participants showed good concern to cervical cancer and the provision of its services.

The total attitudes scores were grouped into two categories. According to rates mentioned in Chapter 3, participants were rated with positive attitudes and negative attitudes. The table below presents the total scores.

Table 4.6: Total attitude scores

Scores		Frequency	Percent	Valid Percent
	16	1	1.4	1.4
	17	2	2.7	2.7
	18	4	5.4	5.4
	20	2	2.7	2.7
	21	6	8.1	8.1
	22	9	12.2	12.2
	23	7	9.5	9.5
	24	4	5.4	5.4
	25	5	6.8	6.8
	26	5	6.8	6.8
Valid	27	5	6.8	6.8
	28	3	4.1	4.1
	29	4	5.4	5.4
	30	6	8.1	8.1
	31	2	2.7	2.7
	33	2	2.7	2.7
	34	3	4.1	4.1
	35	1	1.4	1.4
	36	2	2.7	2.7
	39	1	1.4	1.4
	Total	74	100.0	100.0

The scores presented in the table above were categorised and used to rate the participants' attitudes. Participants with the score of 15-45 were rated to have positive attitude and participants with the scores of 46- 75 were rated to have negative attitudes. These categories are presented in the table below:

Table 4.7: Total attitude categories

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	positive attitude	74	100.0	100.0	100.0

As indicated in the table above, all participants in this study reported to have positive attitudes towards cervical cancer.

4.4.4 Practices of nurses regarding cervical cancer and cervical cancer services (objective 3)

Participants' practices of provision of cervical cancer services was assessed. Below are the results presented in table 4.8

Table 4.8: Participants' practices on cervical cancer services provision

Statement	Yes, always	Yes, sometimes	No, not at all	
Item 1: Who should be screened for cervical cancer?				
Item1 a): Women older than 30years of age	54(74.0%)	10(13.7%)	9(12.2%)	
Item1 b): All married women	30(41.1%)	28(38.4%)	15(20.5%)	
Item1 c): women presenting with symptoms only	28(38.4%)	11(15.1%)	34(46.6%)	
Item1 d): all sexual active women	51(73.9%)	11(15.9%)	7(10.1%)	
Item 2: What is the ideal screening interval?				
Item2 a): 1 year for HIV positive women	35(47.9%)	6(8.2%)	32(43.8%)	
Item2 b) 2 years for all women	8(11.0%)	19(26.0%)	46(63.0%)	
Item2 c): 3 years for HIV negative women	23(31.5%)	12(16.4%)	38(52.1%)	
Item 3: Have you ever diagnosed a patient with cervical cancer?	6(8.2%)	6(8.2%)	61(83.6%)	
Item 4: Have you ever treated precancerous lesions in a patient	5(6.8%)	10(13.7%)	58(79.5%)	
Item 5: Have you ever diagnosed precancerous lesion in a patient?	7(9.6%)	9(12.3%)	57(78.1%)	
Item 6: Are you willing to go for cervical cancer screening?	54(73.9%)	1(1.4%)	2(2.7%)	N/A 16(22%)
Item 7: Are you vaccinated for cervical cancer?	8(11.2%)	1(1.4%)	48(66.4%)	16(22%)

Item 8: Have you ever nursed a cervical cancer patient?	17(23.3%)	25(34.2%)	31(42.5%)	
Item 9: Do you advise your family members to undergo screening for cervical cancer	39(53.4%)	25(34.2%)	9(12.3%)	
Item 10: What is the reason for not getting self-pap smear?				N/A
Item10 a): Lack of awareness	31(42.5%)	11(15.1%)	15(20.8%)	16(21.6%)
Item10 b): Not at risk	10(13.7%)	15(20.5%)	32(43.9%)	16(21.9%)
Item10 c): Lack of symptoms	9(12.3%)	16(21.9%)	32(43.9%)	16(21.9%)
Item10 d): Fear of pain	18(24.7%)	22(30.1%)	17(23.3%)	16(21.9%)
Item10 e): Afraid of outcomes	22(30.1%)	15(20.5%)	20(27.4%)	16(21.9%)
Item 11: seeking help from cervical cancer support group is beneficial for the patient	58(79.5%)	15(20.5%)	0	
Item 12: Do you advise cervical cancer patient on safe sex practices?	49(67.1%)	22(30.1%)	2(2.7%)	
Item 13: Regular follow-ups and treatments are required to treat the symptoms effectively	62(84.9%)	10(13.7%)	1(1.4%)	
Item 14: Information about cervical cancer is given all women who visit the health facility	26(35.6%)	27(37.0%)	20(27.4%)	
Item 15: What do you think are the methods to prevent cervical cancer?	**Yes**		**No**	
Item15 a): Vaccination	64(87.7%)		9(12.3%)	
Item 15 b): Periodic screening	66(90.4%)		7(9.6%)	
Item15 c): Awareness and health education	68(93.2%)		5(6.8%)	
Item15 d): Hysterectomy	19(26.0%)		54(74.0%)	

Presented in the table above are the participants' results on practices of cervical cancer services. A large number (73.9%) of participants thought that all sexually active women should be screened for cervical cancer. Given the MOHSS ART guideline on cervical cancer screening, most of the participants did not know the correct screening interval for HIV-

positive women and HIV- negative as stipulated in the earlier mentioned guideline. Few (13.7%) of the participants reported to have vaccinated against cervical. Lack of awareness was one of the reasons why majority of the female participants did not get themselves screened for cervical cancer. A number of (93.2%) indicated that the practice of health education and awareness raising can prevent cervical cancer. Most participants results on practice of cervical cancer service were not quiet impressive.

Discussed above was the participants' results to the questions of their practices of cervical cancer services. These responses were scored in order to rate the participants' practices. The Practices scores were grouped into two categories. Participants with the scores ranging from 27-56 were rated to have good practices whilst participants with scores from 57-84 were rated to have poor practices. The table below presents the total practices scores

Table 4.9: Total practice scores

Scores		Frequency	Percent	Valid Percent
Valid	1	1	1.4	1.4
	34	1	1.4	1.4
	35	1	1.4	1.4
	36	2	2.7	2.7
	41	1	1.4	1.4
	42	1	1.4	1.4
	43	2	2.7	2.7
	44	5	6.8	6.8
	45	1	1.4	1.4
	46	3	4.1	4.1
	47	3	4.1	4.1
	48	7	9.5	9.5
	49	1	1.4	1.4
	50	2	2.7	2.7
	51	2	2.7	2.7
	52	3	4.1	4.1
	53	6	8.1	8.1
	54	2	2.7	2.7
	56	9	12.2	12.2
	57	5	6.8	6.8

	58	4	5.4	5.4
	59	2	2.7	2.7
	60	5	6.8	6.8
	63	1	1.4	1.4
	66	2	2.7	2.7
	71	1	1.4	1.4
	72	1	1.4	1.4
	Total	74	100.0	100.0

These scores were categorised as mentioned early, the table below presents the total practices categories.

Table 4.10: Total practice categories

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	good practice	52	70.3	71.2	71.2
	poor practice	21	28.4	28.8	100.0
	Total	73	98.6	100.0	
Missing	System	1	1.4		
Total		74	100.0		

The majority of the participants revealed to have good practices 52(71.2%) compared to a number of 21(28.8%) participants that shown poor practices.

4.4.5 Association between key variables (objective 4)

To answer this objective, which was to analyse the association between the key variables. Data was further analysed into cross tabulation with chi-squared p test. For all analysis the alpha level was set at $p \leq 0.05$. Identified as key variables were; socio-demographic characteristics, knowledge, attitudes, and practices.

4.4.5.1 Association between demographic characteristics and overall knowledge

The association between some of the participants' demographic characteristics and the overall knowledge category was analysed and chi-squared test was done to determine the p-value. The following table presents the results.

Table 4.11: Association between demographic characteristics and overall knowledge

Participants' characteristics		**Overall knowledge**			
		GOOD	**AVERAGE**	**Poor**	**p value**
Gender	Female	45(77.6%)	13(22.4%)	0(0%)	0.221
	Male	10(62.5%)	6(37.5%)	0(0%)	
Qualification	Degree	30(81.1%)	7(18.9%)	0(0%)	0.387
	Diploma	7(63.6%)	4(36.4%)	0(0%)	
	Certificate	18(69.2%)	8(30.8%)	0(0%)	
Health facility	WCH	18(64.3%)	10(35.7%)	0(0%)	0.293
	IHK	9(90.0%)	1(10%)	0(0%)	
	KHC	10(83.3%)	2(16.7%)	0(0%)	
	Okuryangava	6(85.7%)	1(14.3%)	0(0%)	
	Hakahana	5(55.6%)	4(44.4%)	0(0%)	
	Wanaheda	7(87.5%)	1(12.5%)	0(0%)	
Rank	Registered nurse	36(76.6%)	11(23.4%)	0(0%)	0.555
	Enrolled nurse	19(70.4%)	8(29.6%)	0(0%)	
attendance of cervical cancer training	Yes	9(69.2%)	4(30.8%)	0(0%)	0.643
	no	46(75.4%)	15(24.6%)	0(0%)	
Work place	Hospital	27(71.1%)	11(28.9%)	0(0%)	0.694
	Health centre	10(83.3%)	2(16.7%)	0(0%)	
	clinic	18(75.0%)	6(25.0%)	0(0%)	

Association between each participants' demographic characteristics and overall level of knowledge is discussed below:

Participants' gender and knowledge

Most (77.6%) of the female nurse reported good level of knowledge compared to male nurses (62.5%). A few number (22.4%) of female nurses reported average level of knowledge than 37.5% of the male nurses, p=0.221, this indicated that there was no significant association between the nurses' gender and overall level of knowledge.

Participants' qualification and knowledge

Many (81.1%) participants that qualified with a degree had good level of knowledge, followed by certificate (69.2%) and diploma (63.6%). Many (36.4%) participants with diploma reported an average level of knowledge compared to all other qualifications. With the p-value of 0.387, it was revealed that participants' qualification was not significantly associated with overall level of knowledge.

Participants' health facility and knowledge

Good level of knowledge was more among the participants of IHK (90.0%), followed by WC (87.5%), OC (85.7%), KHC (83.3%), WCH (64.3%) and lastly HC (55.6%). Most (44.4%) of the nurses from HC reported an average level of knowledge compared to 35.7% of WCH, 16.7% of KHC, 14.3% from OC, 12.5% WC and very few (10%) from IHK. It was then concluded that participants' health facility was not significantly associated with overall level of knowledge, p= 0.293.

Participants' rank and overall knowledge

Good level of knowledge was reported more among the registered nurses (76.6%) compared to enrolled nurses (70.4%). However, there was no significant association between participants' rank and overall level of knowledge, p=0.555.

Participants' attendance of cervical cancer training and overall knowledge

Participants who have never attended cervical cancer training reported more good level of knowledge (75.4%) than participants who attended cervical cancer screening training. This results revealed that attendance of cervical cancer screening training is not significantly associated with the overall level of knowledge, p=0.643.

Participants' work place and overall knowledge

Many (83.3%) participants who work at the health centre reported good level of knowledge, followed by hospitals (71.1%) and participants from the clinic (75.0%). However, there was no a significant association, p=0.694

There was an association between different demographic characteristics and the participants' overall level of knowledge however, according to the p-value none of the association was significant.

4.4.5.2 Association between demographic characteristics and overall practice

The association between the demographic characteristics and the participants' practices through cross tabulation and chi-squared test was done to find out the p-value. Presented below in Table 4.8 are the findings.

Table 4.12: Association between demographic characteristics and overall practice

Participants' characteristics		**Overall practice**		**p value**
		GOOD	**POOR**	
Gender	Female	47(81.0%)	11(19.0%)	0.000
	Male	5(33.3%)	10(66.7%)	
Qualification	Degree	27(75.0%)	9(25.0%)	0.409
	Diploma	6(54.5%)	5(45.5)	
	Certificate	19(73.1%)	7(26.9%)	

Health facility	WCH	19(67.9%)	9(32.1%)	0.118
	IHK	7(70.0%)	3(30.0)	
	KHC	6(54.5%)	5(45.5)	
	Okuryangava	7(100.0%)	0 (0%)	
	Hakahana	5(55.6%)	4(44.4)	
	Wanaheda	8(100.0%)		
Rank	Registered nurse	32(69.6%)	14(30.4%)	0.681
	Enrolled nurse	20(74.1%)	7(25.9%)	
attendance of cervical cancer training	yes	11(84.6%)	2(15.4%)	0.240
	no	41(68.3%)	19(31.7%)	
Work place	Hospital	26(68.4%)	12(31.6%)	0.187
	Health centre	6(54.5%)	5(45.5%)	
	Clinic	20(83.3%)	4(16.7%)	

Participants' gender and overall practice

Good practice was more among the female nurses (81.0%) than male nurses (33.3%). More than half (66.7%) of the male nurses reported poor practice. This revealed than participants' gender was significantly associated with overall practice, p=0.000.

Participants' qualification and overall practice

Many (75.0%) participants with degree as a qualification reported good practice compared to all other qualifications, certificate (73.1%) and diploma (54.5%). However, there was no a significant association between participants' qualification and overall practice, p=0.409.

Participants' health facility and overall practice

All (100%) participants from OC reported to have good practice followed by IHK (70.0%), WCH 67.9% and HC 55.6%. Participants from KHC topped the list of poor practice with 45.5%, HC 44.4%. The p-value=0.118, which indicated that there is no significant association between participants' health facility and overall practice.

Participants' rank and overall practice

Good practice was more among the enrolled nurses (74.1%) compared to registered nurses (69.6%) with the p-value=0.681, it was concluded that the association between participants' rank and overall practice was not significant.

Participants' attendance of cervical cancer training and overall practice

Good practice was reported more from participants that attended cervical cancer training (84.6%) than participants who never attended any training (68.3%). P=0.240, this revealed that participants attendance of cervical cancer screening training was not significantly associated with overall practice.

Participants' work place and overall practice

Participants who work at the clinic were noted to have good practices (83.3%), hospitals 68.4%. Many (45.5%) participants from the health centre reported to have poor practices. This association was however not significant, p=0.187.

It was revealed that different demographic characteristics affected participants' level of practices differently. The results showed that most of the female participants reported to have good practices than male participants. This revealed that gender was significantly associated with practices (p=0.000). There was no significant association revealed between the rest of the participants' demographic characteristics and overall practices.

4.4.5.3 Association between overall knowledge and overall practices

The association between overall practices and overall knowledge was ran into cross tabulation analysis and chi squared test was done between participants' overall practices and participants' overall knowledge. These results are shown in the table below

Table 4.13 association between overall knowledge and overall practices

Participants' characteristics		**Overall practice**		**p value**
		Good practice	**Poor practice**	
Overall knowledge	Good level of knowledge	40(76.9%)	12(23.1%)	0.366
	Average level of knowledge	14(66.7%)	7(33.3%)	
	Poor level of knowledge	0(0%)	0(0%)	

As presented in the table above the results showed many (76.9%) Participants with good level of knowledge reported to good practices that participants with an average level of knowledge (66.7%). Very few (23.1%) of the participants with good level of knowledge reported to have poor practices compared to (33.3%) of participants with average knowledge. P-value=0.366, it was then concluded that participants' overall knowledge was not significantly associated with overall practices.

4.5 SUMMARY OF THE CHAPTER

This chapter presented an overview of data collection, response rate. The findings were presented according to the study objectives, under which there is demographic results, findings on the participants' knowledge, attitudes, and practices. The total scores and categories on KAP are also presented.

CHAPTER 5

DISCUSSIONS, CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

5.1 INTRODUCTION

The previous chapter presented the findings. This chapter holds discussions of the nurses' knowledge, attitudes, and practices, the conclusions derived from the study findings in line with objectives, the recommendations regarding the study conclusions and the limitations encountered in the study.

5.2. DISCUSSION OF THE STUDY FINDINGS

The study findings were discussed starting from demographic data, followed by knowledge on causes, prevention and risk factors of cervical cancer. Attitudes and practices of nurses were discussed and lastly, the association between the key variables. The discussion was done in line with the study objectives and controlled with existing literature.

5.2.1 Participants' demographic characteristics

Participants were asked about their demographic characteristics where they had to choose from the provided options. These were such as health facility, gender, age, marital status, rank, qualification, work place, years of experience and cervical cancer training. The demographic characteristics of the current study are collaborating with other studies. The majority of the nurses were females. The mean age was 30.05. More than half of the nurses were unmarried this is different from Goyal *et al* (2013) where majority (88%) of their nurses were married; most common age of marriage being 21 to 25 years. Majority of the current study nurses were registered nurses who are degree holders. Many of the nurses were from the hospitals (51.35%) followed by 32.43% from the clinics and 16.22% from the health centre. In a study done in Morocco by Najdi *et al* (2016), majority (95.5%) of the nurses were female and the mean age was 45.15. these could be explained by the fact that historically, nursing is a profession that is known to be a female dominant. Najdi *et a.l* (2016) conducted

their study in a training area, given this the majority (91.6%) of the nurses had gone under training of cervical cancer screening compared to only less than quarter of the nurses of the present study than have gone under cervical cancer training. Enrolled and registered nurses made up 51.9% and 48.1% respectively of the study sample. The mean duration of working experience was 21 years (S.D ±10.6). Nurses with more than 20 years of working experience made up the largest proportion (53.3%) (Urasa & Darj, 2011). Comparatively, the mean working experience was of this study was 4.84 with the standard deviation of 6.398.

5.2.2 Objective1: The knowledge of cervical cancer and cervical cancer services among nurses

More than half of the participants indicated their knowledge on human papilloma virus being the cause of cervical cancer, a few number of participants never knew of human papilloma virus as a cause of cervical cancer and the same number of participants disagreed. About the risk factors of cervical cancer participants reported a good understanding of the factors associated with cervical cancer. Majority were aware of multiple sexual partners as a risk factors followed by, early sexual debut. However, there was a gap in knowledge of some of the risk factors. Some participants did not know that poor hygiene can increase one's odds of getting cervical cancer while others totally disagreed to it. This finding are presented in table 4.2. The current study findings on the knowledge of causes and risk factors of cervical cancer is more compared to a study conducted on female nurses in Ethiopia at selected government hospitals in Addis Ababa Gebrie *et al* (2015). In a study conducted by Urasa & Darj (2011) the majority of the nurses in this study had inadequate knowledge of transmission of HPV, causes, risks, symptoms, treatment and prevention of cervical cancer. A number of 53.5% participants in the study of Gebrie et al (2015) knew that having multiple sexual partners is a risk factor followed by sexually transmitted infections (47.3%) and (45.4%) early onset of sexual activity. There is no appropriate explanation of the difference in results because

Gebrie *et al* (2015) used only female nurses, who are supposed to have high understanding of causes and risk factors because it affects them. However, it turned out to be the opposite.

A few number of 16.2% participants reported they did not know that cervical cancer is a leading cause of deaths in women worldwide. Very few (2.7%) disagree. however, a large number of participants (81.1%) were aware that cervical cancer is one of the leading causes of death in women worldwide. This study result regarding the above statement about cervical cancer showed a bit of difference from the other studies. In a study conducted by Gebrie *et al* (2015) on Knowledge, Preventive Practice and associated factors of female nurses' towards cervical cancer in the selected government Hospitals in Addis Ababa. Only 36.9% of study participants were aware that cervical cancer is the leading cause of cancer death in developing countries, 20.8% reported they did not know, while 35.8% agreed that it was the second leading cause preceded by breast cancer. Majority of these nurses (78.8%) knew that cervical ca ncer can be prevented with proper measures being taken, 14.2% reported that cervical cancer cannot be prevented and 6.9% stated that they did not know if cervical cancer can be prevented. Similarly, nurses of the current study (86.5%) knew that cervical cancer is preventable. Majority indicated awareness and health education as the method of prevention followed by periodic screening and vaccination. This strengthen the finding of Bhabani *et al*. (2017) which showed that, 92% nurses believed that cervical cancer is preventable and can be detected in early stages. This could be the true reflection of the nurses' knowledge on prevention of cervical cancer. Because the preventive measures are all surrounding them in the clinical setting

However, nurses in Gebrie et al study had areas where they reported respectable knowledge. Of these nurses, 91.5% knew that cervical cancer can be treated. More than 50% (83.8%) of the nurses agreed that cervical cancer can be cured if detected early. This is comparatively

high to nurses of the current study of which out of 74, only 31.1% were aware that cervical cancer is curable. On treatment, more than 50% of the participants in the current study agreed that radio therapy and chemotherapy are both used to treat cervical cancer. While participants from Gebrie *et al.* (2015), when asked about treatment choices, (37.7%) indicated surgery, 29.6% chemotherapy, 9.2% radiation therapy and 15.4% stated that treatment depends on the stage of the disease. The difference could be because nurses in the current study were limited to one option of treatment unlike the nurses from the other study.

Generally, the majority of the participants from this study reported to have a good level of knowledge, with a little number of participants that showed to have average level of knowledge. Remarkably, none of the study participants reported to have poor knowledge on cervical cancer. This study finding are similar to the findings of a study that was conducted in Nigeria to investigate the knowledge, attitude and practice of nurses towards cervical cancer screening, it revealed a good knowledge of cervical cancer among the participants (Awodele *et al*, 2011). A study by Bhabani *et al.* (2017) reported average knowledge in their study with limited understanding of cervical cancer screening techniques. In a different study by Najdi *et al.* (2016) found nurses to have adequate knowledge about cervical cancer. However, other studies in Uganda, Turkey and Tanzania didn't show the same findings. These studies reported that less than half of the nurses had adequate knowledge regarding cervical cancer. (Mutyaba *et al*, 2006; Urasa and Darj, 2011). The difference could be explained by the fact that Najdi *et al.* (2016) conducted their study in the training area where most nurses have already gone under training of cervical cancer with the purpose of implementing early detection programs.

5.2.3 Objective 2: Attitudes of nurses towards cervical cancer and the provision of cervical cancer services

The study reported that 59.5% of the study participants strongly agreed that cervical cancer is a public health problem followed by (31.1%) that agreed, 4.1% claimed that they did not that

cervical cancer is a public health problem, these same amount (4.1%) disagreed and very few (1.4%) strongly disagreed to this.

The findings of this study are not the same to the one of a study conducted in rural India. It reported that huge number of (184) participants understood cervical cancer as a public health problem (Shashank *et al*., 2013). The difference could be because participants in the current study were given different options to react with to the statement. However, closely one third of Shashank *et al* 2013 study participants perceived even the precancerous stage of cervix as an incurable and fatal illness. This was viewed as negative attitudes and it has been identified as one of the barriers to participant in early detection, screening and treatment, and it needs to be addressed as soon as possible.

More than half (75.7%) of the current study's participants took it that cervical cancer screening and treatment procedures can as well be carried out by nurses. This finding is totally different from the one of the study that was conducted by Shashank *et al.* (2013). In their study, Shashank *et al.* (2013) found out that the majority of their participants held a view that Pap test is doctor's procedure. These attitudes that screening is supposed to be done the doctor only, need to change. Only then the screening programmes will succeed.

All participants in this study reported to have positive attitudes towards cervical cancer and its services provision. These findings are in line with some other studies. Bhabani *et al.* (2017) and Awodele *et al*. (2011) found nurses in their study to have good attitudes towards cervical cancer. However, in a different study by Najdi *et al.* (2016) found that attitudes among nurses towards cervical cancer screening were negative. Nurses in their study argued that they had too many patients and very little time for screening. However, nurses in the current study argued that cervical cancer screening is not time consuming. The difference in finding could be explained by the fact that Najdi *et al. (2016)* conducted their study in both

rural and urban hospital. Hospitals in rural areas could be much populated and more burdens on the nurses, which in return may affect the attitudes of nurses.

5.2.4 Objective 3: Practices of nurses towards the provision of services on cervical cancer

Participants in this study were asked about cervical cancer screening practices and their own practices of cervical cancer screening. Despite the fact that the Ministry of health and social services has stipulated an ART guidelines where the indicated the proper screening intervals, majority of the nurses (68.5%) did not know the ideal screening interval for women and only less than 50% knew that HIV positive women should be screened annually for cervical cancer**.** There is no much difference in finding of this study and a study that was conducted in rural India by Shashank et al (2013) to determine awareness of cervical cancer screening, it reported that only 34% of the participants knew the correct timing of Pap test. On the period of Pap test most of the participants (79%) believed that Pap test should only be repeated in the presence of symptoms. The difference could be because nurses of the current study, who work at the inpatient departments, are not aware of this guideline. These showed poor practices and it needs be addressed because if they are not aware of these guidelines there is no way they are going to correctly inform the community on cervical cancer screening and such screening programs will not succeed.

On their own screening practices, 80.9% of the nurses indicated that they are willing to be screening for cervical cancer. A number of (87.6%) reported that they advise their relative to go for screening. Only 13.7% of the nurses were vaccinated. Asked why they did not get their pap test done, a number of 57.6% indicated that they were not much aware followed by 54.8% of the nurses that said they are afraid of pain and the outcomes, only 34.2% of the nurses did not feel they are at risk and the same number (34.2%) did not go for pap smear because of lack of symptoms. Other studies also revealed similar reasons. According to Urasa

and Darj (2011) study conducted in Tanzania, nurses in their study indicated that they never had Pap smear because: 54.7% did not know where to go, followed by 13.1% that did not see any reason for the test, 9.5% being afraid of the procedure and 7.3% being afraid of the bad results. In another study by Goyal *et al* (2013) majority of the nurses never undergone Pap smear and expressed reasons such as not thought about it and no time for it. These indicate low usage of cervical cancer screening services among nurses, which is similar to studies conducted on uptake of cervical screening by health workers (Awodele *et al.*, 2011). These findings could be a true reflection of the nurses' cervical cancer screening practices, and they are very unfavourable. Women are supposed to look up to nurses as their role models. Now, if nurses have reasons they cannot get Pap smear themselves, then getting women to go for screening will be a dream. These types of practices need to be addressed for a success of any screening program (Awodele *et al.*, 2011).

Overall, the majority of the nurses in this study were found to have good practice (71.2%) and a few number of nurses reported to have poor practice. These concluding findings on the nurses screening practices are relatively different from other studies. After finding out the common reasons nurses do not get their self-pap smear done, Shashank *et al.* (2013) concluded that nurses in their study had negative practices of cervical cancer. In a different study in which Najdi *et al*, (2016) compared cervical cancer screening practice of rural and urban nurses. They found out that those nurses in rural areas had poor practices. This could be because women in rural areas are limited to few health facilities and very limited number of nurses, which makes it difficult for the nurses.

5.2.5 Objective 4: association between the key variables

Knowledge was more among the female nurses, nurses with degrees and among the registered nurses. However, there was no significant association between any of the nurses' demographic characteristics and knowledge in the current study. This is correlating with a

study done by (Urasa & Darj, 2011) they found out that knowledge was more adequate in registered nurses than enrolled nurses. However, Urasa & Darj further reported that knowledge levels were significantly associated with age and also significantly differs between the cadres (ranks). In a study done in Nigeria by Awodele *et al.* (2011) they found a good association between level of education and knowledge.

On the association between demographic characteristics and overall practices, practices were more good in nurse with higher qualification (degree) than nurses with any other qualification (p=0.406) there was also difference in practices between nurses from different health facilities, of which all nurses from Okuryangava reported good practices than all other health facilities(p=0.118). Of all demographic characteristics, only gender was found to be significantly associated with practices (p=0.00). The majority of the female nurses reported to have good practices compared to male nurses. These results are similar to other authors' reports. However, Gebrie *et al.* (2015) found nurses' work experience, age, unit of work, marital status and self-history of cervical cancer to be significantly associated with practices. Similarly, Najdi *et al.* (2016) found age, working experience and work place as of urban or rural to have a good association with practices of nurses (p=0.04; p=0.05; p=0.02).

Further analysis was done to test the association between overall knowledge and overall practices. It came out that knowledge was not significantly associated with practices (p=0.366). This further strengthen the results of Gebrie et al, 2015 who reported that having knowledge of cervical cancer was not found to be significantly associated with practices. No study have yet found a significant association between knowledge and practices.

5.3 CONCLUSION

The study results revealed that the nurses had adequate level of knowledge of causes, prevention and risk factors of cervical cancer. However, they showed limited understanding of some of the risk factors and failed to indicate correct screening interval as stipulated in the

MOHSS ART guideline. All nurses from this study showed positive attitudes towards cervical cancer and the provision of cervical cancer services. Moreover, the majority of the nurses revealed to have good practices however, very limited act of giving out information about cervical cancer to women and usage of cervical screening services by the female nurses, commonly due to lack of awareness, fear of the outcomes, fear of pain and lastly lack of symptoms. The results revealed a significant association between gender and practices.

5.4 RECOMMENDATIONS

The following recommendations were made:

5.4.1 Recommendations for management

Nurses should make cervical cancer screening and dissemination of cervical cancer information as part of integration screening. As patients' advocates, nurses should be encouraged to use the screening services themselves so, that women would also take the cervical cancer screening services seriously. Guidelines should be distributed to all health facilities departments regardless of the areas of specialties.

5.4.2 Recommendations for education

Nurses should be provided with in-service trainings to improve and upgrade their knowledge on cervical cancer on a more regular basis. Education curriculum on cervical cancer should be revised and updated with recent literature to ensure that no details on cervical is left untaught to the nursing students.

5.4.3 Recommendations for research

Finally, further research should be conducted to establish the challenges faced by healthcare workers in providing services regarding cervical cancer. Research should also be conducted to determine the uptake of these services by women.

5.5 LIMITATIONS

This study was only conducted at some randomly selected health facilities and only some departments at the health facilities in Windhoek over a short period of time and with limited

funding. The study used a self-reporting instrument and there was no actual practice observed this could lead to self-desirability bias, which may affect the whole study findings. The researcher used self-rating to rate KAP of the nurses this in process may mess up the actual findings of the study. Given all those limitations, the study findings cannot be generalised.

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Annexure A: participants' questionnaire
QUESTIONNAIRE

Research questionnaire for the nurses

Tittle: **THE KNOWLEDGE, ATTITUDES AND PRACTICES OF NURSES REGARDING THE PROVISION OF SERVICES ON CERVICAL CANCER AT THE HEALTHCARE FACILITIES IN WINDHOEK DISTRICT, NAMIBIA**

Compiled by:	Ndahafa A Shiweda
Student No:	201304589
Course:	Master of Nursing Science
Institution:	University of Namibia

Supervisor: Dr Hans J Amukugo

Dear participants;

The aim of this questionnaire is to determine nurses' knowledge of cervical cancer, their attitudes and practices towards the provision of cervical cancer services at healthcare facilities in Windhoek district.

The objectives of this study are to:

- Assess the knowledge of cervical cancer and cervical cancer services among nurses at health facilities in Windhoek district
- Determine attitudes of nurses towards the provision of cervical cancer services at health facilities in Windhoek district
- Assess the practices of nurses towards the provision of services on cervical cancer at health facilities in Windhoek district
- Analyze the association between the key variables with regards to cervical cancer and the provision of its services.

Instructions

- Please do not write your name on the questionnaire to guarantee anonymity
- Answer all questions in all sections
- Please complete the questionnaire by marking an X in the applicable box
- Be open, honest and objective with your answers, as this will determine the results of this study and recommendations resulting from this study

Your participation in this study will be highly appreciated

Yours

NA Shiweda

SECTION A **QN CODE……...**

DEMOGRAPHIC DATA

Answer all the questions by placing an X in the appropriate box

1. Health facility

WCH	
IHK	
KHC	
Okuryangava clinic	
Hakahana clinic	
Wanaheda clinic	

2. Gender

Female	
Male	

3. Age

4. Marital status

Married	
Single	

5. Rank

Registered nurse	
Enrolled nurse	
Assistant nurse	

6. Qualification

Degree	
Diploma	
Certificate	

7. Health facility

Hospital	
Health Centre	

Clinic	

8. Period of employment (in years)

9. Have you ever attended a cervical cancer workshop or training?

Yes	
No	

SECTION B

Mark X in all the appropriate boxes

Knowledge on cervical cancer and cervical cancer services

Statement	**Agree**	**I don't know**	**Disagree**
1. The causes of cervical cancer include the following			
a) Human papilloma infections			
b) Bacterial infections			
c) Genetic predisposition			
d) Spicy foods			
2. The risk factors of cervical cancer include			
a) Smoking cigarette			
b) Contraceptive pills			
c) Alcohol			
d) Poor hygiene			
e) History of human papilloma virus			
f) Multiple sexual partners			
g) Condom use			
h) High parity			
i) Early sexual debut			
3. Cervical cancer is one of the leading causes of death in women worldwide			

4. Cervical cancer is preventable			
5. It is possible to detect precancerous cells			
6. If untreated cervical cancer is fatal			
7. Cervical cancer is not curable			
8. The purpose of pap smear is to detect precancerous changes			
9. There is a vaccine that can prevent cervical cancer			
10. Cervical cancer can usually be found at an early stage because of the obvious symptoms			
11. Treatments such a radiation therapy and chemotherapy are used to treat cervical cancer			
12. For cervical cancer, the progression of precancerous cells to cancer can take 10-20years			
13. Women should have pap smear at least every 3 years			
14. Cervical cancer is caused by a virus that is spread sexually			
15. During continued treatment patients should be advised to take adequate diet with essential nutrients			

SECTION C

Attitudes of nurses towards cervical cancer

Statement	**Strongly agree**	**agree**	**I don't know**	**Disagree**	**Strongly disagree**
In general, do you believe:					
1. Cervical cancer is a public health problem					
2. Secondary prevention of cervical cancer is also screening and treatment					
3. Precancerous lesions can be treated					
4. Cervical cytology is also known as Pap smear					
5. Pap test can detect precancerous lesions					
6. There is no need to have cervical					

cancer screening if it was not administered by the doctor					
7. Nurses can also carry out cervical cancer treatment procedures					
8. If someone is having a normal pap smear she does not need pap smear in the future					
9. Hysterectomy can be used to treat cervical cancer					
10. Cervical cancer patients should be advised should be advised to put in special effort to maintain a healthy life style					
11. Caring for cervical cancer patient is the same as caring for any other patients					
12. Cervical cancer screening is time consuming					
13. Supporting of cervical cancer patient is important to improve their life quality					
14. The only reason for most of the deaths due to cervical cancer is late diagnosis					
15. Cervical cancer patients need social, spiritual and emotional support as much as they need medications					

SECTION D

Practices of nurses towards cervical cancer screening

Statement	**Yes, always**	**Yes, sometimes**	**No, not at all**
1. Who should be screened for cervical cancer?			
a) Women older than 30years of age			
b) All married women			
c) women presenting with symptoms only			
d) all sexual active women			
2. What is the ideal screening interval?			
a) 1 year			
b) 2 years			
c) 3 years			

3. Have you ever diagnosed a patient with cervical cancer?				
4. Have you ever treated precancerous lesions in a patient				
5. Have you ever diagnosed precancerous lesion in a patient?				N/A
6. Are you willing to go for cervical cancer screening?				N/A
7. Are you vaccinated for cervical cancer?				
8. Have you ever nursed a cervical cancer patient?				
9. Do you advice your family members to undergo screening for cervical cancer				
10. What is the reason for not getting self-pap smear?				
a) Lack of awareness				
b) Not at risk				
c) Lack of symptoms				
d) Fear of pain				
e) Afraid of outcomes				
f) N/A				
11. Seeking of help from the cervical cancer group is beneficial for the patient				
12. Do you advise cervical cancer patient on safe sex practices?				
13. Regular follow-ups and treatments are required to treat the symptoms effectively				
14. Information about cervical cancer is given all women who visit the health facility				
15. What are the methods to prevent cervical cancer?	**Yes**		**No**	
a) Vaccination				
b) Periodic screening				
c) Awareness and health education				
d) hysterectomy				

Thank you for your participation

Annexure B: Permission letter from the university of Namibia centre for postgraduate studies

CENTRE FOR POSTGRADUATE STUDIES

University of Namibia, Private Bag 13301, Windhoek, Namibia
340 Mandume Ndemufayo Avenue, Pioneers Park
☎ +264 61 206 3275/4662; Fax +264 61 206 3290; URL: http://www.unam.edu.na

UNAM
UNIVERSITY OF NAMIBIA

RESEARCH PERMISSION LETTER

Centre for Postgraduate Studie
Office of the Director
2018 -10- 0 5
University of Nami
UNAM

Date: 30/09/2018

Student Name: Shiweda NA

Student number: 201304589

Programme: Master in Nursing Science

Approved research title: The knowledge, attitude and practices of nurses regarding the provision of services on cervical cancer in healthcare facilities Windhoek District, Namibia

TO WHOM IT MAY CONCERN

I hereby confirm that the above mentioned student is registered at the University of Namibia for the programme indicated. The proposed study met all the requirements as stipulated in the University guidelines and has been approved by the relevant committees.

The proposal adheres to ethical principles as per attached Ethical Clearance Certificate. Permission is hereby granted to carry out the research as described in the approved proposal.

Best Regards

05/10/18

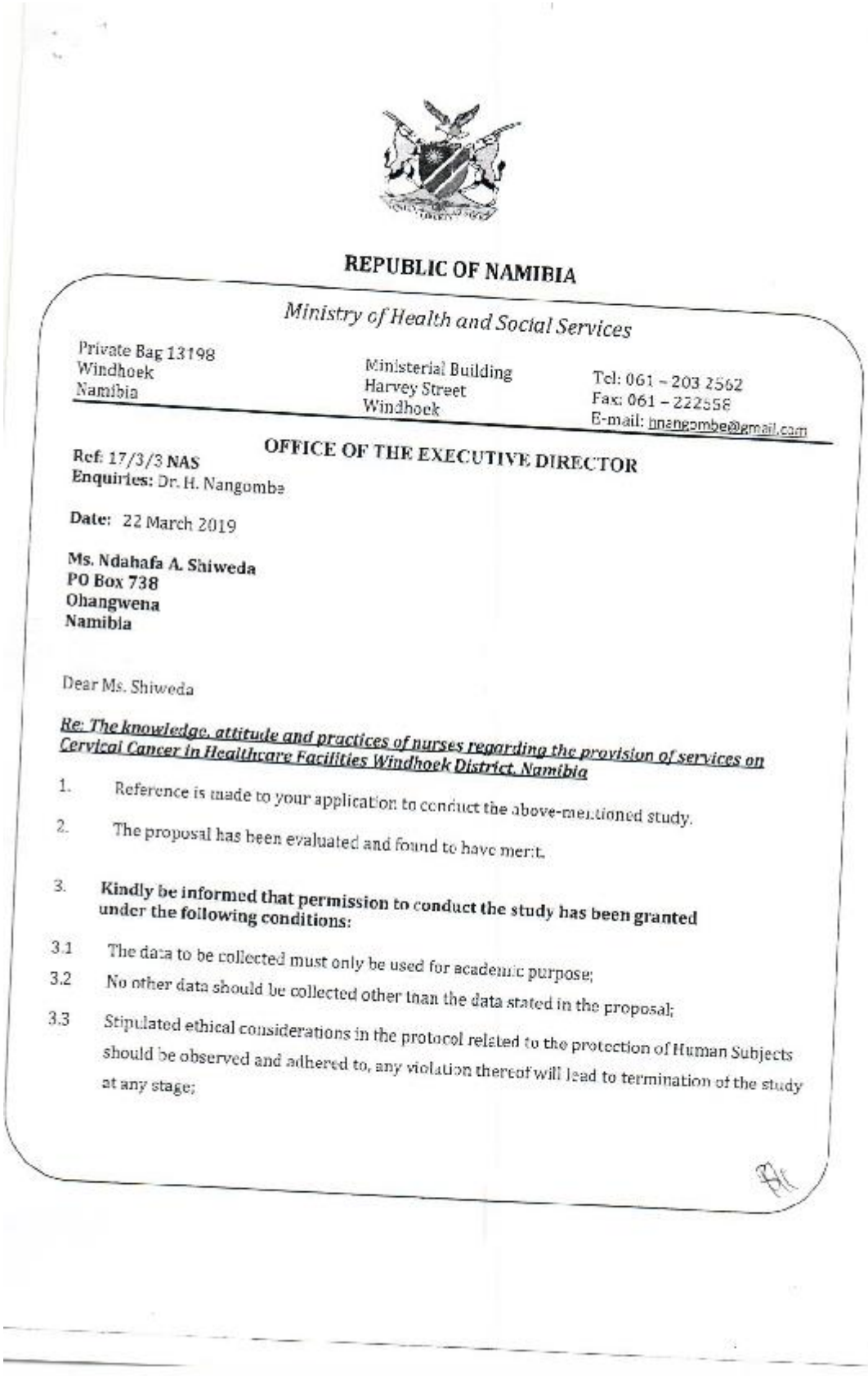
Prof Marius Hedimbi **Date**

Director: Centre for Postgraduate Studies

Tel: +264 61 2063275

E-mail:directorpgs@unam.na

Annexure C: Approval letter from the Ministry of Health and Social Services



REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 – 203 2562
Fax: 061 – 222558
E-mail: hnangombe@gmail.com

OFFICE OF THE EXECUTIVE DIRECTOR

Ref: 17/3/3 **NAS**
Enquiries: Dr. H. Nangombe

Date: 22 March 2019

Ms. Ndahafa A. Shiweda
PO Box 738
Ohangwena
Namibia

Dear Ms. Shiweda

Re: The knowledge, attitude and practices of nurses regarding the provision of services on Cervical Cancer in Healthcare Facilities Windhoek District, Namibia

1. Reference is made to your application to conduct the above-mentioned study.

2. The proposal has been evaluated and found to have merit.

3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**

3.1 The data to be collected must only be used for academic purpose;

3.2 No other data should be collected other than the data stated in the proposal;

3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;

3.4 A quarterly report to be submitted to the Ministry's Research Unit;

3.5 Preliminary findings to be submitted upon completion of the study;

3.6 Final report to be submitted upon completion of the study;

3.7 Separate permission should be sought from the Ministry for the publication of the findings.

4. All the cost implications that will result from this study will be the responsibility of the applicant and **not** of the MoHSS.

Yours sincerely,

MR. BEN NANGOMBE
EXECUTIVE DIRECTOR

PERMANENT SECRETARY
MINISTRY OF HEALTH & SOCIAL SERVICES

Annexure D: Permission letter from Intermediate Hospital Katutura chief medical officer

Republic of Namibia

Ministry of Health and Social Services

Private Bag 13215
WINDHOEK
Namibia

Intermediate Hospital Katutura
Independence Avenue
WINDHOEK

Telephone (061) 203 4004/5
Telefax (061) 222706

Enquiries: Dr. F. M. Shiweda

Date 06 May 2019

OFFICE OF THE CHIEF MEDICAL OFFICER

Ms. Ndahafa A. Shiweda
University of Namibia
Windhoek
Namibia

Dear Ms. Shiweda

RE: PERMISSION GRANTED TO DO AN ASSESSMENT ON THE KNOWLEDGE, ATTITUDES AND PRACTICES OF NURSES REGARDING THE PROVISION OF SERVICES ON CERVICAL CANCER IN HEALTHCARE FACILITIES

The above mentioned subject refers:

This office hereby grants you permission to do an assessment of the above mentioned subject at Katutura State Hospital, Khomas Region, MoHSS.

Please provide this office with a copy of your findings.

Thank you

Yours in health,

DR. F. M. SHIWEDA
CHIEF MEDICAL OFFICER

MINISTRY OF HEALTH
AND SOCIAL SERVICES
P/BAG 13215
WINDHOEK NAMIBIA
06 -05- 2019
OFFICE OF THE CHIEF MEDICAL OFFICER
HOSPITAL KATUTURA

Annexure E: Permission letter from Windhoek Central Hospital chief medical superintendent

9 - 0/0001

REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13215
Windhoek
Namibia

Harvey Street
Windhoek Central Hospital

Tel. No: (061) 203 3024
Fax No: (061) 222886

Enquiries: Mrs. S. Iipinge Ref. No. Date : 17 April 2019

OFFICE OF THE CHIEF MEDICAL SUPERINTENDENT

Ms. Ndahafa A.Shiweda
University of Namibia
Windhoek
0818786889

Dear Ms. Shiweda

SUBJECT: REQUEST FOR PERMISSION TO CONDUCT A STUDY ON THE KNOWLEDGE, ATTITUDE AND PRACTISES OF NURSES REGARDING THE PROVISION OF SERVICES ON CERVICAL CANCER IN HEALTHCARE FACILITIES WINDHOEK DISTRICT, NAMIBIA.

1. Reference is made to your application to conduct the above-mentioned study.

2. This letter serves to inform you that permission has been granted for you to conduct a research on the above mentioned subject as per your request.

3. Patients/Clients information should be kept confidential at all times.

4. Copy of report to be submitted at Chief Medical Superintendent and Customer care office, Windhoek Central Hospital upon completion of the study.

Yours sincerely

17-04-2019

DR.D.UIRAB
CHIEF MEDICAL SUPERINTENDENT

"Health for All"

Annexure F: Permission letter from office of the director

9 - 0/0001

REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13322
Windhoek
Namibia

Khomas Region Directorate
Florence Nightingale Street
Windhoek

Tel: 061 - 2035011
Fax: 061 - 235997

Enq: Mr. B. Isaacs

Ref: S4/9

Date: 6 June 2019

OFFICE OF THE DIRECTOR

STAFF MATTER: CONFIDENTIAL

MS. NDAHAFAA SHIWEDA
P.O. BOX 738
OHANGWEANA

Dear Ms. Shiweda

I have pleasure to inform you that as per Executive Director's approval, permission is granted for you to conduct a study on "The knowledge, attitude and practices of nurses regarding the provision of services on Cervical Cancer in Health Facilities in Windhoek District" from the 10 June 2019 until 9 September 2019.

The office wishes you success with your research.

Yours sincerely

MS. ELIZABETH MUREMI
DIRECTOR: KHOMAS REGION

MINISTRY OF HEALTH AND SOCIAL SERVICES
PRIVATE BAG WINDHOEK
2019 -06- 12
KHOMAS REGION
MAIN REGIONAL OFFICE

"Health for All"

Annexure G: participants' informed consent

TITLE: the knowledge, attitude and practices of nurses regarding the provision of services on cervical cancer in healthcare facilities Windhoek district, Namibia

Researcher: Ndahafa Annashitasia Shiweda

Dear participant

I am Ndahafa Annashitasia Shiweda registered with University of Namibia, doing master degree of nursing science. I wish to conduct a research project entitled: the knowledge, attitude and practices of nurses regarding the provision of services on cervical cancer in healthcare facilities Windhoek district, Namibia. The study will be conducted under the supervision and guidance of Dr. H. Amukugo and Ms V Nuuyoma School of Nursing and Public Health, University of Namibia.

The objectives of this study are to

- Determine the knowledge of cervical cancer and cervical cancer services among nurses at health facilities
- Evaluate attitudes of nurses towards the provision of cervical cancer services at health facilities
- Assess the practices of nurses towards the provision of services on cervical cancer at health facilities.
- Analyze the association between the key variables with regards to cervical cancer and the provision of its services.

Your participation will provide information that might enable decision makers to assist in this regard. Participation in this study will take approximately 10-15 minutes. The procedure includes responding to questions on demographic, knowledge attitude and practice. You will be expected to answer all the question, feel free to ask where you don't understand. You will receive the questionnaire and fill it on your own at the time of the study and hand it back to the researcher. The study data will be coded so they will not be linked to your name. Your identity will not be revealed during the study or when the study is going to be reported or published. The researcher and the supervisors are the only people that will have access to the information.

If you have any questions or concerns about the research, please feel free to contact Ms Ndahafa Annashitasia Shiweda cell 0818786889 or E-mail *staciashiweda@gmail.com*. The

supervisor Dr.H.Amukugoat061-2064617: E-mail: ***hamukugo@unam.na*** Faculty of Health Science, School of Nursing and Public Health, at the University of Namibia.

Your participation in this study is voluntary and you have the right to withdraw your consent at any time should you feel so and discontinue participation without penalty. You are not waiving any legal claims or rights because of your participation in this research study.

Should you agree to participate, please sign the consent provided.

I……

Agree to participate in this research project on my own will.

Signed at ……..

……. …….

Participant signature Date

Annexure H: Editor's note

JOTERSS ENGLISH LANGUAGE AND RESEARCH ACADEMY (EDITORS) (BED Sec (UNAM), BA Hons in English Studies (NUST), M.A. in English Studies (UNAM), Editing and Proof reading certificate (UCT), PHD in English Studies (UNAM) in progress. (T. Nepolo, Chief Editor). BBA Hons (SBS), Bachelor of Office Management and Technology (NUST), B.Com in Law and Cert in editing (UCT) (in progress) (T. Shikongo, editor) (L. Haipinge, editor)
P. O Box 487, Windhoek Tel: 0811446455 Email:tuyenilicious@gmail.com

4 November 2019

To: Whom it may concern

Editor's report

This is an attestation that I, Tuyenikelao Shikongo, from the language and research academy cited above, did the language editing of the research report of **Ndahafa A. Shiweda**; Student no: **201304589**. Her study is titled THE KNOWLEDGE, ATTITUDES AND PRACTICES OF NURSES REGARDING THE PROVISION OF SERVICES ON CERVICAL CANCER AT HEALTHCARE FACILITIES IN WINDHOEKL DISTRICT, NAMIBIA.

The following linguistic components and features were focused on: The rule of concord; which is the agreement between subjects and verbs. Sentence constructions; at times one finds that some sentences may need rephrasing to make more meaningful sense or may need to be shortened or completed for the same effect. Consistency in the use of words, tenses and forms of language. Another area that I focused on is the use of punctuations, especially the omissions and or the overuse of such essentials. I also suggested changes where words with same meaning were used but do not express the idea fully in the context they may be used.

I made use of track changes, so that the student, and if need be the supervisor, will be able to track the changes I suggested to accept or decline them as may be found appropriate.

For additional questions and clarity, do not hesitate to contact me on: **0811446455** or e-mail me on my email: tuyenilicious@gmail.com

Sincerely yours

Tuyenikelao Shikongo (Ms)

Language Editor