THE DEVELOPMENT OF AN EDUCATIONAL PROGRAMME TO ENHANCE THE UTILISATION OF CERVICAL CANCER SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN THE OTJOZONDJUPA REGION, NAMIBIA

A DISSERTATION SUBMITTED IN FULFILMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY IN NURSING SCIENCE

OF

THE UNIVERSITY OF NAMIBIA

BY

EPAFRAS ANYOLO

STUDENT NUMBER: 8709785

APRIL 2023

MAIN SUPERVISOR: PROF. HANS J. AMUKUGO

UNIVERSITY OF NAMIBIA

CO-SUPERVISOR: DR KRISTOFINA AMAKALI

UNIVERSITY OF NAMIBIA

ABSTRACT

The aim of the study was to develop an educational programme to enhance the utilisation of cervical cancer services among women of reproductive age in the Otjozondjupa region, Namibia. Cervical cancer is among the top ten most common causes of cancer-related deaths among women globally. The setting of this study is the Otjozondjupa region, which is one of the fourteen regions of Namibia.

The study was conducted in four phases as follows: Phase one entailed the situational analysis which described the knowledge, attitudes, and practices of the reproductive-aged women regarding the prevention, screening, and treatment of cervical cancer in the Otjozondjupa region. Phase two of the study entailed the development of a conceptual framework of the study. Phase three was concerned with the process of developing the educational programme, and Phase four focused on identifying the guidelines for the implementation and evaluation of the educational programme interventions. The guidelines were identified in terms of the objectives and activities based on the cyclic curriculum development model. The study applied a quantitative approach with descriptive and cross-sectional designs to address the aim and specific objectives of the study in Phase one.

A study population of 37066 women was divided into four strata representing four districts in the Otjozondjupa region and the sample was proportionally distributed to each stratum. Sample power calculation was done to determine the study sample size (381) using the Rao software programme. Multistage stratified random sampling was used in this study. Stage one: All four districts were included in the study and considered as strata. Stage two: All health centres and clinics were selected from each stratum for the study. Stage three: Proportionate stratified random sampling was used to select the clinics and respondents for the study at the facility level. Data were collected through a structured questionnaire with closed-ended questions using the 5 level Likert scale questions for the respondents to indicate their level of agreement to a statement as well as dichotomous questions. The quantitative data were analysed descriptively using Statistical Package for Social Science version 25. Chi-square statistical analysis was applied to establish the association between demographic data as the independent variable, and knowledge, attitude and practices as the dependent

variables. Pearson correlation was used to determine the correlations between the study variables. The findings of the study revealed that the majority of the respondents (86.7%) scored low on knowledge regarding prevention, screening, and treatment of CC; 90.8% scored neutral level of attitudes regarding screening, prevention and treatment of CC and 32% scored low in terms of the uptake of cervical cancer screening.

A conceptual framework was developed using the framework of the Practice-Oriented Theory by Dickoff et al., (1968). Subsequently, an educational programme to enhance the utilisation of cervical cancer services among women of reproductive age living in the Otjozondjupa region, Namibia, was developed. This was done according to the programme development process by Meyer and Van Niekerk (2008), the Cyclic curriculum development model of Nicholls and Nicholls (1972) as well as Kolb's four-stage model experiential learning theory (1984). Knowles's learning theories will be used to facilitate teaching and learning during the implementation of the educational programme to the reproductive aged women regarding screening, prevention, and treatment for cervical cancer in the Otjozondjupa region. Finally, guidelines to facilitate the implementation and evaluation of the educational programme activities to enhance the utilisation of cervical cancer screening services among women of reproductive age in Otjozondjupa region were identified.

Keywords: Knowledge, attitude, practices, screening, prevention, treatment, cervical cancer, reproductive and women

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ACS:	American Cancer Society
AIDS:	Acquired Immunodeficiency Syndrome
AORTIC:	African Organisation for Research and Training Centre
ASIR:	Age standardised incidence rates
ASMR:	Age standardised mortality rates
CAN:	Cancer Association of Namibia
CC:	Cervical Cancer
CIN:	Cervical Intraepithelial Neoplasia
DHS:	Demographic Health Survey
DNA:	Deoxyribonucleic acid
GLOBOCAN:	Global Cancer Incidence, Mortality and Prevalence
HCWs:	Health Care Workers
HIV:	Human Immunodeficiency Virus
HPV:	Human papillomavirus
IARC:	International Agency for Research on Cancer
ICC:	Invasive Cervical Cancer
ICO:	International Cancer Organisation
KAP:	Knowledge, attitude and practice
KM:	Kilometre
LBC:	Liquid base cytology

LEEP:	Loop electrosurgical excision procedure
LLETZ:	Large Loop Excision of the Transformation Zone
MoHSS:	Ministry of Health and Social Services
NGO:	Non-Governmental Organisation
NIP:	National Institute of Pathology
Pap smear Test:	Papanicolaou smear test
SPSS:	Statistical Package for Social Scientist
SSA:	Sub-Sahara Africa
STI:	Sexually Transmitted Infection
UREC:	University Research and Ethical Committee
USA:	United States of America
VIA:	Visual inspection with acetic acid
VILI:	Visual inspection with Lugol's Iodine
VMMC:	Voluntary Medical Male Circumcision
WCD:	World Cancer Declaration
WHO:	World Health Organisation

ACKNOWLEDGEMENTS

Firstly, I would like to thank the Almighty God for granting me the wisdom, strength, good health, and determination to be able to conduct this study. I am grateful and I would like to sincerely thank my supervisors, Prof. Hans J. Amukugo and Dr Kristofina Amakali for their invaluable support, patience, positive encouragement and sharing of knowledge during the study. Additionally, I would like to express my sincere gratitude to the following people and institutions:

- Professor Scholastic Ipinge for your continuous motivation, which empowered me to continue with this study.
- Mr Abel Karera for assisting with statistical data analysis of the study.
- Ms Ingenesia Tjiurute for assisting in the computer-related aspects when I was writing this dissertation.
- The University of Namibia for the financial support and also for issuing ethical clearance to conduct the study.
- The Ministry of Health and Social Services and the Otjozondjupa regional director for granting me permission to conduct the study.
- Women of reproductive age in the Otjozondjupa region for their co-operation and voluntary participation in this study.
- Ms Hilma Mwatuka Kapenambili for her continuous prayers and encouragement and for being there for me from the very beginning of my academic journey; and
- Finally, I thank my family for their support. My dear wife, Prisca Nangoma Anyolo and our children for their continuous support, encouragement, and motivation during my study.

DEDICATION

This study is dedicated to my late father, Toivo Akwenye Anyolo and my mother Ester Mbute Kapenambili, my wife Prisca Nangoma Anyolo and my daughters Niiwa, Nampa, Namadhila, Nangoma and to my son Epafras Jatileni Junior. Let this work be a source of empowerment and reflection on your contribution to the success of this study.

DECLARATION

I, Epafras Anyolo, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution. No part of this thesis/dissertation may be reproduced, stored in any retrieval system, or transmitted in any form, or by means (e.g., electronic, mechanical, photocopying, recording or otherwise) without the prior permission of the author, or The University of Namibia in that behalf.

I, Epafras Anyolo, grant The University of Namibia the right to reproduce this dissertation in whole or in part, in any manner or format, which The University of Namibia may deem fit.

_____ _____ _____

Name of student Signature Date

CHAPTER ONE

ORIENTATION AND BACKGROUND TO THE STUDY

1.1 ORIENTATION TO THE STUDY

Cervical cancer is among the most common leading causes of gynaecologic cancer-related deaths among adult women in low to middle income countries (World Health Organization, (WHO, 2020). However, since the introduction of pap smear in 1941, both the incidences and mortality of cervical cancer have markedly decreased in most developed countries, mainly due to effective screening, prevention, and treatment programmes. Thus, there is overwhelming evidence that cervical cancer is currently preventable through screening, prevention, and treatment of premalignant lesions before they develop into cancer disease (WHO, 2018; Ferlay et al., 2016).

Unfortunately, the successes of organised screening, prevention and treatment have not been replicated in developing countries including those found in the Sub-Saharan African (SSA) region which is reported to have a higher global-cervical cancer burden (WHO, 2018). The existence of limited resources results in developing countries affording an average screening, prevention and treatment for cervical cancer (Pap smear) coverage of 5% - 19% (Kei et al., 2016; Sankaranarayanan, 2014) and Namibia is no exception to this trend. As such, Namibia has adopted and implemented the WHO recommendations on the provision of screening, prevention, and treatment services for cervical cancer. However, the uptake of screening, prevention, and treatment services for cervical cancer in Namibia is reported to be low (WHO, 2014).

Screening for early detection and treatment for the prevention of cervical cancer for better health outcomes is related to the women's knowledge, attitude and practices

regarding cervical screening, prevention, and treatment programme (WHO, 2019; Ndejjo et al., 2016). The efforts to prevent and control cervical cancer are everyone's responsibility, with the health care professionals being expected to play an essential role in the initiation of screening, prevention and treatment of cervical cancer and the promotion of such services among women of reproductive age. Women in developed countries have a good level of knowledge on and positive attributes towards screening, prevention, and treatment of cervical cancer in comparison to the level of knowledge, attitudes and practices among women of reproductive age in developing countries (Ndejjo et al., 2016; WHO, 2018; Makurirofa et al., 2019). Therefore, health care professionals have an important role to play in educating and influencing women's knowledge, attitudes, and practices regarding the screening, prevention and treatment for cervical cancer.

Cultural diversity and socio-economic aspects influence women's knowledge, attitudes and practice towards health issues including the screening, prevention and treatment for cervical cancer (Lim & Ojo, 2017). Women from the Otjozondjupa region in Namibia are characterised by diverse socio-economic qualities that are based on their level of education and cultural practices, which may influence their knowledge, attitude, and practices towards screening for the prevention and treatment of cervical cancer (Ministry of Health and Social Services (MoHSS), 2016). Therefore, the purpose of this study was to assess the knowledge, attitudes, and practices by reproductive aged women towards the screening, prevention, and treatment of cervical cancer in the Otjozondjupa region of Namibia. Subsequently, and based on the findings, an educational programme to facilitate knowledge, a positive attitude, and

practices of reproductive aged women on the screening, prevention, and treatment of cervical cancer in Otjozondjupa region was developed for implementation.

1.2 BACKGROUND TO THE RESEARCH PROBLEM STATEMENT

Worldwide, cervical cancer is the fourth most frequent type of cancer in women, with an estimated 604 000 new cases in 2020. Of the estimated 342,000 deaths from cervical cancer in 2020, about 90% of these occur in low- and middle-income countries (WHO, 2020; Sun et al., 2020). The WHO (2018) projects that without urgent attention, cervical cancer deaths are expected to rise globally by almost 25% in the next 10 years. Cervical screening, prevention and treatment coverage is relatively high in developed countries and the majority of women in the developed world have received at least two cervical screening sessions during their lifetime, thus increasing the chances of early detection of pre-cancerous lesions and enabling the prevention and curability of the disease (WHO, 2018).

There are 34.8 new incidences of cervical cancer diagnosed per 100,000 women annually in sub-Saharan Africa, and 22.5 per 100,000 women die from the disease. By comparison, there are 6.6 new cases of cervical cancer per 100,000 women in North America, and 2.5 per 100,000 women die from it (WHO, 2020). There are more than 250 million women who are at risk of developing invasive cervical cancer (ICC) in sub-Sahara Africa (SSA). Of the global statistics, the highest incidence rates of cervical cancer occur in eastern, western, and southern Africa, within age-standardised rates of 34.5, 33.7 and 26.8 cases per 100, 000 populations respectively. This high burden of disease in these regions of Africa is reported to be a result of women's limited knowledge and negative attitudes, such as fears about cervical cancer screening

and lack of access to screening, prevention, and treatment services (Gatumo et al., 2018).

Available literature indicates that the majority of women globally and in SSA do not attend screening services (Pap smear) for the prevention of cervical cancer (Touch & Oh, 2018; Mabelele et al., 2018; Makurirofa et al., 2018; WHO 2018). In addition, perceived low susceptibility, fear of outcomes and long distance to health care facilities, unaffordability of transport costs and long waiting time at facilities are also associated with the low uptake of cervical cancer screening services by women in Sub-Sahara Africa (Ndejjo et al., 2016). Of concern is that even the majority of women from higher social and educational background in countries such as in South-Africa, are hesitant to undergo screening services for cervical cancer (Ramathuba et al., 2016).

Several studies have shown poor knowledge and low screening, prevention, and treatment coverage of cervical cancer among women across Africa (Nwobodo & Ba-Break, 2015). Existing literature indicates that the majority of women are unaware of the risk factors, and they lack knowledge on the symptoms of cervical cancer (Kei et al., 2016; Mabelele at al., 2018). The literature also indicates that women seem to be obtaining inadequate information about cervical cancer from health practitioners. Less reliable sources such as friends and the media were often cited by women as sources of information about cervical cancer (Kei et al., 2016).

The literature further states that most patients with advanced cervical cancer had never heard of cervical cancer screening before, and as a result, they misinterpreted the symptoms of cervical cancer as simply signs of irregular menses, the resumption of menses and lower genital infection (Kei et al., 2016). The implication here is that

women should possess knowledge on cervical cancer with regards to risk factors, prevention, symptoms, and treatment for positive health outcomes.

The data on screening for cervical cancer in the Otjozondjupa region indicates that although the cervical cancer screening programme is available in all districts of the region, there is low uptake for screening, prevention and treatment services for cervical cancer (Ministry of Health and Social Services (MoHSS, 2016). The knowledge of the disease is important for the creation of awareness of the disease, its risk factors and preventive measures, and this therefore allows positive attitudes towards screening, prevention, and treatment services for early detection and treatment (Kei et al., 2016; Makurirofa et al., 2019).

The literature provides evidence that the knowledge about prevention, screening and treatment of cervical cancer alone may not necessarily result in positive health seeking behaviour. Intermediary factors such as attitudes play an important role in formulating actions of health seeking behavior (Kei et al., 2016; Jassim et al., 2018). This indicates that, while the knowledge about cervical cancer and its preventive measures is available, a severely limited number of women undergo a Pap smear test in their lifetime. In this regard, the Health Belief Model postulates that one would engage in health seeking behaviour if he/she perceives the benefits that may be accrued from the recommended behaviour such as attending cervical screening services (Glanz et al., 2015). Attitude is therefore a determinant factor of women's health seeking behaviours towards cervical cancer.

The holding of a negative attitude towards cervical cancer screening services by women in SSA accounts for the existing low uptake of screening (Lim & Ojo, 2017).

Ndejjo et al. (2016) observe that most of those women who had screening for cervical cancer did so because they had been requested by healthcare providers. The factors that are associated with women's negative attitudes towards screening for cervical cancer include women's lack of knowledge and motivation, lack of financial resources, lack of perceived susceptibility, fear of outcomes, and cultural perceptions towards health care providers who may perform the Pap smear test in particular regarding female versus male health care provider (Chaka et al., 2018; Lim & Ojo, 2017). However, in Namibia, screening for cervical cancer (Pap smear) is offered free of charge at all government health facilities and financial implications may not be a determinant factor in this regard.

1.2.1 Situation of cervical cancer in Namibia

Similar to the women living in the rest of Africa, women in Namibia are faced with various risk factors for cervical cancer. These include infection with certain types of Human Papilloma Virus (HPV), early initiation of sexual intercourse, multiple pregnancies, a history of multiple sexual partners, sexual transmitted infections including HIV, long term usage of oral contraception (more than 5 years) and cigarette smoking (Cancer Association of Namibia (CAN), 2017).

WHO (2014; 2018) advocates that countries in the low-resource settings should incorporate visual inspection with acetic acid (VIA) cryotherapy into the exciting cervical cancer prevention services within reproductive health services. VIA is an attractive alternative to cytology-based screening in low-resource settings and the results are available immediately at the point of care for early cervical lesions. The general consensus is that VIA is just as useful as the Pap smear test. In 2018, Namibia's

MoHSS implemented WHO (2014; 2018) recommendations, that countries, Namibia included, should implement other feasible approaches such as visual inspection with acetic acid (VIA) for cervical screening. The MoHSS, with the assistance of I-TECH Namibia, has piloted provisions for cervical screening through the VIA "screen-and-treat approach" programme in the Khomas region of the Windhoek district from October 2018 and introduced an ablative treatment with cryotherapy or thermocoagulation to all women diagnosed with positive pre-cancerous lesions. The programme has since been rolled out to other 10 regions (district hospitals, health centres and clinics) including Otjozondjupa region where the study is being conducted (MoHSS, 2019). Cervical screening using VIA ("screen and treat") is the most appropriate method for women in Namibia, Otjozondjupa region in particular, as it reduces the waiting period for the results and avoiding repeated visits before the action is taken in the case of positive results. In case of the positive VIA test results, cryotherapy treatment is offered immediately. The purpose of treating pre-cancerous lesions is to destroy the affected cells before they turn into carcinoma, while treatment for invasive cancer includes surgery for the excision of the cancerous tissues, radiation of cancer cells and chemotherapy or systematic anticancer therapies (WHO, 2020). However, the treatment of cervical cancer depends on the size of the detected lesion (tumour) and how far it has spread. Also, a woman's desire to have children in the future also plays an important role in deciding the type of treatment (WHO, 2020).

Patients diagnosed with invasive cervical cancer are referred to the regional and national referral hospitals for treatment. Women from the age of 20 years to 49 years of age are encouraged to go for cervical screening to access early treatment for prevention should any test positive for pre-cancerous lesions (Namibia Cervical

Cancer Prevention Guidelines, 2018). The Otjozondjupa health directorate is composed of four district hospitals, three health centres and 16 primary health care clinics, all of which offer cervical screening services for the early detection and treatment of cervical cancer (MoHSS, 2018).

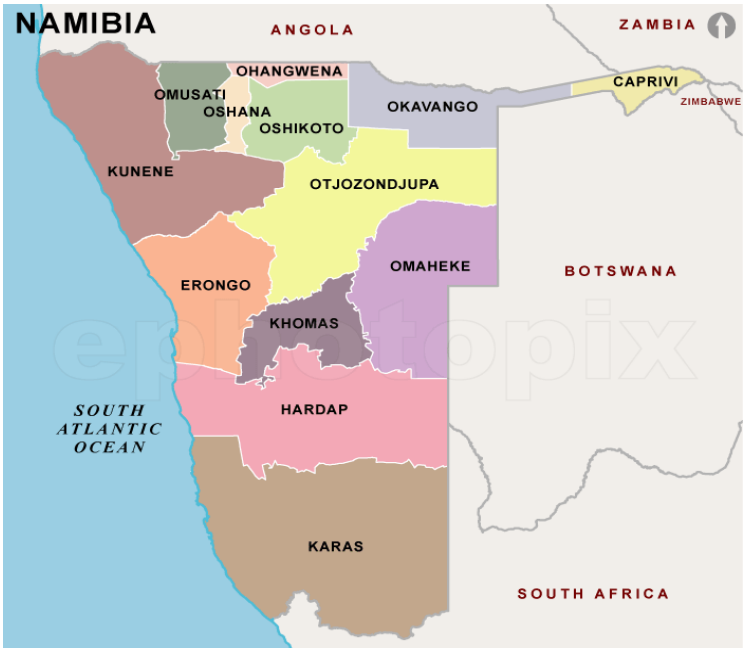
Cervical cancer is highly preventable through vaccination against the types of human papilloma virus infection (HPV) most likely to cause cervical cancer, thus the screening of all women, and treatment for precancerous lesions. Women living with HIV (WLHIV) are at a heightened risk of developing cervical cancer, with data showing up to a six-fold increase in incidence compared to HIV-negative women. Studies show both a higher prevalence and longer clearance time of HPV among WLHIV (WHO, 2020). Thus, in countries such as Namibia which have a high HIV prevalence rate and where the HPV vaccine is not yet widely available, screening and treatment of precancerous cells are essential for preventing cervical cancer.

In addition, the Namibian health statistics show that cervical cancer accounted for 1 118 diagnoses (19.4% of all cancers in women), during the period of 2010-2014, about 132 new incidences are diagnosed annually and the incidence of cervical cancer is at 11.1 per 100 000 women (Central Cancer Registry, Namibia, 2017). Current estimates indicate that cervical cancer is the second leading cause of cancer, with 375 new cases (19.7%) after breast cancer (558 (29.3%), among women in Namibia, and the third leading cause of death among women aged 15 to 44 years (Bruni et al., 2017; GLOBACAN, 2020). The number of women dying from cervical cancer in Namibia is on the rise, with the disease claiming 135 lives in 2018 (The Namibian News Paper, 16 April 2022). The majority of these deaths could have been prevented if appropriate

screening, prevention and treatment had occurred in a timely manner in order to address the risk factors (Namibia Cervical Cancer Prevention Guidelines, 2018).

1.2.2 Context of the study

Namibia is divided into 14 regions for service delivery. These regions are: Otjozondjupa, Ohangwena, Omaheke, Omusati, Oshana, Oshikoto, Kunene, Kavango East, Kavango West, Karas, Khomas, Hardap, Erongo, and Zambezi region. The regions are as illustrated in Figure 1.1 below.



1. Figure 0.1: Regions of Namibia

Namibia has a population of 813 157 women aged 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 236 women are diagnosed with cervical cancer (National Cervical Cancer Prevention Guidelines, 2018).

The current study setting was the Otjozondjupa region, where the study was conducted, and this is situated about 240 kilometres north of Windhoek, the capital city of Namibia. It had a population of 143 903 in 2011 (there was no census that was done in 2021) and at a growth rate of 0.6% per annum, the region's population is projected to be 148 263 in 2016 (National Census, 2011). The region consists of four districts, namely Otjiwarongo, Grootfontein, Okakarara and Okahandja as illustrated in Table 1.1. There are four district hospitals, two health centres and 16 clinics, which are providing screening, prevention, and treatment services for cervical cancer.

1. Table 0.1 Healthcare facilities in the Otjozondjupa region

District	District hospital	Health Centres	Clinics
Grootfontein	1	2	5
Okahandja	1	0	2
Okakarara	1	0	5
Otjiwarongo	1	1	3
Total	4	3	15

Source: MoHSS, 2015/16 Annual report

A total of 4 271 women in the Otjozondjupa region received screening services for the prevention and treatment for cervical cancer between 2010 and 2014, with the highest number of 1 283 women having been screened in 2011 and the lowest of 108 was screened in 2014 (MoHSS, 2014). Although cervical cancer screening, prevention and treatment programmes are available in all the districts of the region, the statistics above

indicate that there is a low uptake of screening services for the prevention and treatment of cervical cancer in the region.

Studies report that negative attitudes such as the fear of pain of the procedure, embarrassment, perceiving the self as not at risk for cervical cancer, shyness over being screened by male healthcare providers and being afraid of the test results were observed among reproductive aged women. These factors are believed to be associated with the low uptake of screening services for the prevention and treatment of cervical cancer among women in SSA, Zimbabwe, Bahrain, Botswana and Kenya, which may also apply to women in Namibia (Makurirofa et al., 2019; Jassim et al., 2018; Lim & Ojo, 2017; Sudenga et al., 2016; Ramathuba et al., 2016).

The national data on the uptake of screening, prevention, and treatment for cervical cancer in Namibia indicates that a mere 4 271 women in Otjozondjupa region have received screening services for the prevention and treatment of cervical cancer between 2010 and 2014 (CAN, 2014; MoHSS, 2014). The knowledge, attitudes, and practice of reproductive aged women in Namibia regarding the screening, prevention, and treatment of cervical cancer is not known, hence this study sought to assess the knowledge, attitudes, and practices of the reproductive aged women regarding screening, prevention, and treatment of cervical cancer in the Otjozondjupa region of Namibia.

1.3 STATEMENT OF THE PROBLEM

The available literature indicates that women do not access cervical screening due to complex barriers such as the low level of knowledge about the availability of cervical screening services, fear of the screening procedure, fear of a positive result, financial

insecurity, a reservation for potential exposure to a male health care provider and the restriction of cervical screening services at the district and national referral health facilities (Calvahlo, 2016; Msyamboza et al., 2016; Pittalis et al., 2020).

Moreover, the Namibia Demographic Health Survey (DHS) (2013) reports that nationally, only 23.6% of women have been screened for cervical cancer, presumably owing to a reported low knowledge, attitudes and practices regarding screening, prevention, and treatment for cervical cancer among reproductive aged women (CAN, 2014; MoHSS, 2014). Furthermore, the annual number of cervical cancer cases has been estimated at 2, 200 while deaths from cervical cancer have been estimated at 1,238 (WHO, 2020).

The knowledge, attitudes and practices regarding the screening, prevention, and treatment of cervical cancer in the Otjozondjupa region is insignificant among women of reproductive age (DHS, 2013), as only 108 (0.29%) of this population had cervical cancer screening in 2014 (MoHSS, 2014). However, there was no record of cases for screening, prevention, and treatment for cervical cancer in the Tsumkwe constituency of Otjozondjupa region for the period 2015-2016 (MoHSS, 2015/2016). The above-noted data indicates that the majority of women of reproductive age in the Otjozondjupa region do not attend screening, prevention, and treatment services for cervical cancer.

The MoHSS has introduced visual inspection with acetic acid (VIA) as the method of choice to address the knowledge, attitude, and practices of women of reproductive age regarding the screening, prevention, and treatment of cervical cancer in the country (MoHSS, 2018). However, the knowledge, attitudes, and practices among women of

reproductive age in Otjozondjupa region regarding the screening, prevention, and treatment of cervical cancer is not known. The knowledge, attitude, and practices, regarding screening, prevention and treatment of cervical cancer among reproductive aged women in the Otjozondjupa region is insignificant (DHS, 2013). The information indicates that the knowledge, attitudes, and practices of reproductive aged women in Otjozondjupa region is not known. There is a low uptake of cervical cancer screening among women of reproductive age in Otjozondjupa region. As such, there is a need for an educational programme to enhance cervical cancer screening utilisation among women of reproductive age living in the Otjozondjupa region, and thus an increase in cervical cancer screening uptake for prevention through the treatment of pre-cancerous lesions. When more women are cervical screened, it would reduce morbidity and mortality related to cervical cancer. It is against this background that the present researcher aimed to develop an educational programme to enhance cervical cancer screening utilisation among women of reproductive age and to identify the guidelines to facilitate the implementation of an education programme in Otjozondjupa region, Namibia.

1.4 AIM OF THE STUDY

The aim of the study was to develop an educational programme to enhance the utilisation of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia.

1.5 RESEARCH QUESTIONS:

The following are the research questions:

- What is the knowledge, attitudes, and practices of reproductive aged women regarding the screening, prevention, and treatment of cervical cancer in the Otjozondjupa region, Namibia?

- What is the appropriate conceptual framework for this study?
- What is the nature of the educational programme that is required to enhance the utilisation of cervical screening among women of reproductive age living in Otjozondjupa region?
- What are the appropriate guidelines that are required for the implementation and evaluation of an educational programme to enhance the utilisation of cervical screening among women of reproductive age living in Otjozondjupa region?

1.6 RESEARCH OBJECTIVES

The objectives of this study were to:

- Describe the situational analysis on the knowledge, attitude, and practices as the basis for the development of the education programme to enhance cervical cancer screening utilisation among women of reproductive age living in Otjozondjupa region, Namibia [Phase one].
- Develop a conceptual framework for the development of an educational programme on the knowledge, attitudes and practices regarding the screening, prevention, and treatment of cervical cancer among reproductive aged women [Phase two].

- Develop an educational programme to enhance cervical cancer screening utilisation among women of reproductive age living in the Otjozondjupa region, Namibia [Phase three].

- Identify the guidelines for the implementation and evaluation of the educational programme on cervical cancer for reproductive aged women to improve the knowledge, attitude, and practices regarding the prevention, screening, and treatment of cervical cancer [Phase four].

1.7 SIGNIFICANCE OF THE STUDY

Firstly, the study sought to contribute to an understanding of cervical cancer by the reproductive aged women regarding their knowledge, attitudes, and practices in respect of prevention, screening, and treatment. Secondly, the developed educational programme from the study results is aimed at facilitating the successful improved knowledge of reproductive aged women, and to change their attitudes and practices regarding the prevention, screening, and treatment of cervical cancer, thus an increased uptake of cervical screening among reproductive aged women. Thirdly, the developed educational programme is a unique contribution to the field of nursing and to the reproductive health programme in the MoHSS in Namibia.

1.8 THEORIES AND MODELS THAT GUIDED THE STUDY

Theoretical assumptions are important in any study as they guide the process of argumentation, evidence generation, and conclusions (Mulenga, 2018). Theories are described as systematic ways of looking at the world and describing the events (Chinn & Kramer, 2018). Models consist of the main concepts in a research framework (Grove et al., 2015). This study was guided by five fundamental theories and models, and they are described as follows, namely, programme development of Meyer and Van Niekerk (2008), Dickoff, James and Wiedenbach`s practice orientated theory (1968), Cyclic curriculum development model of Nicholls and Nicholls (1972), Kolb' s four-stage

model experiential learning theory (1984) and Knowles' model on andragogy (1984). The applications of the theories and models in the study are described in the next sections

1.8.1 Programme development of Meyer and Van Niekerk

The five phases of programme development by Meyer and Van Niekerk (2008) were modified to support the programme development and these formed the foundation for the objectives in this study. The modification of the five phases by Meyer and Van Niekerk (2008) is illustrated in Table 1.2 below.

2. Table 0.2 Modification of the five phases of Meyer and Van Niekerk (2008)

Meyer and Van Niekerk's phases	Modified phases
Phase 1: Preliminary phase	Phase 1: Situational analysis
Phase 2 & 3: Exploratory phase (inductive) and design phase (inductive and deductive)	Phase 2: Conceptual framework
Phase 4: Development phase (inductive and deductive)	Phase 3: Development of the training programme
Phase 5: Validate/Evaluate the programme	Phase 4: Development of the guidelines for the implementation and evaluation of the programme

The study adapted Meyer and Van Niekerk's (2008) modified four phases, namely, situational analysis, conceptual framework, development of the training programme and development of the guidelines for the implementation and evaluation of the programme. A situational analysis [Phase One] was conducted as the basis for the development of the educational programme for the prevention, screening, and

treatment of cervical cancer among women of reproductive age in Otjozondjupa region. The outcome of the situational analysis determined the knowledge, attitudes, and practices of women of reproductive age regarding the screening, prevention and practices of cervical cancer in the Otjozondjupa region. Phase Two informed the development of the conceptual framework of the study, whereas Phase Three informed the development of the training programme, while Phase Four informed the development of the guidelines for the implementation and evaluation of the programme (Chapter Three)

1.8.2 Dickoff, James and Wiedenbach`s Practice-Oriented Theory

Dickoff, James and Wiedenbach`s (1968) Practice-Oriented Theory specify the activities that are essential in the conceptualisation process. This theory, which was used as a practical guideline, provided a conceptual framework during research and the educational programme development process in Chapters Six and Seven of this study. The theory prescribes the activities that are required to reach pre-determined goals and to envisage the outcomes of the interventions. According to Dickoff, James and Wiedenbach (1968), a survey list includes six components which describe the process that is followed to develop an educational programme that aims at the attainment of the study goals. The components are the agent (who or what performs an activity), the recipient (who receives an activity), the context where an activity is performed, the procedures or actions that guide an activity, the energy source of such an activity and the terminus (programme outcome). In this study, the agent is the researcher (health practitioner) who performed the activity, and the recipients were the women of reproductive age who received the activities of an educational programme for their empowerment regarding screening for the prevention and treatment of cervical cancer. The context was Otjozondjupa region where the study took place, the energy source was derived from the situational analysis (challenges/dynamics), the procedure was an educational programme to improve the knowledge, attitudes, and practices of reproductive aged women on cervical cancer, and the terminus was the intended programme outcome. A detailed description of the conceptual framework is presented in Chapter Three of this study.

1.8.3 Nicholls and Nicholls's cyclic curriculum development model

Curriculum development is described as the step-by-step process which is utilised to formulate positive improvements in the courses or trainings offered by a school, college, university, or community based educational programme. The process involves planning, implementing, and evaluating learning opportunities intended to produce desired changes in learners (Stuut, 2018).

The model of Nicholls and Nicholls (1978) was adopted to guide the development of the education programme. The Nicholls and Nicholls (1978) curriculum development model specifies five curriculum components, and these are: the situational analysis, selection of objectives, selection and organisation of content, selection and organisation of methods and evaluation of learning. Based on the model of Nicholls and Nicholls (1978), a situational analysis was conducted in Phase one of this study to determine the energy source of the programme (dynamics) that informed the content of the educational programme. The programme objectives were formulated based on the dynamics identified during the situational analysis. The teaching methods to facilitate learning during programme implementation were selected and they are as follows: lecture presentation using power point presentation, learning aid (images and pictures), small group discussions, role-play, brainstorming, feedback in plenary and summarising important points/facts at the end of each session.

After implementation, the programme is evaluated to determine whether further assistance, such as repeating a session to ensure that each participant grasped the concept under discussion for better programme outcomes, is required. In the current study, respondents were evaluated during classroom sessions, where they provided a

pre-assessment test, daily evaluation of sessions presented and a post assessment test at the end of the educational programme. More details regarding the applications of the cyclical curriculum development model of Nicholls and Nicholls (1978) are discussed in Chapter Seven of this study.

1.7.4 Kolb's Experiential Learning Theory

Kolb (1984) and Zhang and Sternberg (2000) define learning as a process of creating knowledge through the transformation of experience, which develops through a combination of grasping and transforming experience. Kolb's theory is based on a four-stage cycle of learning that is elaborated in Chapter Seven. The four stages of the cycle consist of:

- Concrete experience: doing something that would result in acquiring experience - this is learning from discussions and feedback from other participants. In this study, participants would gain new knowledge, positive attitudes and practices on cervical cancer screening, prevention, and treatment from other participants.
- Reflective observation stage of learning: reviewing and reflecting on experience, thus reflecting on any inconsistencies between experience and understanding (Kolb & Boyatzis, 1999 as cited in Mulenga, 2018). This stage involves the observation of other participants or developing an observation from own experience that would be made possible through brainstorming or reflective exercises like role plays. In this study, the participants would reflect on their previous knowledge and try to understand the difference between previous knowledge and the implications it has on their health and the newly acquired knowledge that might change their belief about being at risk of cervical cancer.

- Abstract conceptualisation: concluding or learning from experience (Macleod, 2017). This is about learning from directed learning situations that emphasise theory, such as learning from lecture presentations with participants making their own conclusions. In this study, participants would try to think and reflect on the new knowledge/ideas and weigh the benefits of following the recommended behaviour that reduces the risk of a particular illness, in this case cervical cancer, thus bringing about positive attributes of screening practices.
- Active experimentation: planning and trying out what was learnt (Macleod, 2017) – this is about active learning through experimentation, such as learners engaging in small group discussions, learning from case studies, simulation sessions and homework activities. Applications of Kolb's four stages of experiential learning are discussed in detail in Chapter Seven of this study.

1.8.5 Knowles's Model of Andragogy

Knowles's model of Andragogy (1984) states that Andragogy means that instruction for adult learners needs to focus more on the process (strategies) and less on the content being taught. Strategies such as case studies, role plays, simulations and self-evaluation are most useful. Knowles's theory was adopted to develop the learning and teaching methods in line with the needs of women of reproductive health regarding knowledge, attitude and practices on screening, prevention, and treatment of cervical cancer. The model has five components, and these are: 1) recognising the need for learning, 2) self-directed, 3) knowledge acquired generally through social interaction, 4) learn things which should assist on how to cope effectively in life situations, and 5) learn what the perceived would help them to perform the learnt tasks in their life situations. The first assumption is important because adults would like to know why

they have to learn something new before they undertake it. Self-directed because they are also responsible for their own actions, and because adults have knowledge that is acquired generally through social interaction which also includes bias and presuppositions. Adult learners are ready to learn things which should assist them to cope effectively in life situations; and they are motivated to learn what they perceive as likely to help them to perform the learnt tasks in their life situations (Mulenga, 2018). The researcher used Knowles's model of Andragogy (1984) for the programme implementation.

The programme was developed in line with the educational expectation that a programme should have a specific focus and be based on need assessment results (Neshuku & Amukugo, 2015). The study results were as follows: The study respondents (recipients) scored low on the level of knowledge regarding cervical cancer in respect of the preventive measures, types, symptoms, sources of information, availability of screening services, indications for cervical screening (associated factors) and treatment. The respondents also scored a neutral level of attitudes on psycho-social influences on prevention and screening, cultural beliefs that influence cervical screening, factors that influence screening and treatment, as well as low coverage uptake of cervical screening. The study's results on the practices regarding screening, prevention, and treatment revealed that there was low (32%) cervical screening uptake, non-existent (0%) HPV coverage, a significant number of respondents (53.4%) that used oral contraceptives for more than five years, while the majority of the respondents (87.4%) did not know about the curability of cervical cancer. The application of Knowles's model on Andragogy to this study is explained in detail in Chapters Seven and Eight of this study.

1.9 THE STUDY PARADIGM

A paradigm is a set of beliefs about the nature of knowledge, a methodology on how to obtain the knowledge and criteria for validity and reliability of data collection instruments (Easterby-Smith et al., 2012). A research paradigm guides the researcher on the selection of research design and methods which are appropriate to the study (Shah & Abdullah, 2013). There are four worldviews or beliefs that researchers bring to inquiry and these are the positivist, constructivist, transformative and pragmatist paradigms. The philosophical approach applied in this study was based on the positivist paradigm (Creswell, 2014). The term positivist paradigm is used to describe a quantitative approach to a study that relies specifically on scientific evidence, such as experiments and statistics, and therefore quantifies the findings through statistical analyses (Polit & Beck, 2017).

In this study, the positivist research paradigm was adopted as the scientific method to investigate the research phenomenon under study. The researcher holds the view that using the quantitative design, which is associated with deductive reasoning, and using questionnaires to obtain measurable and quantifiable data from the respondents, ensures objectivity and independence from the respondents. This is the primary focus of positivist research and findings can be generalised to a large scale of the population. The researcher was interested in determining the underlying causes of phenomenon under investigation and sought to determine the levels of knowledge, attitudes and practices of women of reproductive age on the prevention, screening and treatment of cervical cancer. Therefore, this research study was based purely on the facts and considered the world to be external and objective (Crossman, 2020).

This study is based on the following main five types of philosophical assumptions of the positivistic paradigm: ontological (nature of reality), epistemological (that describes the relationship of the researcher and participants), axiological (functions of values in the research study), methodological (process of research study) and rhetoric or language used in reporting study findings (Creswell, 2014). These assumptions are described below.

1.9.1 Ontological assumption

The ontology is the reality of knowledge that exists and that which the research wants to seek. For each research paradigm, there is an ontological view that the researcher seeks through research (Shah & Abdullah, 2013; Polit & Beck, 2017). In this study, the reality or the findings of this study are objective as they are formed by the data obtained from the respondents by using a questionnaire on the research question.

The study research questions were as follows:

- What is the knowledge, attitudes, and practices of reproductive aged women regarding the screening, prevention, and treatment of cervical cancer in Otjozondjupa region, Namibia?

- What is the appropriate conceptual framework for this study?
- What is the nature of an educational programme that is required to enhance the utilisation of cervical screening among women of reproductive age living in Otjozondjupa region?
- What are the appropriate guidelines that are required for the implementation and evaluation of the educational programme to enhance the utilisation of

cervical screening among women of reproductive age living in Otjozondjupa region?

The reality of the knowledge, attitudes, and practice of reproductive aged women in the Otjozondjupa region on the screening, prevention, and treatment of cervical cancer were provided by the evidence from the quantitative data collected from the study respondents in accordance with the research question or objectives. The reliability of the questionnaire for ontological (reality) purposes was determined through the use of the Cronbach alpha test. The Cronbach alpha test is described in Chapter Three: 3.3.1.7.2 [Table 3.3] of this study.

1.9.2 Epistemological assumption

The epistemological assumption is concerned with the objectivity, and it clarifies the relationship between the inquirer and those being researched regarding the need to avoid biases (Nkwake, 2013). In positivist assumptions, objectivity is the primary method that is used to obtain information from the respondents because the search for truth should be based on the valid findings (Polit & Beck, 2017). Therefore, the data gathering techniques here are mainly questionnaires, observations, tests, experiments and these are objective and independent of the values, interest and feelings of the researcher (Makombe, 2017).

In this study, the researcher used structured self-administered, and researcher administered interview questionnaires to search for data on the knowledge, attitudes and practices of women regarding the prevention, screening and treatment of cervical cancer. The researcher maintained minimal interactions with the respondents and thus ensured objectivity during the data collection process and data analyses (Chapter Three

and Four). The researcher also interviewed respondents who possessed limited literacy and, in the process, held his knowledge so as to maintain the objectivity of the data. The researcher received completed questionnaires from the respondents and drew objective conclusions from the participants.

1.9.3 Axiological assumption

The axiological assumption refers to the researcher's view on values in a research study. It refers to ethics that are adopted to guide research principles and respecting the rights of the subjects (Hay & Singh, 2011 as cited in Mulenga, 2018). It studies the judgments on values in research (Saunders et al., 2012). In the positivist assumption, the objectivity point of view is valued and attempts to hold personal beliefs and biases in check is paramount to avoid contaminating the phenomenon under study (Saunders et al., 2012; Polit & Beck, 2017).

In this study, the researcher remained detached, neutral and independent from what was being researched on and during data collection. Thus, the researcher considered the conclusions that were arrived at from the data instrument as the true reflection of the knowledge, attitude and practice regarding the prevention, screening and treatment of cervical cancer by the study respondents as reflected in the data analyses and findings (Chapter Four). The researcher adhered and ensured research ethical principles such as the principle of justice, respect of persons, beneficence, and non-maleficence, the social value of research and scientific validity.

1.9.4 Methodological assumption

Methodological assumptions refer to the description of methods and techniques that are utilised to conduct a research study. A quantitative research methodology is the

method of choice for a positivist paradigm because the purpose of research is to test a theory, predict results, or find the strength of relationships between variables or a cause-and-effect relationship. Quantitative researchers begin with ideas, theories or concepts that are defined as they are used in the study to point to the variables of interest (Shah & Abdullah, 2013; Easterby-Smith et al., 2012).

In this study, the researcher used a quantitative approach whereby descriptive and cross-sectional designs were used in Phase One of the study, which was a situational analysis. In this phase, the knowledge, attitudes, and practices of women of reproductive age in the Otjozondjupa region were investigated and described. The results identified in Phase one informed the development of a conceptual framework in Phase two of the study. The third phase dealt with the development of an educational programme for the women of reproductive age, as informed by the results from the situational analyses. Phase four covered the identification of the implementation and evaluation guidelines of an educational programme which aimed to improve the knowledge, and to change the attitudes and practices of the reproductive aged women on the prevention, screening, and treatment of cervical cancer.

1.8.5 Rhetorical assumption

Rhetoric assumption refers to the art of persuasion that is meant to convince the readers that the researcher's articulation in the research report is worth something (Easterby-Smith et al., 2012). The researcher adopted a rhetoric assumption in this study using simple English language and a well organised flow of persuasive language to communicate the information about the findings. The research report was prepared, and contributions of other authors are acknowledged using the APA referencing style.

The study is quantitative in nature, the findings are reported numerically, and the study explained the usual occurrences with tables and figures that were used to provide further clarity on the relationship between demographic variables by using Chi-square tests (Annexure I) and correlations between variables (Annexure K) reported using the Pearson r correlation.

1.10 DEFINITION OF THE CONCEPTS

The key concepts defined here are derived from the tittle of the study. These are knowledge, attitude, practice, women, reproductive age, cervical cancer, and programme development. The concepts are defined below:

1.10.1 Knowledge

The Oxford Online Dictionary (2019) defines knowledge as the acts, information and skills acquired through experience or education; the theoretical or practical understanding of a subject awareness or familiarity gained by experience of a fact or situation. In this study, knowledge refers to the individual understanding of women of reproductive age on the screening, prevention and treatment of cervical cancer (Chapter Three - Table 3.2, Section B).

1.10.2 Attitude

An attitude is a person's reaction towards a phenomenon, and it can be affective, cognitive, or behavioural (Oxford Online Dictionary, 2019). In this study, the attitudes refer to individual perceptions of women of reproductive age on the screening, prevention, and treatment of cervical cancer (Chapter Three - Table 3.2 Section C, p. 81).

1.10.3 Practice

According to the Mariam Webster's Collegiate Dictionary (2019), practice is defined as the actual application or use of an idea, belief, or method, as opposed to theories relating to it. It is defined as the act of carrying out an action repetitively in order to become better at it. In this study, practice refers to the uptake of cervical screening, prevention, and treatment of cervical cancer by individual women of reproductive age for the prevention, early detection and treatment of cervical cancer (Chapter Three - Table 3.2 Section C, p. 81).

1.10.4 Women

A woman is an adult female person (Webster, 2019). According to United Nations Population Fund (UNFPA), (2018), a woman is a female of reproductive age (15-49 years) who desires either to have no (additional) children or to postpone the next child and who may be using a modern method of contraception. In this study, the researcher refers to women of reproductive age (18 - 49 years) in the Otjozondjupa region.

1.10.5 Reproductive age

The reproductive age in women refers to those years of life between menarche and menopause, roughly from ages 12 to 49 (WHO, 2018). According to the Namibia Cervical Cancer Prevention Guidelines (2018), reproductive age refers to women of ages between 20 and 49 who are the target population of cervical cancer screening services in Namibia. In this study, reproductive age denotes women aged between 18 and 49 years of age, who met the inclusion criteria of this study.

1.10.6 Cervical cancer

Cervical cancer (cervical carcinoma) is a type of cancer that occurs in the cells of the cervix in the lower part of the uterus that connects to the vagina. The squamous epithelium cells found at this junction of the cervix and uterus divide rapidly and have the potential to change into abnormal transition to dysplastic cells or cancerous cells, if exposed to carcinogens (Leslea et al., 2013; WHO, 2014). For the purpose of this study, it refers to the types of cervical cancer for which the knowledge, attitudes, and practices regarding the screening, prevention, and treatment of cervical cancer of reproductive aged women are being investigated for the development of an educational programme.

1.10.7 Educational programme

It refers to a programme written by an institution of learning to impart knowledge (Online English Dictionary, 2020). In this study, an educational programme refers to the prepared educational contents that constitute the identified challenges (dynamics) with the aim of empowering women of reproductive age with the knowledge, attitudes and practices regarding the screening, prevention, and treatment of cervical cancer.

1.10.8 Prevention

It refers to the act or intervening before health effects occur through measures such as altering risk behaviours and banning substances known to be associated with a disease or health condition (WHO, 2014, 2018). In this study, prevention refers to the activities being implemented to women of reproductive age through an educational programme aimed at avoiding and/or reducing the chance of developing cervical cancer. Prevention activities include HPV vaccination for girls and boys of 9 -14

years of age, and cervical screening for early detection of precancerous lesions to ensure better treatment outcome.

1.10.9 Treatment

It refers to the use of a chemical, physical, or biological agent to preserve or give particular properties to something (WHO, 2020). In this study, treatment refers to the treatment of pre-cancerous lesions detected through the use of visual inspection with the acetic acid procedure among women of reproductive age, for the cure of pre-cervical cancer. Invasive cervical cancer treatment in this study refers to the treatment of cervical cancer tumours that developed into the second or third stage of the disease by using chemotherapy or radiation type of treatment.

1.11 STRUCTURE OF THE STUDY

Chapter one presents the orientation to the study, background, problem statement, purpose and objectives, significance and paradigm, theoretical assumptions, and the definitions of key concepts of the study.

Chapter two presents a literature review to place the current study in the context of existing literature.

Chapter three presents detailed descriptions on the research approach, design, sample and sampling method, data collection instrument, data collection procedure and types of analyses implemented, validity and reliability of the study, data collection instrument as well as ethical considerations applied to the study.

Chapter four covers the study results and descriptions of the results.

Chapter five presents the discussions of the study results and literature control.

Chapter six presents the development of an educational programme to enhance the utilisation of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia

Chapter seven presents the guidelines for the implementation and evaluation of an educational programme to enhance the utilisation of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia.

Chapter eight covers the conclusions, limitations, recommendations and contribution of the study

1.12 CHAPTER SUMMARY

This chapter presented an overview of the study. It outlined the introduction and background to the problem statement, the aim of the study, the objectives, and significance of the study. The paradigm perspectives and theoretical foundations upon which the study was based were also discussed. The key concepts of the study were also defined. The next chapter presents a review of literature related to the current study.

CHAPTER TWO

LITERATURE RIVIEW

2.1 INTRODUCTION

The previous chapter presented the background of the study, problem statement, study purpose, objectives, and conceptual framework of the study. This chapter presents a review of literature on the knowledge, attitude, and practices of reproductive aged women on the screening, prevention, and treatment of cervical cancer. A literature review concerns itself with a critical analysis of organised published knowledge on a topic to contextualise the current research problem (Polit & Beck, 2017; Creswell, 2018). The literature review shares with the reader the results of other studies that are closely related to the one being undertaken. It also provides a framework that establishes the importance of a given study and serves as a benchmark for comparing the findings of the current study with that of other studies (Creswell, 2014; Grove et al., 2015). Therefore, the purpose of a literature review is to convey to the reader what is currently known regarding the topic being investigated.

The review of literature in quantitative research identifies a gap in what is already known, and it identifies the scope of enquiry. It also guides the researcher with regards to the approaches, methods, and data collecting instruments that are appropriate for the current study (Grove et al., 2013). In this study, the literature review enabled the researcher to formulate the research problem into a feasible context and to identify the research design and methods that are suitable to the current study. A review of international and national resources, such as journal articles, books and reports from Government institutions and non-governmental organisations (NGOs), focusing on the

knowledge, attitudes, and practices of women of reproductive age on cervical screening, and the prevention and treatment of cervical cancer was conducted. Search engines such as Science Direct, HINARI, Springerlink, PubMed, Google Scholar, Scopus, Ebscohost, SA E-publication and Taylor and Francis were utilised to access the sources for the literature in this research study. The keywords used for the search include knowledge, attitude, practices, cervical cancer, prevention, screening, risk factor, barriers, incidence, mortality and morbidity, and a combination of these terms. The findings of the relevant literature review are presented in the next sections with some inferences being made to the current study.

2.2 BACKGROUND OF CERVICAL CANCER

2.2.1 Global trends of cervical cancer

Worldwide, cervical cancer is the fourth most frequent cancer in women with an estimated 604 000 new incidences in 2020. Of the estimated 342,000 deaths from cervical cancer in 2020, about 90% of these occur in low- and middle-income countries. There are 34.8 new incidences of cervical cancer diagnosed per 100,000 women annually in sub-Saharan Africa, and 22.5 per 100,000 women die from the disease. By comparison, there are 6.6 new cases of cervical cancer per 100,000 women in North America, and 2.5 per 100,000 women die from it (WHO, 2020).

The incidences of cervical cancer across the globe have increased over the years. It is estimated that currently over a million women worldwide have suffered from cervical cancer but most of these women have not been diagnosed, nor do they have free access to screening services for the early detection and early treatment that could cure them or prolong their lives (WHO, 2018). Recent studies have revealed that the absolute

number of cervical cancer cases have increased worldwide from 471 000 in 2000 to 528 000 in 2012 and then to 570 000 in 2018 with 311 000 women having died from the disease, and thus ranking cervical cancer the fourth most common cause of cancer incidence and mortality in women (GLOBACAN, 2018; WHO, 2018; Arbyn et al., 2019).

Although there is current overwhelming evidence that cervical cancer is preventable through screening, prevention and treatment of premalignant lesions, it is unfortunate that these services are not readily available to the general population in most developing countries and most especially SSA (Kei et al., 2016). Approximately 84% of all cervical cancer cases and 88% of all deaths caused by cervical cancer occurred in low-resource countries, which is in contrast to the lower rate of cumulative rates of cervical cancer incidences and mortality in developed countries (GLOBAN, 2018; Arbyn et al., 2019). The lower incidence rates in developed countries is reportedly attributed to the successful cytology screening programme, low HPV and HIV prevalence rates and better community health education that results in positive sexual behaviour and the subsequent prevention of cervical cancer among women. In comparison, high cervical cancer incidences in SSA and other developing countries could be attributed to the high rates of HPV and HIV transmission and the inaccessibility of screening services (WHO, 2018). Such remarkable global geographical differences among continents indicate the differences in exposure to the risk factors and enormous inequalities in accessing adequate screening and effective cancer treatment facilities.

2.2.2 Incidences of cervical cancer in Africa

Cervical cancer remains the leading cause of death among woman in Africa. According to the International Agency for Research on Cancer (IARC) (2019) cervical cancer was the second prevalent cancer and the leading cause of cancer deaths in Africa in 2018. The available literature projects that about 78,879 women living in Africa will be diagnosed with cervical cancer annually, while 61,671 will die from the disease by 2025. However, Gatumo et al., (2018) have shown that regular cervical cancer screening leads to early detection.

The incidences occurring in the SSA region are instructive. The estimated age standardised incidence rates (ASIR) are the highest in Eastern and Western Africa with an ASIR of 34.5 and 33.7 per 100 000 women respectively, and age standardised mortality rate (ASMR) of 25.3 and 24.0 per 100 000 women, respectively (WHO, 2018), with Guinea, Zambia, Tanzania, Malawi, and Mozambique having some of the highest invasive cervical cancer (ICC) incidence rates in the world at >50/100000 (Forlay et al., 2016). This is likely the result of inadequate or lack of cervical screening services for the early detection prevention and treatment of the disease in most African countries. Studies have revealed that ICC is the most important cause for cancer related deaths in women in Eastern, Western and Middle Africa (GLOBACAN, 2018).

Women living in Africa experience the highest burden of cervical cancer. Highest incidences of cervical cancer (ASIR >40 per 100 0000 women) were registered in countries from eastern, southern, and western Africa (Arbyn et al., 2019). A systematic review of cervical prevention and treatment in Africa revealed that a significant number of women from Kenya, Tanzania and Nigeria were diagnosed when their

cervical cancer has reached an advanced stage (Kei et al., 2016; Lim & Ojo, 2017). The late diagnosis at the advanced stage could be attributed to the inaccessibility of screening services, lack of knowledge among women on the available screening services, lack of spousal support and unaffordable costs (Finochario-Kessler et al., 2016). Namibia is not an exception as she falls within the southern African region. Namibia recorded cervical cancer-related deaths of 572 women across the country between 2008 and 2019 (MoHSS, 2019).

Therefore, educational programmes should target women of reproductive age and assist them on how to have access to cervical screening for the early detection of precancerous lesions and better treatment outcomes. The impact of cervical cancer has serious adverse effects among women of reproductive age. Research and investment to improve vaccination, screening, and treatment efforts for cervical cancer are indeed critically needed.

2.2.3 Incidences of cervical cancer in Namibia

Cervical cancer was the second most common cancer among women in Namibia with 1 118 diagnoses (19.4% of all cancers in women) during the period of 2010 - 2014 and about 132 new cases diagnosed annually, thus showing the cervical cancer incidence rate of 11.1 per 100 000 women (Cancer Association of Namibia (CAN), 2018). The number of cervical cancer cases among women of reproductive age has increased by 50%, thus making it the second leading cause of death among woman in Namibia (The National Cervical Cancer Prevention Guidelines, 2018). The current estimates indicate that every year 236 women are diagnosed with cervical cancer and 135 die from the disease (CAN, 2019). It is stated that 2 461 cervical cancer cases were recorded

between 2007 and 2019 in Namibia (CAN, 2019). The majority of resultant deaths could have been prevented, had appropriate screening, prevention and treatment occurred in a timely manner by addressing the risk factors (Namibia Cervical Cancer Prevention Guidelines, 2018). The cervical cancer incidence rate is 43 to 50 cases per 100 000 women annually, compared to just 6.8 per 100 000 in Western Europe (WHO, 2014; 2018). Cervical cancer was among the top three cancers in each region comprising between 8.0% of cancers in Khomas and 35.9% of all cancers in the Ohangwena region (CAN, 2019). The context of this study, Otjozondjupa region, is discussed in Chapter one: 1.2.2 context of the study.

2.2.4 Screening for cervical cancer

Over the past 50 years, cervical cancer screening has been effective in reducing morbidity and mortality in high-income countries unlike the situation in low-income countries, where effective cervical cancer screening programmes are sporadically provided if they exist (WHO, 2014). The purpose of cervical screening is to detect precancerous lesions for early treatment and reducing the impact of the disease. The early detection should be done urgently for women living with HIV because their cervical lesions are four to five times more likely to become deadly cancers within a short period of time post acquiring of infections (Arbyn et al., 2019; WHO, 2014). Screening for cervical cancer among women of the ages between 30 and 49, for at least once in their lifetime will reduce deaths from cervical cancer (WHO, 2014). Therefore, cervical cancer screening should begin at the age of 21 because the HPV shall have cleared over the years and only a few women would have persistent HPV that cause cervical cancer (Saslow et al., 2012; WHO, 2018). In Namibia, the Family Planning Policy, and the National Policy on Reproductive Health (2001) provides for

the delivery of Pap smear screening during family planning, post-natal and outreach visits.

Clients diagnosed with precancerous lesions or cervical cancer (by Pap smear test) are referred for confirmation tests at the regional hospitals to access their treatment at the nearest district hospitals. This poses challenges as most women in Namibia live in rural areas and they may have difficulties regarding access to the service due to inadequate financial and transport availability. Subsequently, a study conducted by Kangmennaang et al. (2015) focusing on the disparities in cervical cancer screening among Namibian women revealed that the majority of women did not undergo cervical screening because they live in rural areas with transport costs being a major challenge that prevents them from accessing screening services, compared to women who are educated and had health insurances who could afford to access screening services for cervical cancer.

In Namibia, the screening for cervical cancer with visual inspection with Acetic Acid (VIA) for the identification of precancerous lesions, which minimises long awaiting time, was piloted in the Khomas region, Windhoek district and has since been rolled out to other districts in the regions that include the Otjozondjupa region where the study is being conducted. The Otjozondjupa health directorate is composed of four district hospitals, three health centres and 16 primary health care clinics, all of which offer cervical screening services for early detection and treatment of cervical cancer (MoHSS, 2018). Access to screening, for the early detection and treatment of cervical cancer for better health outcomes is related to the women's knowledge, attitudes, and practices regarding cervical screening, prevention, and treatment and ready availability of the services at local family planning clinics (Ndejjo et al., 2017).

2.2.5 Aetiology of cervical cancer

Cervical cancer (cervical carcinoma) is a type of cancer that occurs in the cells of the cervix in the lower part of the uterus that connects to the vagina. The squamous epithelium cells found at this junction of the cervix and uterus divide rapidly and have the potential to change into abnormal transition to dysplastic cells or cancerous cells, if exposed to carcinogens (Leslea et al., 2013; WHO, 2018). Pre-cancerous lesions have a tendency of changing the cervical epithelium progresses from mild to severe over a period of 20 years before changing to cancer in an HIV negative woman, while women living with HIV presenting up to 10 years earlier with cervical cancer (The Namibia Cervical Cancer Prevention Guidelines, 2018; WHO, 2018; 2020).

The major common risk factor, which is responsible for 99.7% of cervical cancers of pre-invasive or invasive cervical carcinoma, is infection with Human papilloma virus (HPV), which is transmitted sexually (WHO, 2017). Over 50.0% of sexually active women acquire HPV by 50 years of age (Leslea et al., 2013). Various types of HPV have been identified as precursors to cervical cancer. Among these types are HPV 16 and 18, which are the common types of HPV and found in over 70.0% of all cervical cancers. Other risk factors for cervical cancer include engaging in sexual intercourse at an early age (between 12 and 18 years), having an increased number of sexual partners, smoking, immune suppression caused by diseases such as HIV and certain medications, high parity, usage of oral contraceptives for over five years, family history of cervical cancer and a low socio-economic status (WHO, 2014; WHO, 2018).

2.3 PREVENTATIVE METHODS OF CERVICAL CANCER

WHO (2018) indicates that early opportunities for reducing suffering and death from cancer in Africa exist across all stages of the cancer control spectrum, from prevention to early detection, treatment and palliative care. Preventive methods of cervical cancer are divided into three and these are primary prevention which prevents the initial development of cervical cancer; secondary prevention focusing on the detection of early precancerous cervical lesions by screening and offering immediate treatment and thirdly, tertiary prevention which offers treatment for cervical cancer to ease and reduce morbidity and mortality among women (WHO, 2014).

2.3.1 Primary prevention methods

Primary prevention refers to interventions undertaken before health effects occur, through measures such as vaccinations, altering risky behaviours (poor eating habits, tobacco use), and banning substances that are known to be associated with a disease or health condition (WHO, 2018). The prevention of exposure to cancer-causing agents or risk factors, such as HPV is the most effective and reliable method of prevention (Jemal et al., 2012). The WHO (2014) has recommended HPV vaccination as the most feasible public health strategy to reduce the risk of infection and minimise the prevalence of the disease-causing agent (HPV) in the environment. It is recommended that vaccinating girls (9-13 years) before the initiation of sexual activity is an important primary prevention intervention in a comprehensive cervical cancer prevention and control programme (WHO, 2014; United Nations Population Fund, 2017). The WHO (2014) has recommended the inclusion of HPV vaccination in national immunisation programmes where HPV is deemed a public health concern and vaccine delivery is feasible. It is important to note that because the vaccines do not

protect against all HPV types that can cause cervical cancer, girls vaccinated against HPV will still require cervical cancer screening later in their lives (WHO, 2013; WHO, 2014). By August 2014, a few countries had introduced HPV vaccination into their national immunisation programme. These countries include Rwanda, South Africa, Lesotho, Uganda and Namibia, with Rwanda having reached the recommended 90% of girls that should receive the HPV vaccine (Finocchario-Kessler et al., 2016).

In addition to HPV vaccination, the WHO (2014) recommends safe sex for boys and girls, tailored for the appropriate age and culture, with the aim of reducing the risk of HPV transmission (along with other sexually transmitted infections such as HIV). Thus, essential messages should include delaying sexual debut, reducing the number of sexual partners, and increasing consistent and continuous use of condoms. Furthermore, to reduce HPV acquisition and transmission, voluntary medical male circumcision (VMMC) is also recommended as a preventative strategy against HPV infection (Stanley, 2014; Abudukadeer et al., 2015). Therefore, increasing voluntary medical male circumcision coverage would provide indirect benefits to women by reducing the risk of transmission of infection from HPV. In Namibia, the HPV vaccination programme has been developed but not implemented due to budgetary and human resource constraints. Voluntary Medical Male Circumcision (VMMC) was introduced since 2010 and it was rolled out to all 14 regions, with the introduction of task-shifting to registered nurses performing circumcision in all district hospitals and health centres (MoHSS, 2011; The Namibia Cervical Cancer Prevention Guidelines, 2018).

2.3.2 Secondary prevention methods

Secondary prevention refers to the activities that are aimed at interrupting or reducing the impact of any disease process before the emergence of the recognised signs or diagnostic findings of the disorders (WHO, 2018; 2020). Screening for early detection and treatment of precancerous lesions is a cornerstone of secondary prevention. Women targeted for screening may actually feel perfectly healthy and see no reason to visit health facilities (Namibia Cervical Cancer Prevention Guidelines, 2018). Early detection of pre-cancerous lesions is the first step of early treatment interventions leading to positive treatment outcomes. Thus, education to increase the knowledge about cervical screening plays an important role for the success of prevention intervention.

Screening is a public health intervention that is provided to an asymptomatic target population, with the aim of identifying individuals with an increased probability of having a precursor of the disease or the disease itself. At a minimum, screening is recommended for every woman of 30-49 years of age at least once in a life time (WHO, 2018). In Namibia, there is a high burden of HIV infection which increases the risk of persistent HPV infections. Early sexual debut and the practice of having multiple sexual partners are also common. These risk factors have resulted in the initiation of cervical screening at a younger age of 21 years than the standard WHO recommendation. An initial cervical cancer screening age is recommended from age 25 in HIV negative women and age 20 in HIV positive women (Namibia Cervical Cancer Prevention Guidelines, 2018). Three cervical cancer screening tests are available, namely: cervical cytology using Papanicolaou (Pap) smear, Visual

Inspection with Acetic Acid (VIA) and HPV DNA testing (Namibia Cervical Cancer Prevention Guidelines, 2018).

In high income countries, cervical cytology (Pap smear test) has delivered successful result in reducing the impact of cervical cancer. However, it is not a feasible method in many developing countries, especially in SSA countries. The challenges are linked to the required multiple visits, the level of medical and laboratory infrastructure required, the cost of training personnel, a poor patient tracking system and limited accessibility and availability of screening services (Fenocchario- Kessler et al., 2016).

A study conducted in western Kenya revealed that a third of the diagnosed women with pre-cancerous cervical cancer that had used the cytology method did not turn up for treatment (Khozaim et al., 2014). Therefore, the authors recommend that the single visit "screen and treat" strategy that uses visual inspection techniques, followed by cryotherapy for eligible women is a better approach to cervical cancer prevention and treatment in SSA. The benefits of the single visit approach are that it decreases barriers to care, and it is affordable and sustainable as opposed to the Pap smear testing and colposcopy methods (WHOH, 2018; Finnochario - Kessler et al., 2016).

To mitigate the challenge of multiple visits, the WHO (2014) approved the use of VIA or visual inspection with Lugol's iodine (VILI) strategies for screening of cervical cancer in low resource settings including Namibia, because the results are immediate. Therefore, the cervical screening method of choice in Namibia is VIA and the MoHSS, in partnership with I-Tech Namibia and the Centre for Disease Control (CDC), has implemented the programme since 2019 (MoHSS, 2019). The programme is being rolled out among regions accompanied by human resources training, resources

mobilisation, adjustment and renovations of infrastructure and community mobilisation.

2.3.3 Tertiary prevention methods

Tertiary prevention aims to soften the impact of an ongoing illness or injury that has lasting effects (WHO, 2018; 2020). Tertiary prevention is the last attempt in controlling and mitigating the effect of cervical cancer. Severe cervical dysplasia that remains undiagnosed or untreated can develop into invasive cancer. Women with abnormal cervical tissues are diagnosed with either precancerous lesions or ICC, both of which require treatment. The studies conducted in Kenya, Tanzania and Nigeria reveal that a significant proportion of women (over 80%) is identified once their cervical cancer is at an advanced stage, which makes it difficult to cure the disease (Finocchaario-Kessler et al., 2016). The treatment for ICC can include a range and combination of strategies including hysterectomy (requires surgical facilities), radiotherapy (external and intracavitary radiotherapy infrastructure) and chemotherapy (Finocchaario-Kessler et al., 2016).

There are challenges in the implementation of tertiary prevention in many African countries. Studies conducted in Zimbabwe, Tanzania and Nigeria reveal that a significant number of women who are diagnosed with advanced stages of cervical cancer did not receive treatment (Makurirofa et al., 2019; Mabelele et al., 2018). This could be attributed to the fact that advanced treatment services for invasive cervical cancer are available in town settings in most countries with loss of follow ups as a challenge among women due to the inaccessibility of such services.

2.4 OVERVIEW ON KNOWLEDGE, ATTITUDES, AND PRACTICES (KAP) OF REPRODUCTIVE AGED WOMEN REGARDING SCREENING, PREVENTION, AND TREATMENT OF CERVICAL CANCER

The level of knowledge, attitudes, and practices among women of reproductive age are the main determinants of the uptake for cervical screening, prevention, and treatment of cervical cancer (WHO, 2018). KAP survey data are essential to identify the gaps, cultural beliefs and or behavioural patterns that may facilitate or impede the success of an intervention and also helping to plan, implement and evaluate programmes (Creswell, 2014). Various women from developing countries have limited knowledge, as well as less positive attitudes and practices on cervical cancer screening, prevention, and treatment opportunities. The KAP of women regarding cervical screening, prevention and treatment presented in similar studies are reviewed and are discussed below.

2.4.1 General knowledge of women regarding screening, prevention and treatment of cervical cancer

The level of knowledge of women on screening, prevention and treatment of cervical cancer determines their willingness to take up the screening service (Glanz et al., 2015). Nwobodo and Ba-Break (2015) state that the knowledge of women on cervical cancer determines the level of perceptions about the susceptibility and severity of the disease, as well as the benefits of cervical screening, prevention, and treatment.

- 2.4.1.1 Preventive measures of cervical cancer

A study on the knowledge, attitude, and practices on cervical cancer prevention among women in Kampong Speu, Cambodia, revealed that the majority of women had no

knowledge on the prevention measures of cervical cancer, even though an insignificant number of women had heard of the Pap smear test (Touch & Oh, 2018). Similar findings were reported in Bahrain and Zimbabwe (Jassim et al., 2018; Makurirofa et al., 2019).

The KAP studies conducted in the Xinjiang province of China and other Asian countries report that the majority of women lacked knowledge on both the preventive measure of cervical cancer and benefits of and availability of screening services (Hussain et al., 2014; Johnson et al., 2014; Sankaranarayanan, 2014, Abudukadeer et al., 2015; Bansal et al., 2015; Jradi & Bawazir, 2019).

Lack of knowledge results in the lack of attitudes, thereby leading to the low uptake of cervical screening services (Kei at al., 2016; Chaka et al., 2018; Kashyap et al., 2019). The KAP study conducted in Cambodia reported similar sentiments, that the majority of women did not undergo screening (Pap smear test) and that they were not vaccinated against HPV due to the inadequate knowledge on preventive measures of cervical cancer and the availability of cervical screening services (Touch & Oh, 2018). Furthermore, the causes of limited or non-attendance of screening services for cervical cancer included financial constraints, lack of time, distance, and long waiting time at the facilities (Abudukadeer et al., 2015; Ebu et al., 2015; Ndejjo et al., 2016).

On the contrary, studies conducted in some Asian countries reveal that although most women had adequate knowledge on cervical cancer prevention and HPV infection, less than half attended screening services (Jassim et al., 2018). Such poor attendance could be attributed to inadequate or lack of screening services, and inconstant mass media campaigns. Furthermore, the KAP studies conducted in rural Uganda and the

Lake Zone in Tanzania, indicate that although more than half of the women had a high knowledge level on cervical cancer, an insignificant number attended screening. Their reasons included that they could undergo regular medical check-ups or screening or delay sexual debut as a preventive measure of cervical cancer (Ndejjo et al., 2016; Mabelele et al., 2018).

HPV vaccination is one of the preventive measures for cervical cancer. Most countries in the SSA do not include HPV vaccination in their national prevention strategy for cervical cancer and this results in women's possession of limited or no knowledge on the vaccinations programmes (Sterwart & Wild, 2014; WHO, 2014; Chaka et al., 2018). This is likely the result of inadequate or lack of cervical screening services for A KAP study conducted in rural Zimbabwe on cervical cancer revealed that women had low knowledge on the HPV vaccine as a prevention measure for cervical cancer. In addition, the same study reports that only a few women could mention the other preventive measures such as avoiding early sexual intercourse and multiple sexual partners, and quitting tobacco smoking (Makurirofa et al., 2019).

Finally, findings from a KAP study conducted in Nigeria among women who had advanced cervical cancer revealed that the women did not attend cervical screening because of a lack of knowledge on cervical cancer and prevention. Respondents did not attribute symptoms to cervical cancer but instead linked these to the resumption of menses, genital infection and irregular menstruation periods (Denny & Anorlu, 2012). Despite this and the above-cited studies on KPA, the knowledge of Namibian women of reproductive age in the Otjozondjupa region on prevention measures of cervical cancer is not known, hence the justification for the present study.

- 2.4.1.2 Factors that cause cervical cancer

A risk factor is anything that increases a person's chance of developing cancer. Although risk factors often influence the development of cancer, most do not directly cause cancer (WHO, 2018). The reviewed literature indicates that women in developed countries such as Britain understood the association between cervical cancer and risk factors such as smoking cigarettes, early sexual debut and having multiple sexual partners (Sterwart & Wild, 2014). This phenomenon could be attributed to higher education levels and better accessibility as well as the availability of cervical cancer information to the target population in developed countries.

Moreover, the findings of the KAP study conducted in the Xinjiang province of China revealed that women had no knowledge that HPV is a risk factor for cervical cancer (Abudukadeer et al., 2015). Similarly, the literature indicates that women in Ghana, Nigeria and Zimbabwe demonstrated limited knowledge about the risk factors for cervical cancer because they only mentioned risk factors such as multiple sexual partners, early sexual intercourse, smoking of cigarettes, and sexually transmitted infections (STIs) (Ebu et al., 2015; Kei et al., 2016; Makurirofa et al., 2019). However, a similar study conducted in Kenya revealed a different perspective in that the majority of women had adequate knowledge of risk factors for cervical cancer because they could mention a number of them such as heavy bleeding, bleeding between the periods, multiple pregnancies, early age at first intercourse, use of oral contraceptives, smoking cigarettes, and HIV infection (Sudanga et al., 2013; Mabelele et al., 2018). Therefore, to control or reduce the high incidences of cervical cancer among women in Namibia, women should possess adequate knowledge about the risk factors for cervical cancer in order for them to develop a positive attitude towards cervical screening for early

detection that leads to timely treatment and cure. As such, the current study sought to assess the knowledge of risk factors for cervical cancer among women of reproductive age in the Otjozondjupa region of Namibia.

- 2.4.1.3 Types of cervical cancer

Cervical cancer starts when the cells that line the cervix begin to develop abnormal changes. Over time, these abnormal cells may become cancerous, or they may return to normal. Thus, most women do not develop cervical cancer from the abnormal cells. Nonetheless, there are two main types of cervical cancer, which are squamous cell cancer and adenocarcinoma cell cancer. The types are named after the type of cell that becomes cancerous (ACS, 2020). Squamous cells carcinoma begins in the thin, flat cells that line the bottom of the cervix and it accounts for about 80% of the cervical cancers. Adenocarcinoma of the cervix develops in the glandular cells that line the upper portion of the cervix and this makes up about 20% of cervical cancers. However, other types of cancers such as metastatic cervical cancer that starts in the cervix and spreads to other part of the body, can develop in the cervix (WHO, 2018). Studies have revealed that a severely limited number of women have knowledge on the types of cervical cancer (Makurirofa et al., 2019; Chaka et al. 2018; Mabelele et al., 2018).

- 2.4.1.4 Symptoms of cervical cancer

Women's knowledge of the suspected symptoms of cervical cancer is important towards seeking medical intervention. Early cervical cancer shows no symptoms, which explains why cervical screening remains an important test in order to detect the precancerous cells before the symptoms for better treatment outcomes. The most common symptoms at presentation are irregular or heavy vaginal bleeding or bleeding

after sexual activity. In some women, symptoms would present with vaginal discharge that is watery, mucoid, or foul smelling. In the advanced stage of the disease, cervical cancer presents with pelvic or lower back pain, bowel, or urinary symptoms such as pressure related complaints, vaginal passage of urine or stools which are common, suggesting that the disease has reached an advanced stage (WHO 2018). The reviewed literature indicates that the majority of women in developed countries such as Turkey were able to relate abnormal vaginal bleeding and postcoital bleeding with cervical cancer. The findings of a study conducted in rural Malaysia to determine women's uptake of cervical screening and its predictors indicate that the majority of the participants could not mention any symptoms that are suggestive of cervical cancer. Other studies indicate that vaginal discharges and itching were the only common signs and symptoms mentioned by the study participants (Health Promotion Hospital of Lum Khao, sub-district, 2014).

In conclusion, the findings from KAP studies in Zimbabwe, Tanzania, Nigeria and Ethiopia revealed that only few women could identify irregular vaginal bleeding and foul vaginal discharges, pain during and after sexual intercourse and back pain as the symptoms of cervical cancer. However, only a few women could mention that vaginal bleeding, vaginal foul-smelling discharges, and back aches are associated with cervical cancer (Makurirofa et al., 2019; Chaka et al. 2018; Mabelele et al., 2018; Bansal et al., 2015; Kei et al., 2016). These revelations demonstrate that an absence of adequate knowledge on the signs and symptoms of cervical cancer will result in most women's non-attendance of screening services. Therefore, women's knowledge should be assessed for educational programmes that will empower women with the knowledge

on the signs and symptoms of cervical cancer and thus resulting in women's development of positive attitudes towards cervical screening uptake.

- 2.4.1.5 The sources of information on cervical cancer

Access to information on cervical cancer is the corner stone for the success of the preventive programme. Appropriate sources of information on cervical cancer include health care providers, friends and relatives of the affected and media such as radio and television. As a result, the findings of studies conducted in Uganda, the Democratic Republic of Congo (DRC), South Africa, Zimbabwe and Ethiopia indicate that health care workers and media, mainly the radio and television, are the sources of information about cervical cancer in that order of magnitude (Ndjejjo et al., 2016; Ramathuba et al., 2016). Interaction with friends also provides an opportunity for information about cervical cancer (Abudukadeer et al., 2015).

Namibia has a high literacy rate of about 91.53. The adult literacy rate is the percentage of people aged 15 and above who can both read and write with understanding a short simple statement about their daily lives. The healthcare workers and printed media remain significant in the transmission of information to the public. Therefore, there is an opportunity to transmit information on cervical cancer to women of reproductive age for prevention purposes through printed and electronic media (https://www.macrotrends.net/countries/NAM/namibia/literacy-rate'>Namibia Literacy Rate 1991-2021. www.macrotrends.net. Retrieved 2021-01-25).

2.4.2 Knowledge regarding the screening for cervical cancer

The level of women's knowledge on the whereabouts of cervical cancer screening services and the rationale for screening are some of the determining factors for women's uptake of screening. These factors are discussed below.

- 2.4.2.1 Availability of cervical cancer screening services

Information on the availability of cervical screening services and healthcare facilities that provide the services is crucial to the success of prevention services. Studies conducted in Zimbabwe, Uganda and Ghana reveal that a majority of women did not know of the healthcare facilities that offer cervical screening services for cervical cancer in the area. As a result, women did not attend screening services because of lack of knowledge on the availability of screening services (Kei et al., 2016; Ndejjo eta al., 2016; Ebu et al., 2015). A study conducted in Ghana focusing on the knowledge, practices and barriers revealed that women did not attend screening sessions because of lack of knowledge on the availability of the said screening services (Ebu et al., 2015). This is unlike in developed countries, specifically Kuwait and Saudi Arabia, where over half of the women had adequate knowledge and easy accessibility of cervical screening services (Alsbeih, 2014). Women in Africa, including those form Namibia, are less informed on the availability of screening services for cervical cancer and they cannot access screening services with convenience. Hence, the present study assessed knowledge about the availability and access of screening services by women of reproductive age in the Otjozondjupa region of Namibia.

- 2.4.2.2 Indications for cervical cancer screening

One of the indicators of the need for screening services for cervical cancer is a perceived susceptibility to cervical cancer by the women of reproductive age. Perceived susceptibility determines the women's intention and decision to seek screening services for cervical cancer (Glanz et al., 2015). By implication, the women who perceive themselves of being at risk of cervical cancer are more inclined to attend cervical screening services. Glanz et al., (2015) argue that the perceived risk of a disease is the main determinant for people to take the recommended preventive behaviour. Thus, women who perceive themselves as at risk are likely to accept cervical screening compared to women who do not perceive themselves as being at risk.

Nonetheless, the findings of studies in Kenya, Democratic Republic of Congo, and Bahrain, reveal on the contrary, that while a significant number of women perceived themselves as being at risk of cervical cancer, only a few had been screened (Jassim et al., 2018; Touch & Oh, 2018; Bansal et al., 2015). A low perceived risk of cervical cancer is likely to be associated with a low uptake of cervical screening. These findings call for healthcare workers to sensitise women of reproductive age about their (women's) susceptibility to cervical cancer through the dissemination of information on cervical cancer as this may result in the utilisation of screening services among the target population. Similarly, women in Kuwait and India perceived themselves as being at less risk for cervical cancer because of an absence of symptoms and therefore they did not attend screening services (Bansal et al., 2015).

The above reviewed scenarios may apply to the women of reproductive age in the Otjozondjupa region of Namibia. Hence, the current study sought to assess women's intention to undergo cervical screening for cervical cancer prevention and treatment.

2.4.3 Knowledge regarding the treatment of cervical cancer

Women's knowledge about the types of cervical cancer treatment is very important as it instils hope in the alleviation of symptoms and the cure of cervical cancer.

- 2.4.3.1 Types of treatment for cervical cancer (pre-cancerous lesions and invasive cancer)

The purpose of treating pre-cancerous lesions is to destroy the affected cells before they turn into carcinoma. The treatment for pre-cancerous lesions includes cryotherapy, which is offered at the point of care where cervical screening is conducted; while the treatment for invasive cancer includes surgery for the excision of the cancerous tissues, radiation of cancer cells and chemotherapy or systematic anticancer therapies (WHO, 2018). However, the treatment of cervical cancer depends on the size of the detected lesions (tumour) and how far it has spread. Also, a woman's desire to have children in the future also plays an important role in deciding the type of treatment (WHO, 2020). Thus, women's knowledge of the types of treatment for cervical cancer may serve as a motivation to undergo screening for cervical cancer for prevention and treatment purposes.

In this regard, the findings of the KAP studies conducted in Tanzania and Zambia both revealed that the majority of both nations' women knew of surgery and radiation as the methods for treating cervical cancer (Mwanahamuntu et al., 2017; Mabelele et al., 2018). In Namibia, patients who are diagnosed with cervical cancer are treated with

either of the treatment (MoHSS, 2018). Therefore, the current study aimed at assessing the knowledge of treatment options for cervical cancer by the women of reproductive age in the Otjozondjupa region. The knowledge of available treatment options instils hope and influences an intention for screening for the prevention and treatment of cervical cancer.

2.4.4 Attitude regarding screening, prevention and treatment of cervical cancer

Attitude is the main determinant factor among women to decide whether to attend cervical cancer prevention services or not. Attitude determines the intention to seek health services. The implication is that women with a positive attitude are likely to seek screening services, while women with a negative attitude towards screening for cancer are less likely to do so. Globally, research has proven that women's attitudes towards screening are influenced by cultural beliefs that women do not attend cervical screening services because of their preference for a female doctor/nurse service provider. Some women declined screening because they are single and, thus they did not see the need for screening (Sterwart & Wild, 2014; Bansal et al., 2015; Gamara et al., 2015; Twinomujuni et al., 2015; Al Khudairi et al., 2017; Aweke et al., 2017; Jassim et al., 2018; Mabelele et al., 2018). In contrast, a few studies that were conducted in Kenya and Malawi focusing on acceptability and preferences indicate that women were comfortable with male healthcare providers as these also assist them during childbirth (Carvalho, 2016; Sudenga et al., 2013). Therefore, these challenges can be addressed through carrying out educational activities that emphasise that all health care providers are trained so as to uphold ethical principles during service delivery. However, the rights of women should be respected as a way to ensure that

the programme's objective, which is to increase the uptake of cervical screening, is attained.

Equally so, attitudes of health care workers towards women seeking cervical cancer screening influence the women's intention and decision to seek screening for cervical cancer. The findings of a systematic review on the barriers to the utilisation of cervical cancer screening in SSA report that a negative attitude of healthcare workers, especially nurses, towards women seeking cervical cancer screening creates a barrier towards the utilisation of cervical cancer screening. In this regard, participants echoed that negative attitude of health care workers, characterised by rudeness towards clients, prevent women from taking screening services for cervical cancer (Makurirofa et al., 2019; Jassim et al., 2018; Lim & Ojo, 2017; Ramathuba et al., 2016). There is a need to educate health care providers on the need to uphold ethical principles during service delivery related to cervical screening for cancer prevention and control.

Women's attitude towards cervical cancer screening is also determined by socio-economic factors such as cost-related challenges and lack of support from their partners. A study conducted in the Kingdom of Bahrain reports that the majority of women are supported by their spouses to attend screening services (Jassim et al., 2018). In contrast, studies in the SSA revealed that various women could not attend cervical screening due to financial constraints and a lack of support from their partners (Lim & Ojo, 2017). This implies that men should be provided with health education about the importance of cervical screening, hence the significance of their role in providing financial support to their partners in order to participate in health promotion activities such as screening for cervical cancer.

Fear of the outcome influences the women's attitude to uptake screening services for cervical cancer in a negative way. The KAP studies conducted in Kenya revealed that women did not attend the screening and preventive services because of fear of pain and embarrassment, and they were also shy to be screened by male healthcare providers as well as being afraid of the test results (Makurirofa et al., 2019; Jassim et al., 2018; Ramathuba et al., 2016; Kei, et al., 2016, Sudenga et al., 2016).

In addition, a different but similar KAP study conducted in Kenya reported that the majority of women perceived cervical cancer as a serious disease, which is a cue to positive health seeking behaviour (Morema et al., 2014). Glanz et al. (2008) argue that perceived severity and susceptibility to the disease motivate the urge for seeking services such as cervical screening. Therefore, women who perceive cervical cancer as a serious disease have a high chance of uptake of cervical screening services.

2.4.5 Practices of women regarding cervical cancer

Cervical cancer screening is highly recommended by the WHO (2018) as it prevents invasive cervical cancer (ICC). However, cervical cancer screening uptake has been reportedly low in developing countries in comparison to developed countries. The practice towards screening for cervical carcinoma is poor among women including those with knowledge of both the disease and the importance of screening (Ramathuba et al., 2016). The WHO (2014; 2018) reports that opportunistic cervical screening is the practice and as a result, many women present with late stage of the disease.

The majority of women in developed countries are screened for cervical cancer as compared to those from developing countries. The findings of the KAP study conducted in England reveal that women attended regular Pap smear screening tests at

the interval of every 3 to 5 years (Wong, Wong, Low, Khoo & Shuib, 2009 as cited in Kei et al., 2016). In contrast, a study conducted in Asia and Africa revealed different sentiments because a majority of women did not attend regular Pap smear tests due to a lack of knowledge and inadequate financial support (Sudanga et al., 2013). Another study conducted in Nepal shares the same sentiment as the researchers noted that a few women participated in Pap smear screening (Ranabhat et al., 2014). Moreover, in India, the uptake of cervical screening (Pap smear test) is much lower than in Nepal (Bansal et al., 2015), although it is high compared to the coverage in Ethiopia (Ranabhat et al., 2014; Chaka et al., 2018).

A KAP study conducted in South Africa and Uganda revealed that women in both countries were found to have adequate knowledge of cervical cancer, but the uptake of cervical screening was very low (Ndejjo et al., 2016). In spite of knowledge of cervical screening and the availability of screening services in South Africa, the majority of women from higher social and educational backgrounds did not undergo cervical screening (Ramathuba et al., 2016). These findings indicate that knowledge of the disease and services alone may not lead to the constitution of an attitude that would result in the practising of the recommended behaviour. Therefore, there is a need to educate women about the dangers of cervical cancer, the increased perceived risk of cervical cancer and the benefits of early detection using a Pap smear test or VIA in order to ensure access to treatment at an early stage.

However, a similar KAP study conducted in the Isiolo and Tharaka Nithi counties in Kenya revealed different observations in that a significant number of women were noted as having undergone cervical screening (Gatumo et al., 2018). In the midst of this, a favourable finding of a relevant study is that a highly significant number

reported willingness to attend a health education programme for cervical cancer. This implies that if women gain knowledge on the benefits of early detection and curability of cervical cancer, individuals may be willing to uptake the screening test.

Studies conducted in other parts of the SSA have also reported low rates of cervical screening uptake ranging from 6% to 21% respectively (WHO, 2013; WHO, 2017). Low screening coverage rates in developing countries could be attributed to the general poor access to healthcare facilities and inadequate screening services. Thus, improved access to health care increased screening and treatment at healthcare facilities, and the dissemination of information to address negative attitudes around cervical cancer screening are crucial components to increase women's uptake of an effective cervical cancer prevention programme.

Studies have revealed that the uptake of cervical screening is high among women who have formal employment, thus income is deemed a motivating factor (Morema et al., 2014; Bansal et al., 2015). This can be attributed to the fact that improved financial security motivates women to participate in cervical cancer screening and other reproductive health care services.

A systematic review of cervical cancer prevention and treatment in Africa revealed that the reasons for low cervical cancer screening uptake among women in the SSA are relatively similar. Women throughout the continent reported that they did not attend screening due to lack of knowledge, psycho-social and cultural beliefs such as fear of the screening procedure and a negative outcome, low level of awareness, embarrassment, possible violation of privacy, lack of spousal support, societal stigmatisation, and financial and health service factors such as distance to the facility

versus cost, facility navigation, waiting time and healthcare workers' attitudes (Finocchario-Kessler et al., 2016; Lim & Ojo, 2017). On the contrary, a similar KAP study conducted in Addis Ababa, Ethiopia, revealed that participants disagreed that the cervical cancer screening test took up too much time, was embarrassing, painful or that health care providers were rude (Chaka et al., 2018). This positive sentiment is a motivating factor to encourage women to uptake cervical screening for early detection and better treatment outcomes. However, the practice of women of reproductive age in Namibia regarding cervical cancer screening is not known, hence the current study to assess the practices of women of reproductive age regarding cervical cancer screening, prevention, and treatment.

2.5 RISK FACTORS FOR CERVICAL CANCER

Literature indicates that several factors are responsible for cervical cancer. These include a family history of cervical cancer, infection with the Human Papiloma Virus (HPV), HIV infection, cigarette smoking, hormonal contraceptives, multiple sexual partners, early sexual debut, and higher parity. Although the exact cause of cervical cancer is not known, certain factors appear to increase the chances of cervical cancer development in a woman's lifetime, although not all women exposed to the risk factors develop cancer (Kashyap et al., 2019). According to the American Cancer Society (ACS) (2019), various types of risk factors cause cervical cancer. These known risk factors for cervical cancer are outlined below.

2.5.1 Family history of cervical cancer

The literature review reveals that genetic susceptibility could play a role in the aetiology of cervical cancer in the family lineage with inherited conditions that make

some women to be less able to fight off HPV infections than others. Subsequently, the literature claims that a woman whose mother or sister had cervical cancer has a 2 to 3 times risk of acquiring cervical cancer (Moore & Driver, 2014; WHO, 2014; Momenimovahed & Salehiniya, 2017).

2.5.2 Human Papilloma Virus (HPV) as a risk factor for cervical cancer

Literature indicates that the most important risk factor for cervical cancer is HPV, which is transmitted sexually. It should be noted that not everyone who has HPV develops cancer. In fact, potential infection with HPV may clear on its own over the years before it causes cervical cancer. Currently, there is no cure for HPV infection, apart from managing the lesions or growths caused by them (WHO, 2014; ACS, 2019). Epidemiological evidence clearly indicates that high-risk HPV 16 and 18 are the principal causes of ICC and cervical intraepithelial neoplasia (CIN) (WHO, 2013; 2018). As a result, women with a high risk of HPV infection have a 33-fold increased risk of cervical neoplasm compared to HPV negative women (Khan et al., 2015). The WHO (2013) recommends the vaccination for girls of 9 -13 years against HPV before they engage in sexual conduct. Equally, women of reproductive age in the Otjozondjupa region (context of the current study) should have knowledge that HPV infection can cause cervical cancer and that vaccination against HPV prevents cervical cancer.

2.5.3 Human immunodeficiency virus (HIV)

The studies on the relationship between HIV and cervical cancer reveal that there is a higher rate of persistent HPV infection with multiple oncogene viruses in women infected with HIV (Momenimovahed & Salehiniya, 2017). The risk of developing an

infection from high-risk HPV types 16 and 18 is higher in women with HIV infection. Studies confirm that HIV positive women with pathologies of the cervix are quickly progressing into invasive cancer compared to HIV negative women (Health Systems Trust, 2014; Franceschi & Jaffe, 2017). Therefore, the WHO (2014) recommends annual cervical screening to all women who are HIV positive as a way to maximise the opportunity for the prevention of invasive cervical cancer. Subsequently, in Namibia, it is recommended that women who are HIV positive should be screened annually while those who are HIV negative should receive routine screening for cervical cancer every third year (The National Cervical Cancer Prevention Guidelines, 2018).

2.5.4 Cigarette and tobacco smoking, parity and the use of hormonal contraceptives

Literature indicates that smoking is one of the most important risk factors for squamous cell carcinoma of the cervix (Momenimovahed & Salehiniya, 2017, Brinton, 2012). Smoking can increase the risk of cervical neoplasia through its local induction of immune suppression by tobacco metabolites. Chemicals in cigarettes such as nicotine and carcinogens and their metabolites, cause damage to the DNA in squamous cells of the cervix, thus leading to cervical cancer (Momenimovahed & Salehiniya, 2017; Kei et al., 2016; Roura et al., 2016). In South Africa, smoking among women contributed to 7.7% of cervical cancer (WHO/ICO Information Centre of HPV and Cervical Cancer, 2019). Namibia is known to have a prevalence of tobacco smoking among women across all 14 regions (Zhifei et al., 2019; NDHS, 2013) and this phenomenon puts women of reproductive age at risk of cervical cancer. Thus, there is a need to assess the knowledge about the relationship between cigarette smoking and cervical cancer among women of reproductive age.

Furthermore, recent studies indicate that the risk of cervical cancer doubled in women who use hormonal contraceptives for longer than five years and that the risk returned to normal ten years after they stopped using oral contraceptives (Momenimovahed & Salehiniya, 2017; Roura et al., 2016). A study conducted in Namibia on the risk factors for cervical cancer revealed that oral contraceptive hormonal use is a risk factor among women of reproductive age (Kakehongo, 2018).

Naturally, oestrogen and progesterone stimulate the development and growth of some cancers, including cervical cancer, through the receptors of these hormones. The synthetic versions of these female hormones contained in oral pills can cause hyperplasia of the cervix and thus, potentially increase the risk of cervical cancer. In addition, oral contraceptives might increase the risk of cervical cancer by changing the susceptibility of cervical cells to persistent infections with high-risk HPV types 16 and 18 (National Cancer Institute at the National Institute of Health, 2018). Therefore, educational programmes on cervical cancer should emphasise the disadvantages of prolonged usage of oral contraceptives for birth control for over five years. It is important for women of reproductive age to have knowledge regarding the advantages and disadvantages of birth control pills in relation to cervical cancer and encourage the use of hormonal contraceptives as a safe alternative method of family planning. Condom usage is also an alternative method that prevents different sexually transmitted infections which may cause cervical cancer.

Parity is also associated with cervical cancer. Women who have had many full-term pregnancies have an increased risk of developing cervical cancer. It is established that the immune system of pregnant women might be weaker, thereby allowing for HPV infection and cancer growth (Kashyap et al., 2019; Momenimovahed & Salehiniya,

2017; Moore & Driver, 2014). Therefore, this phenomenon may apply to women of reproductive age in the Otjozondjupa region for the current study.

The next sections consider the challenges/barriers that affect the participation of women in cervical screening for the prevention and treatment of cervical cancer.

2.6 CHALLENGES/BARRIERS THAT AFFECT THE PARTICIPATION OF WOMEN IN CERVICAL CANCER PREVENTIVE INTERVENTIONS

There are some challenges or barriers that affect women's participation in cervical cancer screening, prevention, and treatment programmes. The challenges are at individual, community and institutional levels and they are described below.

2.6.1 Individual level challenges/barriers

Inadequate knowledge and lack of awareness are barriers to cervical cancer prevention. Some studies conducted in Ghana and Malawi revealed that women could not undergo cervical screening due to low levels of knowledge about the availability of cervical screening services and where to get them, the fear of a positive test outcome as a death sentence, the fear of the screening procedure and fear of the unknown, low level of income, fear of being seen as having had sexual affairs with other men and shyness especially when the procedure was performed by a male health care provider (Kei et al., 2016; Lim & Ojo, 2017; Binka et al., 2019). These studies' results indicate that women could not undergo cervical screening because of the social stigma for fear of being seen as having been diagnosed with cervical cancer, hence being dropped by their partners. This social stigma needs to be addressed through community based cervical cancer screening educational s about the dangers of cervical cancer, hence the need for cervical screening for earlier treatment and better treatment outcomes.

However, similar studies conducted in Malawi and Botswana revealed different sentiments in that a significant number of women desired to know the truth about their health status as they perceived vaginal examination as the right procedure to determine the health status of the sexual organ, which would allow them access to early treatment if diagnosed with cervical cancer (Calvahlo, 2016; Major et al., 2018). These results are encouraging in that woman need to understand the health benefits regarding cervical screening for earlier detection of pre-cancerous lesions, which would allow them access to early treatment for better outcomes.

2.6.2 Institutional-level challenges/barriers

Various health system settings are faced with serious barriers to cervical cancer prevention programmes. The unavailability of screening services remains a major barrier to women in their attempts to access screening. Some studies conducted in Zimbabwe, Ethiopia, Botswana, Malawi and Mozambique revealed that women did not attend cervical screening because they did not know the whereabouts of the screening services in the area and that healthcare facilities were overwhelmed by the clients, thus the health care workers struggled to manage the clients and this resulted in delays and long waiting hours (Maseko et al., 2015; Msyamboza et al., 2016; Major et al., 2018; Chaka et al., 2018; Makurirofa et al., 2019). The location of health care services is an important determinant factor for women's participation especially those residing in communities where there is minimal access to health care. Efforts must be made to increase awareness about the availability of screening services, and health facilities should be equipped with the necessary medical instruments and adequately trained health care workers so that women can get screening services at any level of care.

A study conducted in Ghana revealed that women did not undergo cervical screening because of factors that included concerns with their privacy when seeking healthcare services, issues related to confidentiality, the healthcare provider's unfriendly attitudes towards clients during screening, and treatment, and perceived misdiagnosis of health conditions by health personnel (Binka et al., 2019). Similar findings were reported in studies conducted in Mozambique and Iran (Moon et al., 2012). Furthermore, the findings from a similar study conducted in Malawi revealed that the majority of women could not take up screening because they faced difficulties in securing transport to health care facilities and an inability to afford transport costs (Calvahlo, 2016; Pittalis et al., 2020). Thus, policy interventions are needed to ensure that preventive healthcare services are brought to the people, especially the at-risk population, through mobile services and engaging non-governmental organisational services that are active in the community.

Studies on barriers to cervical cancer screening and treatment conducted in Malawi, Kenya and Mozambique revealed that the majority of women who tested VIA positive and were eligible for cryotherapy could not be treated because health care centres were out of stock of gas, faulty or broken cryotherapy machines, and/or an absence of cryotherapy in the whole district. More importantly, treatment facilities were only available at the district health facilities and national referral centres, thus the majority of women could not afford transport costs to access the services (Moon et al., 2012; Khozaim et al., 2014; Msyamboza et al., 2016). This undermined the purpose of the "screen and treat" approach using VIA as the method of screening. As a result, women are still subjected to multiple visits that require financial security. Thus, VIA is the only preferred choice for cervical screening so as to avoid multiple visits and delays

with regards to the initiation of treatment for positive pre-cancerous lesions. This process can improve the lives of women diagnosed with pre-cancerous lesions because it halts the disease before it turns into invasive cancer.

2.6.3 Community-level challenges/barriers

Community-level barriers are based on sociocultural factors such as stigma. Women who did not go for cervical cancer screening cited that once diagnosed with cervical cancer, the community would perceive them as being unfaithful to their partners (fear of stigma) (Binka et al., 2019; Pittalis et al., 2020). The authors further report that some patients/clients had to resort to traditional medicine to relieve pain while others went for divine intervention at church healing centres rather than going for cervical screening and that woman had to first obtain their husbands/male partners' approval before going for cervical screening (Binka et al., 2019). Therefore, their attendance to cervical screening services is more likely determined by the approval of their partners and their willingness to support them financially. This practice indicates a lack of awareness and health information dissemination in the communities on the availability of cervical cancer screening programmes and the benefits of early detection for better treatment outcomes. According to Major et al. (2018), some religions do not permit women to attend the screening, claiming that pastors have healed all the illnesses in their bodies. Public educational efforts should thus target religious leaders of different denominations in order to dispel the myths regarding the prevention of cervical cancer by faith only.

2.6.4 Policy-level challenges/barriers

Government policies and guidelines play a major role in the facilitation of cervical screening service delivery. Some studies conducted in Florida, USA, Ghana and

Malawi reveal that women in remote rural areas could not attend cervical screening due to the costs that are incurred to reach the centres for screening (Ebu et al., 2015; Msyamboza et al., 2016; IARC, 2019). Governments' policies should make preventive programmes free of charge and easily available in all health care facilities for women to access them conveniently. In Namibia, preventive programmes are offered free of charge to all eligible clients, including cervical cancer screening programmes for the prevention and treatment of cervical cancer. However, cervical screening services (VIA) should be made available at all levels of care, including clinics and health centres in all regions of the country. This would require adequately trained healthcare workers, as well as improved facilities and equipment.

2.6 SUMMARY

This chapter presented a review of literature about the knowledge, attitudes, and practices regarding the screening, prevention, and treatment of cervical cancer among women of reproductive age. The chapter presented the global impacts, incidences and overview of screening approaches and practices, the risk factors of cervical cancer, preventive methods, challenges, and barriers of cervical cancer. Since it is well established that satisfaction is a predictor of compliance (uptake of cervical cancer), it is important to examine ways of increasing women's satisfaction with cervical cancer screening, prevention, and treatment service provision.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1 INTRODUCTION

The previous chapter presented a review of the literature and other studies related to this study. This chapter presents the research approach, design and methods used in the development of an educational programme to facilitate the improvement of knowledge, attitudes, and practices on screening, prevention, and treatment of cervical cancer in the Otjozondjupa region. The chapter also discusses the study population, sample and sampling technique, research instruments, procedures used to gather data and also the analysis as well as ethical considerations.

3.2 RESEARCH DESIGN

A research design is an overall plan for gathering data in a research study. A research design can also be described as a systematic approach that a researcher uses to conduct a scientific study (Mouton, 2014). It provides the logical structure that guides the researcher to address a research problem and find answers to research questions (Creswell, 2014). In the present study, the researcher applied the quantitative approach with a descriptive research design to address the aim and specific objectives of the study. A quantitative approach is a formal, objective, and systematic process for obtaining quantifiable information about the variables of a study. It seeks to identify, measure, and evaluate phenomena and provide rationale explanations for them with the belief that the study of human behaviour or social phenomenon should be conducted in the same way as studies conducted in the natural or physical sciences (Onwubere & Esiri, 2012; Kobus, 2014). The researcher opted for the quantitative

approach because the results of the study need to be quantifiable, reliable, and able to examine cause-and-effect relationships, which would be attained when using a quantitative approach.

The quantitative approach was also used to compare the consistency of responses as well as to make inferences about the selected sample. The use of the quantitative approach enabled the researcher to determine the association between variables as well as where the association exists, with a significance of < p-value 0.05. The results are presented in a numerical form and quantified, hence the use of statistics to analyse the collected data.

3.2.1 Descriptive design

A descriptive study design attempts to describe a situation, problem, phenomenon, service, or programme in a systematic way, and it provides information and describes attitudes towards an issue as it exists at the present. Descriptive research provides an accurate account of the characteristics of particular individuals, situations, or groups as they exist at present (Grove et al., 2015; Kothari & Garg, 2015). In this study, the researcher was able to describe the knowledge, attitudes, and practices regarding screening, prevention, and practices on cervical cancer among reproductive aged women in the Otjozondjupa region. Descriptive statistics were used to present discrete and categorical variables in the form of the mean, median and standard deviation. Finally, the researcher drew on the descriptive design to describe the relationships between the variables used in this study. A cross sectional survey design measures the phenomenon under study at a specific period (Des Vos et al., 2017). In this study, the researcher collected data between 3 July 2019 and 15 September 2019, to examine the

current knowledge, attitudes, and practices among reproductive aged women on the screening, prevention, and practices of cervical cancer.

3.3 RESEARCH METHODS

A research method informs readers about the plan or proposal to conduct the research, involving the designs and methods of data collection used in a study (Polit & Beck, 2017; Creswell & Creswell, 2018).

3.3.1 Phase 1

Phase 1 of this study covered the situational analysis that assessed and determined the knowledge, attitudes, and practices among reproductive aged women to cervical screening, prevention, and treatment of cervical cancer in the Otjozondjupa region.

- 3.3.1.1 Study population

A study population is defined as an entire set of individuals in the universe who possess a specific common characteristic (Grove et al., 2015; Polit & Beck, 2017). It is a group of people which is the focus of the research study. The target population under study was all reproductive aged women (18 – 49 years) who sought medical care at health centres and clinics at the time of data collection. The total population comprised all reproductive aged women who are eligible and met the inclusion criteria. There were 37 066 women of reproductive age in the Otjozondjupa region that were eligible for this study as illustrated in Table 3.1. Table 3.1 indicates the composition of the study population per district and the proportional distribution in each study area.

- 3.3.1.2 Sample of the study

A sample is a subset of the population that is selected to represent the population (Grove et al., 2015; Creswell & Creswell, 2018). The aim of sampling is to get a selected set that is as representative as possible of the target population. A sample is a subset of the population. Individual units of a sample and population are called elements. Elements can be in any form such as humans and events. The researcher works with samples rather than the entire population. Representative samples have all the characteristics of the population. The sample is drawn from the population that the researcher can access at the time of the study. However, the results of the study are initially generalised to the accessible population rather than to the entire population in similar settings provided the sample was representative of the population (Grove et al., 2015; Polit & Beck, 2017). In this study, the population is divided into four strata representing four districts in the Otjozondjupa region, which are Grootfontein, 10506 (107); Okahandja, 7230 (76); Okakarara, 6117 (65) and Otjiwarongo, 13213 (133), and the sample was proportionally distributed for each stratum.

A sample power calculation was done using the Rao software programme to determine the representative sample in this study. The calculation was made from the target population of 37 066 women of reproductive age, considering the 95% confidence interval and confidence limit of 0.05%. The calculated sample is n = 381 (Table 3.1 below).

The formula for proportional distribution of sample size per district population:

= Population of the district/total population of all districts X calculated study sample size (381). This is indicated in Table 3.1.

3. Table 3.1 Population of women of reproductive age in Otjozondjupa region (as of 2016)

District	Population of women	Proportional sample size
Grootfontein	10506	108
Okahandja	7230	74
Okakarara	6117	63
Otjiwarongo	13213	136
Region	37066	381

Source: MoHSS, 2015/16 Annual report.

- 3.3.1.3 Sampling method

The sampling theory was developed to suggest ways of drawing "scientific" samples that are random and representative of the population and whose results can describe the population in general (Kobus, 2014). A sampling method is a procedure by which the sample of units is selected from the population to represent the study population (De Vos et al., 2017). In this study, the four districts in the Otjozondjupa region, namely Otjiwarongo, Okahandja, Okakarara, and Grootfontein were treated as strata. Stratified sampling is a probability sampling procedure in which the target population is first separated into mutually exclusive and homogeneous segments (strata), and then a proportional simple random sample is selected from each segment (stratum) (Creswell & Creswell, 2018). In this study, a probability, proportionate multistage stratified random sampling method was used. Stratified random sampling provides for the representation of a particular segment of the population. The districts were divided into four strata so that each element of the population would belong to a stratum (Table 3.1). Stage 1: All four districts were included in the study as strata. Stage 2: All health centres (3) and clinics (15) were selected for the study. Stage 3: in each stratum, a simple random sampling technique was used to select the health centres and clinics. A total of three health centres and nine clinics were randomly selected and included in

the study. At each health facility a proportional, random selection of respondents was performed. A total of 90 respondents were randomly selected from the health centres and a total of 291 respondents were randomly selected from the clinics, all that summed up to a total of 394 respondents (Table 1.1 Page; Table 3.1 Page 74).

Inclusion criteria: All women who met the following criteria were included in the study: Being a female aged 18 - 49 years, in search of healthcare services of any kind at the selected site, able to participate in the study (measurement scales that measure specific constructs such as verbal, social, behaviour, physical appearance), and be from the catchment area of the site under study and be willing to participate in the study voluntarily (Jensen, 1998).

Exclusion criteria: All women of reproductive age who were physically and mentally challenged, for example, mentally retarded clients, psychiatric patients, girls under 18 years of age, women aged 50 years and above and women residing outside the catchment area under study. Women aged 50 years and above were left out as per the MoHSS targeted women for cervical cancer screening (The Namibia Cervical Cancer Prevention and Treatment Guidelines, 2018).

- 3.3.1.4 Instrument of data collection

Research instruments are devices that are used to collect data. These can be in the form of a questionnaire, a test, and an observation schedule. It is also considered to be an objective way of collecting information. The collection of data is a vital component in the production of useful data for analysis. It involves designing or choosing specific techniques to be used in data collection (Grove et al., 2015; Creswell, 2018). The authors further state that a questionnaire is a form containing a set of questions,

especially one addressed to a statistically significant number of subjects as a way of collecting information from a survey. Questionnaire based data collection is thus a technique that is used for the collecting of information about the characteristic behaviours and attitudes of a population by administering a standardised questionnaire to a sample of individuals (Kothari, 2016).

Administering a questionnaire is a quick and practical way of collecting data which enables researchers to collect information from many people in a relatively cost-effective way (Kothari & Garg, 2015). In this study, a self-administered and researcher administered questionnaire was used. The researcher adapted a questionnaire from the literature, and this was reviewed by experts and used as a tool for quantitative data collection from the reproductive aged women on the knowledge, attitudes, and practices regarding cervical screening, as well as the prevention and treatment of cervical cancer. Furthermore, the content of the questionnaire was also based on the information from the related reviewed literature. The use of a questionnaire as a data collection tool has multiple advantages for the researcher. In this study, the questionnaire helped the researcher to maintain objectivity and avoid intrusive bias and personal influences throughout the process of data collection. It also assisted the researcher to collect the desired amounts of information in a reasonable period and in a relatively cost-effective way. However, a questionnaire gives a biased sample. The matter of non-response and/or missing data is always a big question mark and this was reported on.

The questionnaire contained various sections and they are described as follows: Section A presented data on the following variables: age of the respondents, marital status, educational level, employment status, home language, length of stay in the area

and number of pregnancies. Section B presented the study variables on women's knowledge regarding the screening, prevention, and treatment of cervical cancer. Section C presented the study variables on the attitude of women regarding the screening, prevention, and treatment of cervical cancer and Section D presented the study variables on the practices of women regarding the screening, prevention, and treatment of cervical cancer. The questionnaire was divided into the following sub-sections as described in Table: 3.2.

4. Table 3.2 Sections in the study questionnaire

Section A: Demographic data	Presentation of study results focusing on the demographic data of respondents, and they are as follows: • Age • Marital status • Educational level • Employment status • Home language • Length of stay in the areas • Number of pregnancies
Section B: Knowledge regarding screening, prevention, and treatment of CC	This section presents study variables focusing on knowledge regarding the screening, prevention, and treatment of CC. The section is divided into sub-sections, and these are outlined below.
	Sub-section 1: General knowledge regarding the prevention of CC focusing on the following variables: • Prevention measures for CC • Types of CC • Symptoms of CC • Sources of information on CC Sub-section 2: Knowledge regarding the screening of CC focusing on the following variables: • Availability of CC screening services • Indications of cervical cancer screening Sub-section 3: Knowledge regarding the treatment of CC focusing on the following variables: • Types of CC treatment

Section C: Attitude regarding the screening, prevention and treatment of CC	This section presents study variables focusing on the attitude as outlined below: • Psycho-social influences on the prevention of CC • Psycho-social influences on screening • Cultural beliefs on screening of CC • Factors that influence CC screening • Willingness to be screened for CC (Pap smear test) • Economic factors that influence CC screening uptake • Attitude regarding screening and chances of recovery when CC is detected early
Section D: Practices regarding the screening, prevention, and treatment of CC	This section presents study variables focusing on the practices outlined below: 5. Practices regarding the prevention of CC • HPV vaccination for CC prevention • Smoking tobacco products • Having a steady sexual partner • Usage of oral contraceptives > 5years • Frequencies of oral contraceptives 2. Practices regarding the screening of CC • Uptake of CC screening (Pap smear test) 3. Practices regarding the treatment of CC: • Curability of CC

Most of the questions used in the questionnaire were closed-ended questions, which enabled the researcher to compare responses to each item used in the variables. A few questions had fixed responses of yes or no, while most questions were closed ended with Likert scale ratings of 1: Strongly agree, 2: Agree, 3: Neutral, 4: Disagree, 5: Strongly disagree and 6: Do Not Know indicated in the columns. A Likert scale measures an ordinal variable with response options: “Strongly agree,” “Agree,” ‘Neutral,” “Disagree,” and “Strongly disagree”. The scale assigns a numerical value to the intensity or neutrality of emotion about the specific statement or topic and then attempts to standardise these response categories to provide an interpretation of the relative intensity of items on the scale (Kothari & Garg, 2015; Polit & Beck 2017).

The questionnaire, as a research data collection instrument, was used for the following reasons: to ensure that anonymity is maintained because subjects' names are not required on the data collection tool; the collection of information from many people in a relatively cost-effective way (rapidly), ensured anonymity and has greater validity. However, the questionnaire also has some disadvantages and one of the major limitations of the questionnaire is that it can only be utilised by those respondents who have a considerable amount of education. Moreover, it cannot be used on illiterate and semi-literate persons. It may also yield a poor response rate, incomplete entries, and illegibility of respondents' handwriting (Kothari & Garg, 2015).

- 3.3.1.5 Data collection

The researcher obtained access to the research sites through the site managers. The respondents were accessed in the waiting area as they came for various services. The researcher explained the purpose and objectives of the study to the respondents in the waiting room at each site. The researcher introduced and explained the contents of the consent form to the respondents, emphasising their rights to participation and that participation is voluntary. The researcher also explained the rights of the respondents to withdraw from the study at any time without any punishment. The real names of the respondents were not used on the questionnaire, but a code was used instead, to ensure their anonymity in the study. The researcher explained to the respondents that the information being collected would not be shared with any other persons except the researcher, and that it would only be used for study purposes only. To ensure confidentiality in this study, all questionnaires were kept in the office of the researcher, in a locked cabinet and the researcher was the only person who had access to the records for the duration of the study. The purpose of addressing the issue of

confidentiality was to build up trusted the relationship between the researcher and the respondents, thus encouraging them to provide information freely.

The researcher issued the consent form to each respondent at each site of data collection for signature. After the respondents had signed the consent form, the researcher then distributed the questionnaires to the respondents to answer the questions. The researcher requested the respondents to complete the questionnaires by answering all the questions and indicating their level of agreement with a statement using a close-ended 5 level Likert scale rating and yes or no to dichotomous questions.

A room was arranged and used at each facility for the respondents who chose to participate voluntarily to complete the questionnaires. The questionnaire was designed as a self-administered and researcher administered one and the researcher was available in the room to answer or clarify any questions that could have come up from the respondents. The researcher had to conduct face to face interviews with respondents who could not read and write and the researcher-maintained objectivity during the data collection process. Kobus (2014) states that this is likely the result of inadequate or lack of cervical screening services for that face-to-face interview requires that the researcher or an interviewer asks the respondents questions that are contained in the questionnaire and the respondents are expected to respond by answering the questions. According to Maree (2016), a structured questionnaire enables the researchers and respondents to share the same theoretical frame of reference and interpret the words, phrases and concepts used in the same way. The researcher remained present throughout the process of data collection at the participating healthcare facilities. To ensure anonymity in the study, the researcher

prepared a box at each site and the respondents were requested to put the completed questionnaire in the box.

Though the questionnaire was only prepared in English, the researcher is conversant with most local languages such as Oshiwambo, Herero and Afrikaans that are spoken at the study sites. The data collection process lasted for three months, starting from 3 July 2019 and it ended on 15 September 2019. The researcher went through all the questionnaires administered each day and checked each one through for possible errors or incompleteness of information. It took 30 to 35 minutes to complete the questionnaire. The questionnaire was designed in such a way as to answer the first objective of the study [Page 16].

- 3.3.1.6 Piloting the data collection instrument

According to Nangombe (2016) and Mouton (2014), pilot testing refers to a small-scale version of a full-scale study that seeks to pre-test the appropriateness of a particular research instrument such as a questionnaire or interview guide. De Vos et al. (2017) explain further that the main purpose of pilot testing is to determine whether the methodology, sampling, instrument, and analysis methods are adequate and appropriate. It is therefore vital for the researcher to ensure that the language used in the questionnaire is clear and understandable, with the layout of the questionnaire being user-friendly and easy to read. In addition, the researcher measured the amount of time it would take to complete the questionnaire.

This researcher pre-tested the questionnaire at one of the clinics in the study area, which was not included among the randomly selected study sites. The researcher explained the following to the respondents while in the waiting room at the site: the

purpose and objectives of the study, that participation in the study is voluntary and the participant's right to withdraw from the study without any penalty. A consent form was explained, and it was also explained that one was expected to sign the form as an indication that the respondent agreed to voluntary participation. To ensure anonymity, the respondents were informed that their names were not needed to be indicated on the questionnaire and as such, codes were used instead. The researcher also explained that the data collected would be kept confidential in a locked cabinet in the researcher's office and that only the researcher would have access to it. The questionnaires were then handed out to the volunteered respondents for them to complete. A total of 38 respondents (10% of the study sample) at Okarundu clinic participated in the pilot testing. The purpose was to assess if there were any questionnaire design problems that could lead to the ambiguity of words, misinterpretation of questions, inability to answer a question and the time required to complete the questionnaire. The researcher then revised and modified the questionnaire according to the feedback and made the necessary adjustments. Areas that were modified included the focus on the age bracket, which initially included the 15 – 49 years that was modified to 18 – 49 years because 18 years is the legal age to consent for participating in a research study. A 15- year-old female would require parental consent to participate in the cervical cancer prevention programme, e.g., screening. The column "Do not Know" was included because there were some respondents in the pilot testing who indicated that they "do not know" in some of the questions. Sensitive questions such as "are you sexually active?" were rephrased since these had the potential to cause undue harm to the respondents. The researcher then reorganised the questionnaire which was used to collect data in the main study.

- 3.3.1.7 Validity and reliability of the instrument

Validity is the degree to which a test measures what it is supposed to measure and consequently, permits appropriate interpretations of test scores. Validity also implies that the research measures the outcome it is intended to measure (Kothari, 2016).

3.3.1.7.1 Validity

(i) Internal validity is the extent to which the effects detected in the study are a true reflection of reality rather than the result of extraneous variables (Mouton, 2014; Grove et al., 2015). Different research books, research journals and articles, and different study questionnaires were reviewed to inform the development of this study's data collection instrument, which increased internal validity (Touch & Oh, 2018; Creswell & Creswell, 2018; Makurirofa et al., 2019).

(ii) External validity or generalisability is concerned with the extent to which the study findings can be generalised beyond the sample used in the study (Kobus, 2014; Grove et al., 2015). The study sample size in the study population was set at 95% confidence intervals or a confidence limit of 5%, thus it was a representative sample to draw conclusions from so as to generalise the study findings to the general population of the study.

(iii) Content validity refers to an assessment of how well the research instrument represents all components of variables that are intended to be measured (Brink et al., 2018). This study measured the knowledge, attitudes, and practices of reproductive aged women to cervical screening, prevention, and treatment of cervical cancer. The researcher reviewed recent journal articles

and questionnaires related to cervical cancer, to identify important aspects that need to be included in the questionnaire to measure the phenomenon understudy ((WHO; Makurirofa et al., 2019). The questionnaire was reviewed by an expert in the oncology unit and then it was presented to the researcher's academic supervisors to verify the content before data collection.

(iv) Face validity refers to the extent to which an instrument measures what it claims to measure based on face value (Creswell & Creswell, 2018). It ensures that the content is readable and clear to the reader. The study supervisors and an expert from the oncology department reviewed the questionnaire and they deemed the questionnaire to be valid purely at face value.

(v) Construct validity

Construct validity measures the relationship between an instrument and the related theory (Grove et al., 2015; Creswell & Creswell, 2018). It measures if the set of items used in the instruments faithfully represents the set of aspects of a theoretical construct and does not contain items which represent aspects not included in the theoretical construct. The researcher adopted the Meyer and Van Niekerk theory (2008) to measure women of reproductive age's knowledge, attitudes and practice regarding the prevention, screening, and treatment of cervical cancer through situational analysis.

3.3.1.7.2 Reliability

Brink et al. (2018) depict reliability as the degree to which different methods or people would arrive at the same study results. Reliability is the extent to which results are

consistent over time and are an accurate representation of the total population under study. Reliability is influenced mostly by random errors such as inaccurate coding being detected and eliminated through pre-testing the instrument and this is done when the instrument is being drafted (Pandey & Pandey, 2015). In this study, a pilot study was conducted to test and correct the ambiguity of questions to determine the consistency of the instrument. This pilot study ensured the reliability of the data collection tool. A Coefficient Cronbach's alpha test was calculated to evaluate the internal consistency and reliability of the instrument. The results of Cronbach's coefficient alpha test are illustrated in Table 3.3.

6. Table 3.3 Reliability Scales

Variable	Number of Items	Cronbach Alpha
Knowledge questions		
General knowledge of Cervical Cancer	10	.831
Symptoms of Cervical Cancer	12	.828
Factors Associated with Cervical Cancer	9	.854
Prevention of Cervical Cancer	15	.902
Attitude questions		
Psych-social influences on Cervical Cancer	9	.865

Cultural beliefs' influence on Cervical Cancer	5	.573

Table 3.3 indicates the reliability scales (Cronbach's coefficient alpha) test results. The Cronbach's coefficient alpha is a test that is used to determine the reliability of items in a questionnaire. According to Cronbach (1951) and Cortina (1993), alpha estimates the degree of interrelatedness among a set of items and variance among the items with the widely advocated level of adequacy for coefficient alpha being at least 0.7. The analysis of the questionnaire in this study gave alpha values between .828 and .902 for all knowledge items. The attitude variables gave a value of .865 for psycho-social factors, except the cultural beliefs variable which was .573. Cortina (1993) further states that coefficient alpha test value scores of below 0.60 are acceptable as they are considered moderate. The research instrument was deemed reliable and consistent based on Cronbach's coefficient alpha test (Cronbach, 1951). It can be stated that the tool measured what it had intended to measure and produced reliable data that could be applied in any healthcare facility context in similar situations.

3.3.1.7.8 Data management and analysis

The completed questionnaires were cleaned and edited before data entry. All data were coded with an alphanumerical value and then entered into the data base. A data entry sheet was created using Microsoft excel to capture the data and then transported into the statistical package for social science (SPSS) version 25. Data purification was done before analysis by checking completeness, verifying random samples of the electronic data against the original data, and running frequencies, and a means and standard deviations to detect errors and anomalous values. Descriptive statistics were used to measure the means, median and standard deviation. Frequency distribution,

proportions, percentage tables, figures and graphs were used to present demographics, knowledge, attitudes, and practices. The p-value of the Chi-squared tests was set at a 95% confidence interval. In all analyses, a p-value less than < 0.05% was considered statistically significant. Pearson correlations (r) were used to determine the associations between dependent and independent study variables.

3.3.2 Phase 2: Conceptual Framework

Phase 2 objective was to describe a conceptual framework for the development of an educational programme to enhance the utilisation of cervical cancer services among women of reproductive age in the Otjozondjupa region.

Phase two was concerned with the development of a conceptual framework to answer objective two of the study. The development of a conceptual framework was informed by the results from objective one of the study. The practice-oriented theory of Dickoff, James and Wiedenbach (1968) was adopted to conceptualise the results of the study. Dickoff et al., (1968)'s practice-oriented theory specified the activities that are essential in the conceptualisation process. The theory prescribes the activities that are required to reach pre-determined goals and to envisage the outcomes of the interventions.

Dickoff et al., (1968) define a conceptual framework as a structure which guides the development of a programme and that enables a researcher to relate the results of a study to the existing body of knowledge. A conceptual framework is also defined as a cognitive map that represents any visual representation of a person's (or a group's) mental model for a given process or concept (Sara, 2019). According to Dickoff et al., (1968), a survey list includes six components which describe the process that is

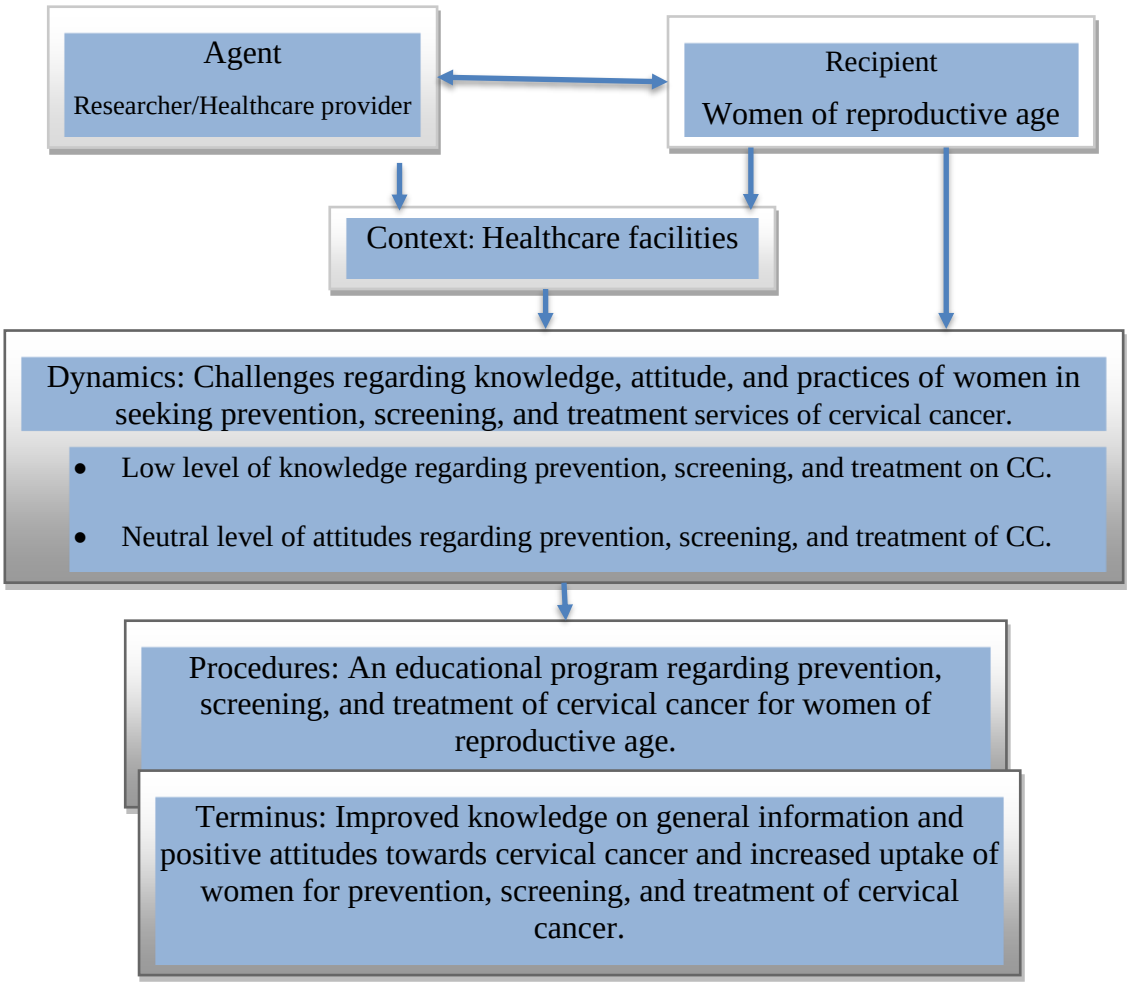
followed to develop an educational programme that aims at the attainment of the study goals.

According to Dickoff et al., (1968), a survey list relates to six elements that have to be considered when developing an educational programme, and this aids in realising the desired goal. The elements are as follows: agent (the one who is to perform the activities involved in the programme); recipient (the one who is to receive the activities from the agent); context (within which the learning takes place); procedure (the guiding procedure, technique or protocol of the activity), dynamics (the energy sources or motivation for the programme activities which are vital to the agent – recipient interaction and facilitation process) and terminus (which conclude the discussion on the conceptual framework with regards to the desired outcomes of the programme interventions. In this study, the researcher adopted and applied the above mentioned six elements to develop the conceptual framework in this study.

The application of the six elements in the study was as follows: the agent (the researcher); recipient (women of reproductive age); context (healthcare facilities); procedure (educational programme activities), dynamics (the dynamics identified in the situational analysis, and terminus (outcome of the educational programme intervention). The researcher also created a cognitive map that denotes the structure of Dickoff et al.,'s (1968) concepts from the practice-oriented theory in developing an educational that is aimed at improving the knowledge, attitudes and practices of reproductive aged women on the screening, prevention, screening, and treatment of cervical cancer.

- 3.3.2.1 The researcher's cognitive map

A cognitive map is a visual representation of a person's (or a group's) mental model for a given process or concept (Gibbons, 2019). The cognitive map explains the interactions of the six elements as per Dickoff at al.,'s (1968) survey list. In this study, the hierarchical representation of the cognitive map consisted of the following elements: Agent (researcher as a health care provider, programme facilitator), recipients (women of reproductive age, as beneficiaries of the programme), context (healthcare facilities within which educational activities take place), dynamics of the study/energy sources for the programme activities), procedures (technique or protocol of educational programme activity), and terminus (the end results/programme intervention outcome). The six elements explained above provided the framework for the development of an educational programme for women of reproductive age on the screening, prevention, and treatment of cervical cancer. The individual applicability of the Dickoff et al.,'s (1968) six survey elements to this study is described in the next sections. The cognitive map developed for this study is illustrated in Figure 3.1 below.



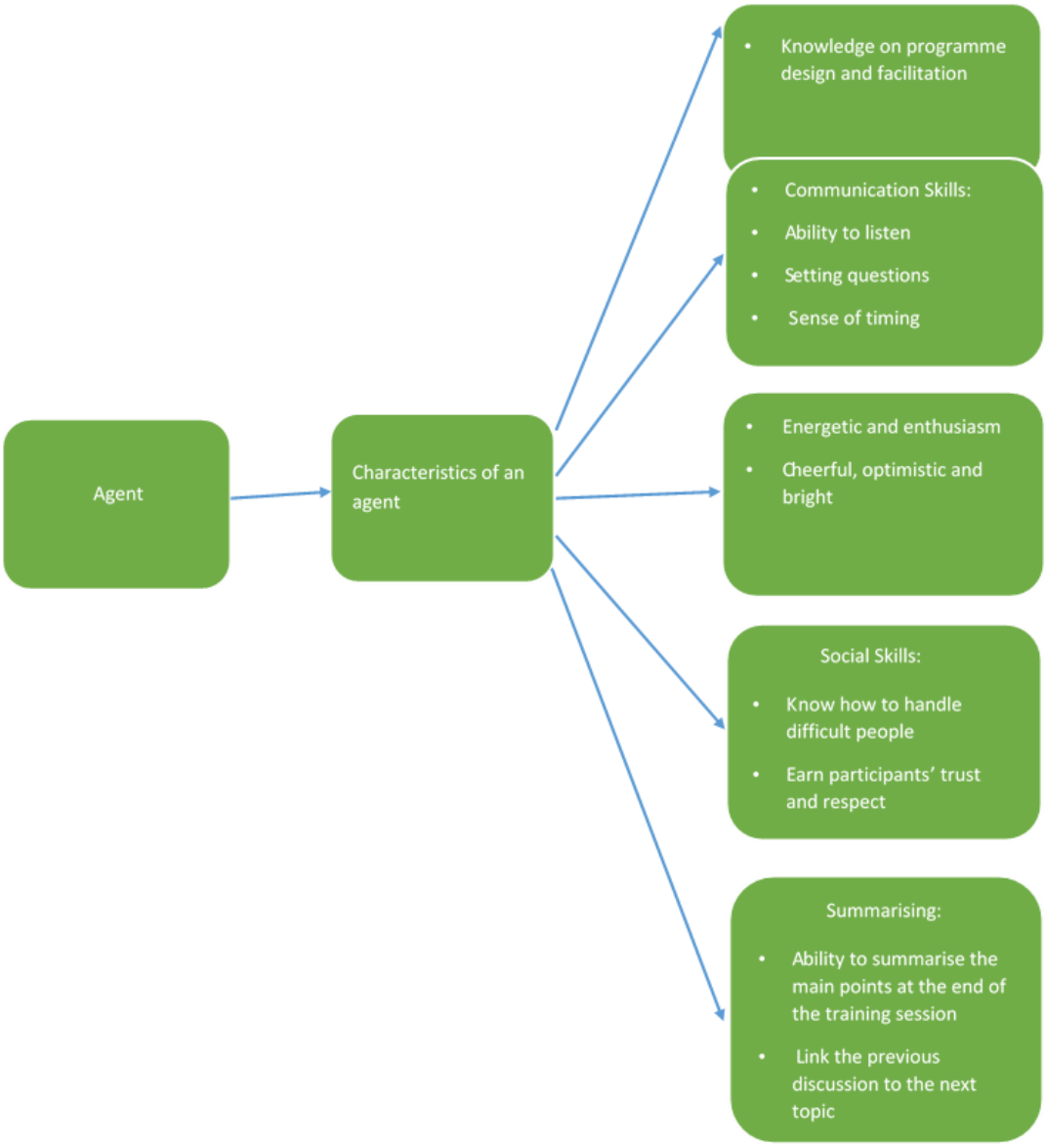
7. Figure 3.1: The cognitive map

❖ Agent: Researcher as a programme facilitator/educator

According to Dickoff et al., (1968), the agent is the main focal person in programme development and is responsible for planning, coordination, and implementation. The agent in this study referred to the researcher who played a pivotal role in facilitating the design and development of an educational programme on the prevention, screening, and treatment for women of reproductive age on cervical cancer at the health facilities. An agent must have or be able to develop certain character traits to manage, coordinate and implement an educational programme.

- The characteristics of an agent resources as the prerequisites for a successful facilitation of programme development, implementation, and evaluation of programme activities.

The agent should be able to design, plan, implement, monitor, and evaluate the educational programme for women on the prevention, screening, and treatment of cervical cancer. In addition, the agent must be a good mediator and mentor. Therefore, the agent should possess the following character traits that were observed in this study as indicated in Figure 3.2 below.



8. Figure 3.1 Characteristics of an agent

- Knowledgeable on programme designing and facilitation

An agent needs to possess the knowledge of the subject matter or activities to be carried out, which in this study is the development and implementation of an educational programme. For the purpose of this study, the agent is a researcher or may be any professional health worker who has the required knowledge and experience to facilitate and promote active learning through the development, implementation, and evaluation of an educational programme to empower women of reproductive age on

the prevention, screening and treatment of cervical cancer. Knowledge refers to the information and understanding that a person has on something or possesses to do something (Online Dictionary, 2020). A mastery of knowledge refers to the state of being competent in the execution of tasks or activities, and this mastery should be a prerequisite for the programme success (Glanz et al., 2015). The required critical skill of facilitation involves sensing people's feelings and understanding how to respond to a particular situation during the implementation sessions (Gospe, 2016). Therefore, an effective facilitator (agent) always employs a variety of teaching methods and uses learning aids that help the recipients to learn while still keeping an eye on the attainment of the programme's goal.

Knowledge goes hand in hand with competence. Here, competence refers to the state of being knowledgeable and being skilful in a certain activity (Webster, n.d.). A competent agent has the ability to listen and empathise with the clients during facilitation sessions (Gospe, 2016). The agent (researcher) obtained knowledge about the challenges that women of reproductive age are facing with regards to the prevention, screening, and treatment of cervical cancer from the research findings. The agent (programme facilitator) is knowledgeable and competent in the activities to be carried out during the implementation of the educational programme to empower women of reproductive age on the prevention, screening, and treatment of cervical cancer.

- Communication skills

Communication is the ability to transfer or share ideas and feelings effectively with others (Hornby, 2015). It is the act of giving, receiving, and sharing information

through talking or writing, and listening or reading. Good communicators listen carefully, speak or write clearly, and respect different opinions (Gospe, 2016). An agent (researcher) needs to communicate both verbally and non-verbally in an effective way to educate the participants (recipients) of the educational programme. An agent needs to be aware of his non-verbal communication during programme facilitation.

The body language, eye contact, hand gestures, and tone of voice, influence the message being conveyed. An agent should try to maintain eye contact so as to observe non-communication messages from the recipients and communicate in a friendly tone of voice, as this encourages the recipients to speak openly (Doyle, 2016). An effective agent possesses good interpersonal relationships with recipients to facilitate the successful implementation of the programme. Effective communication constitutes of certain skills that include the ability to listen, sense of timing, questioning, social skills, energy and enthusiasm and summarising.

- Ability to listen

One way through which the facilitator learns to sense the feelings of individuals is by acute listening, both to the explicit meaning of words and to the tone and implicit meaning. An effective facilitator practices “active listening” whereby he or she may repeat, sum up, question or respond directly to what is said so as to ensure that the message was correctly understood by the recipients (Gospe, 2016). Besides being an active listener, an agent, as a facilitator, has to speak clearly, and convey a message using short and understandable sentences while providing adequate information to the recipients (Doyle, 2016).

- Sense of timing

An effective facilitator (agent) needs to develop a sense for time. As a result, they know when it is necessary to bring a discussion to a close, change the topic and facilitation mode, cut off someone who has talked for too long, let the discussion go over the allotted time and when to let the silence continue a little longer (Mulenga, 2018). The sense of time is essential for an efficient implementation of programme activities.

- Questioning

An agent needs to know how to ask questions that stimulate recipients to think critically and learn more on the subject matter. An agent asks questions during a facilitation process in order to determine whether the recipients would have understood the messages and thus leading to the achievement of programme objectives (Mulenga, 2018).

- Social skills

One needs good social skills in order to be a successful education agent. There is also a need to handle different people, earn their trust, and effectively communicate with them.

- Energy and enthusiasm

Being energetic and enthusiastic is a pivotal quality of an effective agent because a facilitator's mood affects the mood of recipients and that makes all the difference when facilitating a session (Gospe, 2016). A dull and dismal demeanour can turn off

participants during educational sessions. In this study, the agent avoided taking on the familiar role of the traditional teacher and lead, and thus chose to be a facilitator who would be bright, cheerful, and optimistic when dealing with recipients.

- Summarising

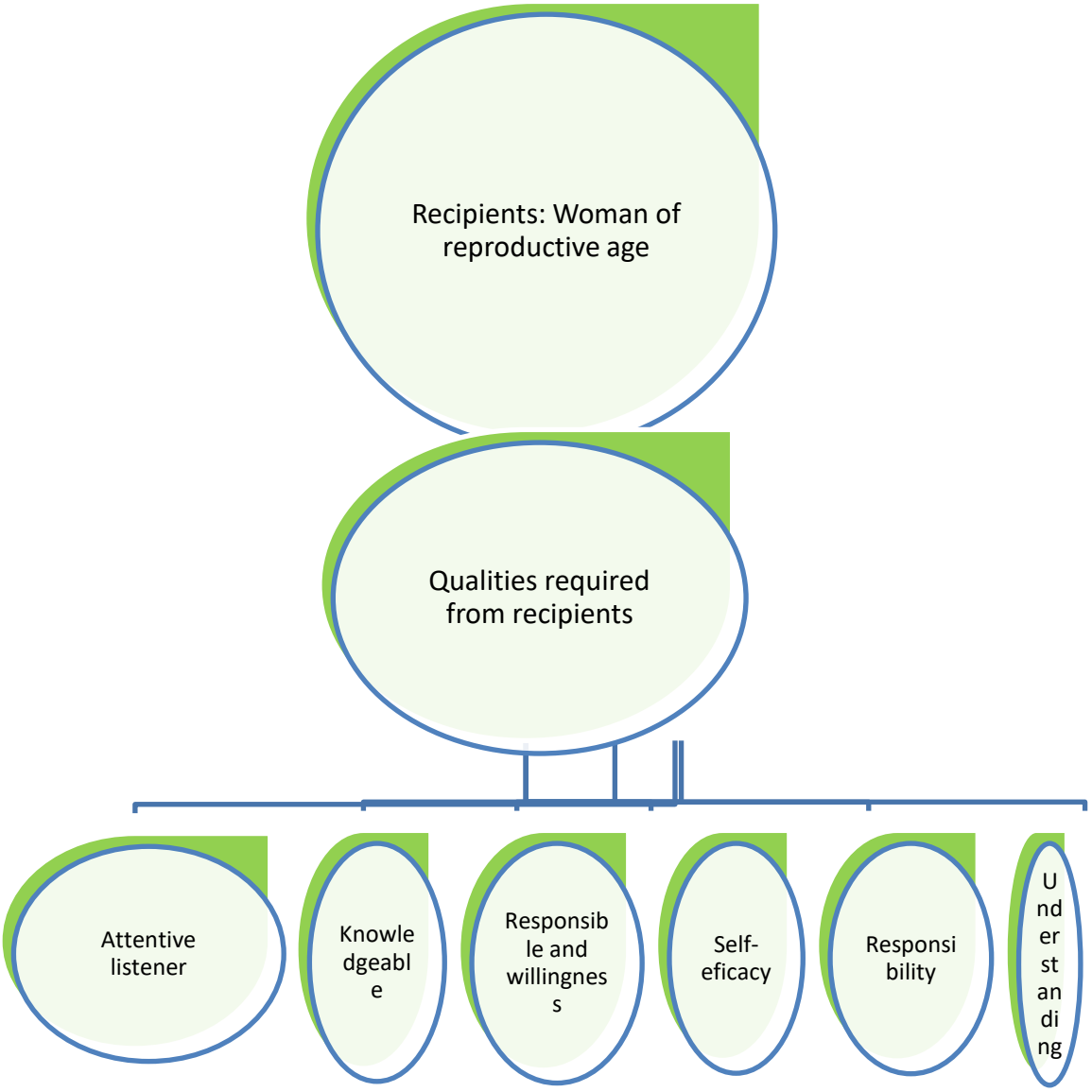
An effective agent summarises the main points discussed at the end of each session so that recipients can reflect on what was discussed and link the previous discussion with the next session. Feedback assists the recipients to remember how the topics link with each other. For this study, the main points were summarised at each session of the discussions.

❖ The recipient

Dickoff et al., (1968) describe the second element of the survey list as the recipient. A recipient is a person who receives something from someone to realise a goal or a desired outcome (Dickoff et al., 1968). The recipients in this study were women of reproductive age who would be empowered with the knowledge on the prevention, screening, and treatment of cervical cancer, thus, increasing the uptake of cervical screening for cervical cancer prevention and increasing the chance of recovery when cervical cancer is detected early. Thus, the discussion of the recipients' characteristics in this study focused on the women of reproductive age who would be the major players and beneficiaries of cervical screening for the prevention and treatment of cervical cancer. The study results revealed that women of reproductive age in the Otjozondjupa region had inadequate knowledge on the general information of cervical cancer with regards to the types of cervical cancer, the symptoms, prevention, factors associated with cervical cancer, factors influencing women for seeking cervical

screening, availability of cervical screening services, and that they possessed a negative attitude towards cervical screening. The study respondents also demonstrated a very low uptake of cervical screening for the prevention and treatment of cervical cancer.

A designed educational programme should assist women of reproductive age to gain knowledge about cervical cancer screening tests and the benefits of early detection of the illness and equipping them with information about the availability of cervical screening services in the health facilities. As such, women would develop a positive attitude towards cervical screening and thus exhibit the behaviour that is required to produce the desired outcome (Glanz et al., 2015). Figure 3.3 illustrates the qualities of the recipient.



9. Figure 3.2 Qualities required by recipients

Figure 3.3 illustrates the qualities of the recipient as the beneficiary of the educational programme. Women of reproductive age, as the individuals who are responsible for their own health and that are recipients of the procedures and actions aimed towards their empowerment, need to possess the required qualities which are described in the next section.

- The qualities of the recipients

There are qualities that are essential for the women of reproductive age to be both responsive and receptive to the knowledge on the benefits of cervical screening and thereby increased cervical cancer screening services uptake. These include being an attentive listener, knowledgeable, responsible, understanding, willing, and confident in what one does, and self-efficacy or the belief in one's own ability to change any given situation (Glanz et al., 2015). The qualities could all help in empowering women and enabling them to take preventive measures as the outcome of the educational programme. The following section describes the qualities of recipients to demonstrate their relevance and applicability to the women of reproductive age as the recipients of the educational programme that is aimed to educate and empower women to increase their knowledge to realise the benefits of cervical screening for the early detection and curability of cervical cancer.

- Attentive listener

Recipients need to listen attentively in order for them to benefit from educational activities given to them and also to avoid misunderstandings. They need to ask questions so that they can get clarity on issues being discussed if these are not clear and be able to evaluate the knowledge captured. In this study, the recipients needed to listen carefully and ask about the content being discussed so as to avoid misunderstandings and quick judgements. The respondents must also understand the importance of listening when someone is speaking or contributing to the topic under discussion, show respect and avoid interruption at all costs. Each recipient is given a chance, when required, to contribute and the views raised should be respected.

- Knowledgeable

As a recipient, being knowledgeable refers to the possession of facts and making interpretations that lead to the information being useful with regards to taking the required action or behaviour (Glanz, 2015). In this study, understanding the illness and the expected course of the illness places women of reproductive age in a better position towards realising their susceptibility to the illness (cervical cancer), and self-awareness of being at risk that would lead the women to realise the likelihood of engaging in health- promoting behaviours for better disease outcome.

- Responsible and willing

Here the recipient should have the power to make decisions and act in accordance with these decisions (Online Dictionary of English, 2020). Thus, willingness is desirable and serves as a driving force for a person to engage in the recommended action or positive behaviour. Therefore, once women gain knowledge on cervical screening, prevention, and treatment benefits, they would be willing to adopt positive attributes, and health seeking behaviour attitudes, and be prepared to take the required behaviour to prevent cervical cancer. The desire to perform and the actual performance of the activities would result in the next quality, that is, self-efficacy.

- Self-efficacy

Self-efficacy refers to a person's conviction that one can successfully execute the behaviour that is required to produce the desired outcomes, even in the face of obstacles (Bandura, 1977). For the purposes of this study, self-efficacy refers to the women's judgement and belief in their ability to master the knowledge on cervical

cancer preventive measures, that are necessary for them to uptake cervical screening services.

- Responsibility

Responsibility denotes a duty that a person has to do (Online Dictionary of English, 2020). In this study, women have a duty towards individual availability and accountability towards educational programmes for the benefit of cervical screening. Therefore, women are responsible for their own health and meeting the demand to engage in the recommended behaviour.

- Understanding

Understanding refers to the state of being kind and sympathetic towards someone who has problems (Online Dictionary of English, 2020). In this study, women of reproductive age are expected to understand the nature and complexity of cervical cancer and its devastating effects on themselves, and thus demand the acknowledgement of their responsibility to do something about it for a better outcome (terminus).

❖ Context of the study

The third aspect of the practice orientated theory described by Dickoff et al., (1968), is the context. According to Dickoff et al., (1968), a context is a situation, a framework or a setting in which the activities are presented in relation to the recipients, dynamics and the procedures or interventions that are aimed at realising the goal. For the purpose of this study, the context is the healthcare facilities that are providing primary health care services in the Otjozondjupa region. The MoHSS categorises healthcare facilities

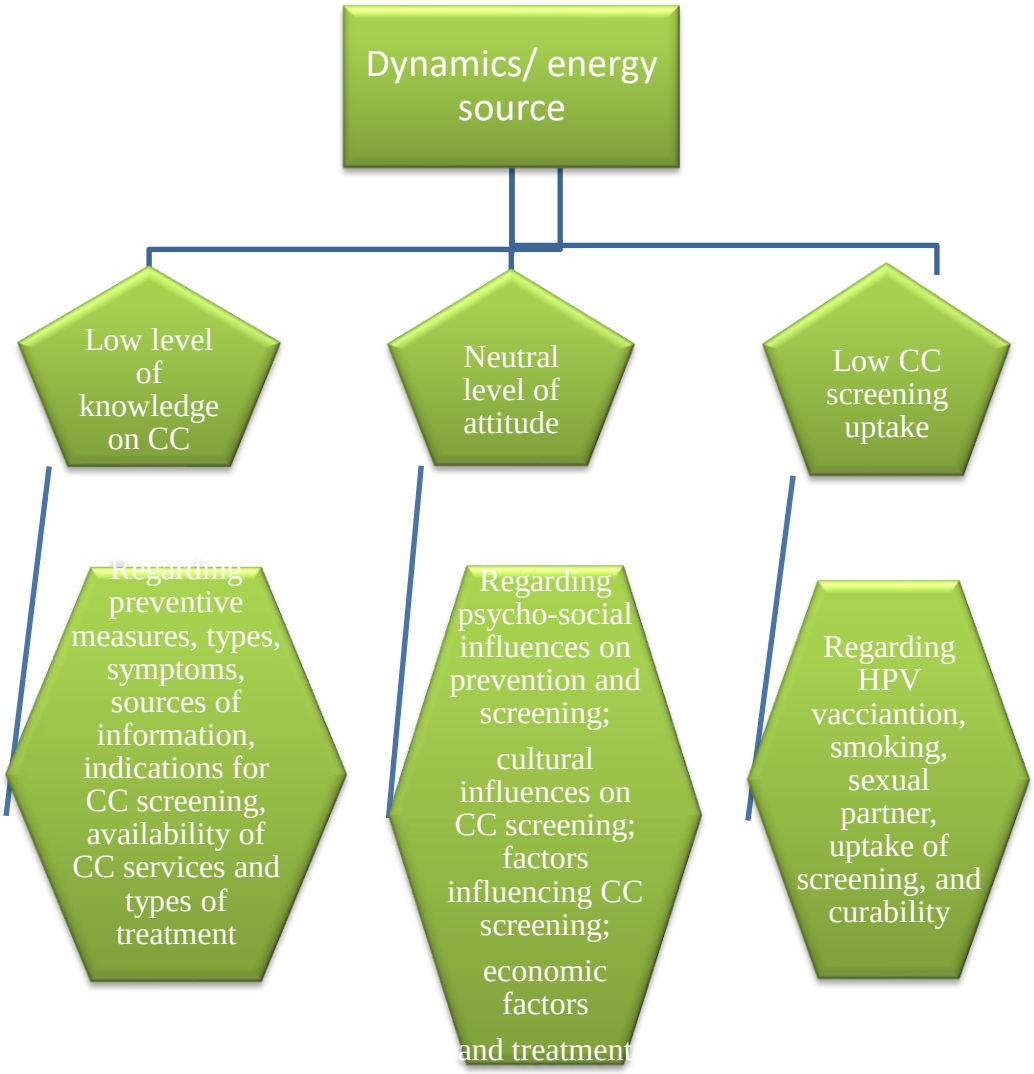
according to a specific level of care and service delivery. The Otjozondjupa region consists of four (4) districts, namely, Otjiwarongo, Okahandja, Grootfontein and Okakarara. Each district has a district hospital and primary healthcare facilities in the form of health centres and clinics. Primary health care facilities focus on prevention, promotion, and rehabilitation services, including cervical screening for the prevention and treatment of cervical cancer. The programme was designed for the district hospitals (that provide cervical screening services), primary health centres and clinics and the dynamics identified are discussed in Chapter five of this study. This context was discussed in the sampling section of Chapter three (Page 74) of this study that deals with the research methodology (MoHSS, 2015/2016).

- Resources for programme implementation

The educational programme to be implemented needs resources that support the realisation of the goal. The programme will be implemented in the form of training where women of reproductive age from the Otjozondjupa region will be selected to attend the training. The training will be conducted in two districts, namely Otjiwarongo and Grootfontein district. The agent will organise the training venues. In Otjiwarongo, a National Health Training venue originally designed to train nurses will be used as it is without noise that may distract participants during sessions and hence it is conducive for learning. In Grootfontein, a hall that is located outside the hospital premises will be used as the training venue as it is a conducive space that is appropriate for learning. The agent will prepare the training resources such as handouts, pens, laptop, projector, marker pens, flip charts, glue sticks, and writing pads. The languages to be used during the training will be English, with translations to Otjiherero, Damara/Nama, Oshiwambo and Afrikaans.

- Dynamics identified in the study

The concept of dynamics refers to the energy sources, purposes or motivation that necessitated the interventions (Dickoff et al., 1968). The dynamics in this study are the challenges identified from the analysed data and the conclusions made from this study (Chapter four & five). These energy sources (challenges) identified in Phase 1 (situational analysis) were used to form the content of the educational programme. The dynamics are described in detail in Table 3.4 (Page 107) and Table 6.1 (Page 215) of the study. Figure 3.4 indicates the dynamics or energy source for this study.

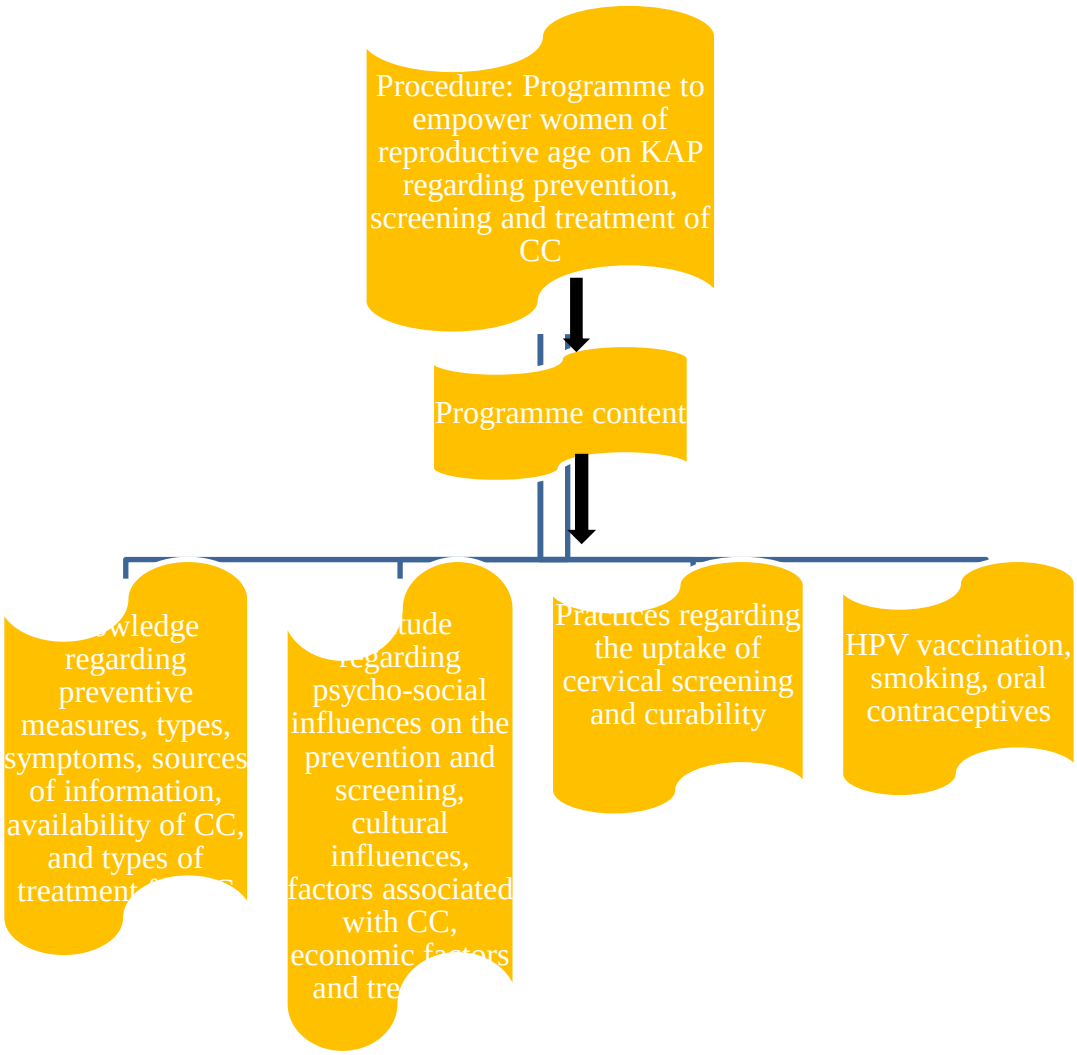


10. Figure 3.3 Dynamics/ energy source in this study

❖ Procedure (training programme)

Procedures refer to processes that are employed to address certain problems or to guide the actions to implement a programme (Dickoff et al., 1968). In this study, the procedure was the educational programme that would be implemented at the health care facilities to educate and empower women of reproductive age with the knowledge

on the prevention, screening, and treatment of cervical cancer, in the hope that improved knowledge would help the women to realise their potential risk to cervical cancer and be able to do something about it. The programme was developed using Nicholls' cyclic curriculum development model. The programme content is displayed in Figure 3.5.



11. Figure 3.4 Procedure for an educational programme

Figure 3.5 illustrates the programme content to be implemented in Otjozondjupa region. The procedure needs to address the dynamics identified during the situational analysis of the study. The dynamics are derived from the variables used in the data collection instruments as illustrated in Chapter three: Table 3.4. Table 3.4 Programme content to be implemented in the Otjozondjupa region

A) Knowledge: Low level of knowledge regarding the prevention, screening, and treatment of cervical cancer	12. Prevention: General knowledge regarding the prevention of cervical cancer focussing on the following variables: ▪ ***Prevention measures for cervical cancer*** • Types of CC • Symptoms of CC and • Sources of information on CC Screening: Knowledge regarding the screening of CC focusing on the following variables: • Availability of CC screening services • Indications of cervical cancer screening Practices: Knowledge regarding the treatment of CC focusing on the following variable: • Types of CC treatment
B) Attitude: Neutral level of attitude regarding screening, prevention, and treatment of CC	This section presents study variables focusing on the attitude as outlined below: • Psycho-social influences on the prevention and screening of CC • Cultural beliefs on the screening of CC • Factors that influence CC screening • Economic factors that influence CC screening uptake • Willingness to be screened for CC (Pap smear test) • ***Attitude regarding the screening and chances of recovery when CC is detected early***
C) Practices: Low uptake of cervical screening regarding screening, prevention, and treatment of CC	Practices regarding the prevention of CC: • HPV vaccination for CC prevention • Smoking tobacco products • Having a steady sexual partner • Usage of oral contraceptives > 5 years Practices regarding screening of CC: • Uptake of CC screening (Pap smear test) • HPV vaccination Practices regarding treatment of CC: • Curability of CC 13.

- Terminus

According to Dickoff et al., (1968), a terminus, which is the sixth item on the survey list, describes the end point/outcome of the interventions. The researcher (agent) aimed to attain the goal (terminus) through the implementation of educational programme activities that would enable the realisation of the outcome. In this study, the terminus was the end point (goal) of an educational programme to empower women of reproductive age with knowledge, attitudes, and practices regarding the prevention, screening, and treatment of cervical cancer. Once the women are empowered with correct information on the importance of cervical cancer prevention, screening, and treatment, it is expected that they would be able to perceive the risk of cervical cancer and practice the recommended health seeking behaviour.

The expectation is that at the end of the training programme, participants (recipients) would gain knowledge on cervical screening, prevention, and treatment on cervical cancer and develop positive and supportive attitudes towards screening, prevention, and treatment, thus increasing the uptake of cervical screening.

3.3.3 Phase 3: Developing the Educational Programme

Phase 3 objective was to develop an educational programme to enhance the utilisation of cervical screening services by women of reproductive age living in Otjozondjupa region.

Phase 3 of this study involved developing an educational programme to enhance the utilisation of cervical screening services by women of reproductive age living in Otjozondjupa region, within the conceptual framework. Therefore, this section

presents the theories and models that were adopted and guided the development of the educational programme in this study.

Four fundamental theories and models are described as follows, namely, Meyer and Van Niekerk (2008), the Cyclic curriculum development model of Nicholls and Nicholls (1978), Kolb' s four-stage model experiential learning theory (1984) and Knowles' model on andragogy (1984). The applications of the theories and models are described in detail in Chapter six (page 199) and Chapter seven (page 213) of the study.

3.3.4 Phase 4: Identification of the guidelines for the implementation and evaluation of an educational programme.

Phase 4 objective was to identify the guidelines for the implementation and evaluation of an educational programme for women of reproductive age in Otjozondjupa region.

Phase 4 was concerned with identifying the guidelines for the implementation and evaluation of the programme interventions. Kolb's experiential learning theory (1984) was used to understand the learning styles, as discussed in Chapter one (page 20). Theory advocates that learning is a process of creating knowledge through the transformation of experience which develops through a combination of grasping and transforming experience. Kolb's theory (1984) postulates that learners learn in four principals or types of learning styles. The four-stage cycles of learning are namely concrete experience (interpretation of experience), reflective observation (where one reflects on an experience) abstract conceptualisation (indicating that a person has learnt from an experience) and active implementation (where a person attempts to implement the newly acquired experience). The purpose of the guidelines is to assist

the implementers and beneficiaries on the steps to be followed in implementing and evaluating the programme interventions. Kolb's experiential theory (1984) is described in detail in Chapter seven (page 222) of this study.

3.4 ETHICAL CONSIDERATIONS

Research ethics are concerned with moral behaviour in research contexts. All research that involves the collection of data from human beings is required to treat respondents in accordance with the standards and values which affirm their essential humanity (Grove et al., 2015). There are four fundamental ethical principles that guide researchers during the research process that are based on the human rights that need to be protected in research and these are the principles of respect for a person, beneficence, non-maleficence, and justice. The following ethical considerations were considered during the study:

3.4.1 Independent review

Transparency enhances accountability by ensuring the public that the research study being undertaken is not exploitive (Emanuel et al., 2004). In this study, the research proposal was submitted and reviewed by the Human Research and Ethical Committee (H-REC) of the University of Namibia for ethical approval of the study and Ethical Clearance Certificate was granted [Annexure C (Page XXXI)]. The researcher also submitted a letter requesting ethical approval and permission to conduct the study to the MoHSS and received approval to conduct the study in Otjozondjupa region [Annexure E (Page XXXVII)].

3.4.2 The principle of respect for a person

The principle of respect is concerned with the rights to self-determination and full disclosure, and these form the basis of informed consent and the respect of human dignity and element of confidentiality (Polit & Beck, 2017). The researcher also explained that the purpose of the research study was for academic purposes only and that participation was voluntary (Emanuel et al., 2004). The researcher has an obligation to inform the respondents about their rights to withdraw from the study at any given time during the data collection process (Emanuel et al., 2004). The researcher informed the respondents about their rights to withdraw from the study or the rights not to answer a question at any point without being punished or coerced or required to provide any reason(s).

Anonymity was guaranteed with the names of respondents not being recorded on the questionnaire because the researcher used codes instead of the real names of respondents to identify the questionnaires. The researcher has an essential obligation to develop and implement procedures to ensure the confidentiality of the information collected (Emanuel et al., 2004). A room was prepared at each site where the respondents were completing the questionnaires and they had to put them in the provided box upon completion. The researcher explained to the respondents that the information being collected would not be shared with any other persons except the researcher but would only be used for study purposes only. To ensure confidentiality, all completed questionnaires were kept in a locked cabinet which is in the office of the researcher, and the researcher was the only person who had access to the records for the duration of the study. The purpose of addressing the issue of confidentiality was to build up a trusted relationship between the researcher and the respondents, thus

encouraging them to provide information freely. The data will be kept for at least 3 years (University of Namibia Revised Research Ethics Policy and Guidelines, 2018). Furthermore, respondents were informed that the study report would be submitted to the MoHSS and that it might be used to improve guidelines on the prevention, screening, and treatment of cervical cancer programme interventions. Finally, respondents made a free, voluntary, independent, and informed choice to participate in the study without being forced or coerced to do so.

3.4.3 The principle of beneficence

Researchers have a duty to maximise the benefits to the respondents in the study (Emanuel et al., 2004; Polit & Beck, 2017). In this study, respondents were informed that there are no direct benefits from the study as the study was undertaken for academic purposes only. Hence, there was no compensation or reimbursement that was made to the respondents. However, it is envisaged that the study can have a direct benefit to the respondents through an educational programme that was developed to educate and empower the public, especially productive aged women, on the knowledge, attitude, and practices, regarding the screening, prevention, and treatment of cervical cancer. The educational programme aims to enhance the utilisation of cervical cancer services am women of reproductive age in the Otjozondjupa region. This goal can be achieved by educating women on the importance of cervical cancer screening so that they can develop a positive attitude for health seeking behaviour. Women would benefit from the educational programme because the end product of the educational programme is empowered and knowledgeable women who hold positive attitudes towards cervical cancer services.

3.4.4 The principle of non-maleficence

The principle, as explained by Polit and Beck (2017) seeks to avoid, prevent, or minimise harm to the research respondents. This study's researcher ensured that the questionnaire contained questions that are less sensitive to pose to women regarding their sexual life. However, the researcher presumed that the respondents could feel uncomfortable to share information concerning sexuality and other matters about their private life. The researcher arranged with the social workers at the study sites to refer the respondents that might experience emotional or psychological harm. The researcher also explained to the respondents their right not to answer any question that might cause them emotional harm or that undermines their rights. The researcher further explained the rights of respondents to withdraw from the study at any time without being punished.

3.4.5 The principle of justice and a fair selection of the respondents

The study population should be selected to ensure valid science (Emanuel et al., 2004). Justice in research is concerned with making sure that the respondents are selected fairly and that the burden and benefit of the study are distributed equally. This principle refers to the rights of respondents to fair treatment and privacy (Polit & beck, 2017; Akaranga & Makua, 2016). In this study, all the women of reproductive age living in the Otjozondjupa region were included in the study, irrespective of the tribe they belong to.

The principle of justice also demands that the research strategies and procedures be fair and just to the respondents. The reviewed literature indicates that the selection of respondents should be based on the study requirements and not on individual

vulnerability (Emanuel et al., 2004; Polit & Beck, 2017). In this study, the population was selected to determine the reasons for the low utilisation of cervical cancer services in the study area and the selection was based on the inclusion criteria of the study.

3.4.6. Ethical issues related to study design and methods

Scientific validity of the study

Science and ethics do not conflict. Valid science is an ethical requirement. The research study must be designed so that the results will be useful in the context of the health problem in developing countries (Emanuel et al., 2004). In this study, a quantitative approach, as well as descriptive and cross-sectional designs were appropriate for this study's aims and objectives. The results informed the development of the educational programme to enhance the utilisation of cervical cancer services among the study population. The research objectives were realised, and it was confirmed that cervical cancer services are feasible and accessible to the respondents in the study area. The study design was feasible within the Namibian social, political, and cultural environment and the cervical cancer services in the study context are available at all health centres and clinics as is the case in all remaining 13 regions of the country.

The researcher considered research misconduct, which is characterised as the fabrication, falsification, or plagiarism in proposing, performing, or reviewing research or in reporting research results (Johnson & Christensen, 2012). This is completely unethical, and it is one of the most serious professional crimes. Thus, the researcher ensured the ethical principles in research while collecting data, as well as

interpreting and reporting the study results. The researcher excised objectivity during these processes.

Social value in research

It is widely recognised that ethical research must have social value, through the generation of knowledge that can lead to improvements in health, and without social value, research exposes the respondents to risk for no good reason and this wastes resources (Emanuel et al., 2004). There are four benchmarks that ensured social value in the study. The study should determine who will benefit from the research study. In this study, women of reproductive age in the Otjozondjupa region would benefit from the study as they will be enrolled in the education programme that is aimed to enhance the utilisation of cervical cancer services in the study area among this population. Secondly, the potential value of the research for each prospective beneficiary should be outlined. In this study, the uptake of cervical cancer services was deemed as important for each beneficiary. Thirdly, it is important to develop mechanisms to enhance the social value of the research. In this study, the developed educational programme will be pilot tested in the study area, then refined and reviewed by study supervisors and experts from the oncology department. Then, it will be disseminated to the health services management and policy makers in the MoHSS before being disseminated through articles in peer-reviewed journals. Lastly, the conducting of this study was done within the existing health care services (Emanuel et al., 2004).

3.5 SUMMARY

This chapter presented the research approach, design, sample and sampling technique, data collection instrument, data collection methods and procedures followed to gather

data for the study. It also discussed the conceptual framework and theories that inform the development of the educational programme. Ethical principles were ensured by obtaining an ethical clearance certificate from UNAM's ethical and research committee and approval from MoHSS to use health facilities to collect data from the respondents after obtaining informed consent from the respondents. The researcher's role and the purpose of the study were also clarified to minimise expectations and eliminate potential distress to the respondents.

CHAPTER FOUR

PRESENTATION OF STUDY RESULTS: PHASE ONE

4.1 INTRODUCTION TO THE CHAPTER

Chapter three of this study addressed the research design and methodology. This chapter presents the research findings. These were obtained from the analysis of quantitative data collected from women of reproductive age who participated in the study at health centres and clinics in the Otjozondjupa region. The aim was to assess the knowledge, attitudes, and practices of women of reproductive age with regards to cervical cancer for the purpose of developing an educational programme. The data collection process was done using a structured questionnaire with close-ended 5 level Likert scale questions that were coded 1 to 5, with 1 being strongly agree and 5 being strongly disagree and do not know. Questions that require “yes or no” answers were used to determine whether the participants were using oral contraceptives, smoked tobacco, or had steady sexual partners and to determine their circumcision status.

The objective of phase one of this study was to assess the knowledge, attitude, and practice of women of reproductive age regarding the prevention, screening, and treatment of cervical cancer in the Otjozondjupa region. Demographic variables and descriptive statistics are provided first to give background information. A detailed analysis is further employed to explain the descriptive data in relation to the research objectives.

4.2 RESPONSE RATE

The calculated study sample size was 381 and this increased to 400 respondents to enrich the representativeness of the findings. A total of 400 questionnaires were

completed. An analysis of the interview responses shows that 6 (1.5%) of the 400 questionnaires were found to be incomplete and thus 394 questionnaires were cleaned and presented for analysis. The study's response rate of 394 (98.5% was received. Welman et al., (2010) state that a response rate that is above 60% is sufficient to obtain meaningful statistical analysis and obtain acceptable results. The results are presented and discussed in terms of the objectives of the study.

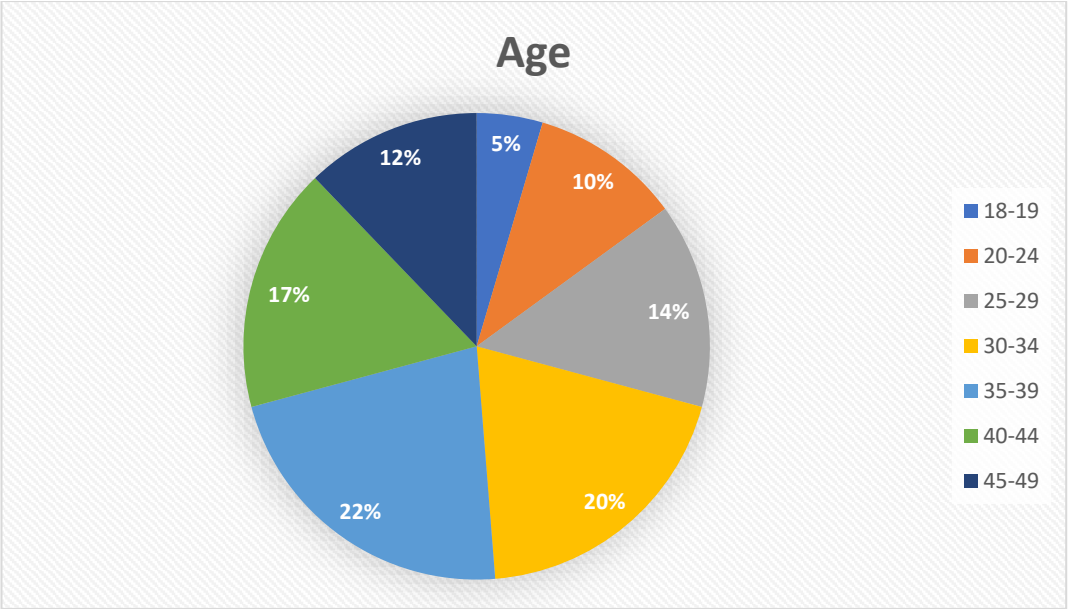
4.3 PRESENATION OF STUDY RESULTS

OBJECTIVE 1: Assess the knowledge, attitude, and practices of women of reproductive age regarding the screening, prevention, and treatment of cervical cancer in the Otjozondjupa region.

4.3.1 Demographic data of respondents

A total of 394 women of reproductive age from four districts in the Otjozondjupa region participated in the study. The questionnaire included seven significant variables, namely, age, marital status, educational level, employment status, home language, length of stay in the area and parity of the respondents. The data were descriptively analysed to provide relevant information to be used in the study. The socio-demographic profiles are summarised and presented in figures and tables as follows:

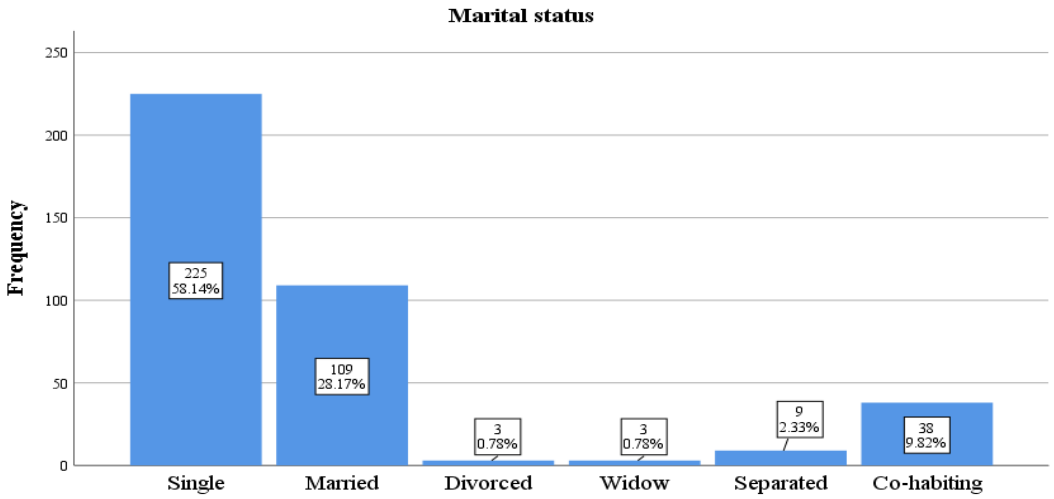
- 4.3.1.1 Age of the respondents



14. Figure 4.1 Age of the respondents (n = 394)

Figure 4.1 reveals that the highest number of respondents at 22.1% are in the age group of 35 - 39; 20% in the 30 - 34 age group; 17.0% in the age group of 40 - 44; 14.2% in the age group of 25-29; 12.2% in the 45 - 49 age group; 10.4% in the 20 - 24 years age group, and 4.6% in the younger group of 18 -19 years. The majority of women who participated in the study were in the age group of 35 - 39 (22.1%) and 30 - 34 (19.5%).

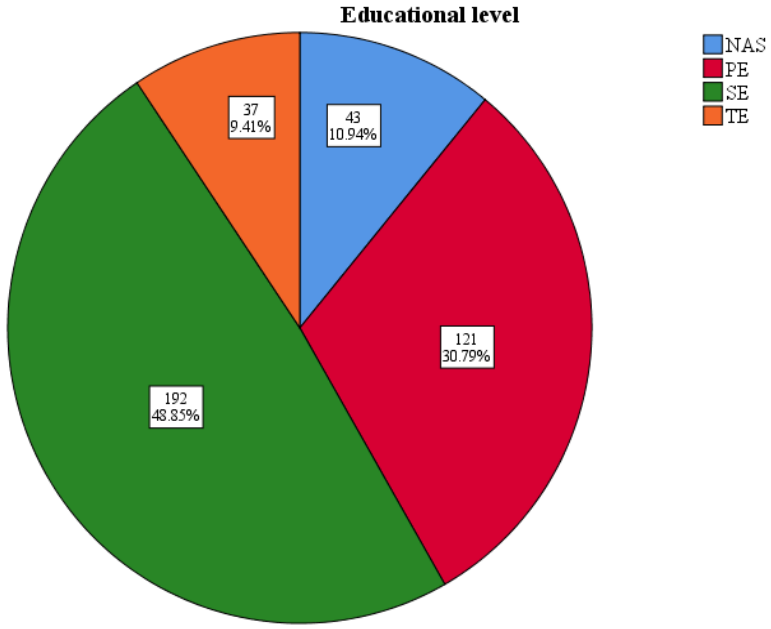
- 4.3.1.2 Marital status



15. Figure 4.2 Marital status of the respondents (n= 387) (Missing data = 7 (1.8%)

Figure 4.2 above illustrates that the majority of respondents were single at 225 (58.1%) followed by married respondents at 109 (27.7%). Those who were co-habiting were 38 (9.8%) while 9 (2.3%) of the respondents were separated women. The divorced and widowed were respectively at 3 each (0.8%) each.

- 4.3.1.3 Educational level



16. Figure 4.3 Educational level of the respondents (n = 393) (Missing data = 1 (0.3%)

Figure 4.3 indicates that the highest number of respondents attended secondary education (SE) at 192 (48.9%), followed by 121 (30.8%) who had primary education (PE). A further 43 (10.9%) respondents did not attend school (NAS) and these were followed by those with tertiary education (TE) at 37 (9.4%).

- 4.3.1.4 Employment status

17. Figure 4.4 Employment status of the respondents (n = 393) (Missing data = 1 (0.3%)

Figure 4.4 above shows that the majority of women who participated in the study were unemployed at 202 (51.4%), followed by 134 (34.1%) who were employed. The self-employed respondents stood at 26 (6.6%) with students at 18 (4.6%) and housewives at 13 (3.3%) respectively. Over half of the study population was unemployed.

- 4.3.1.5 Home language of the respondents (n = 394)

The largest number of respondents in this study speak Herero at 90 (22.8%), followed by Damara/Nama at 75 (19.0%). The Oshiwambo speaking respondents were 65 (16.5%), San language speaking respondents were 56 (14.2%), Rukavango were 39 (9.5%), Silozi were 13 (3.3%), Portuguese were 10 (2.5%), Tswana were 8 (2.0%) and Swahili speaking were 5 (1.5%). Chokwe and Ndebele were represented by one respondent (0.3%) each.

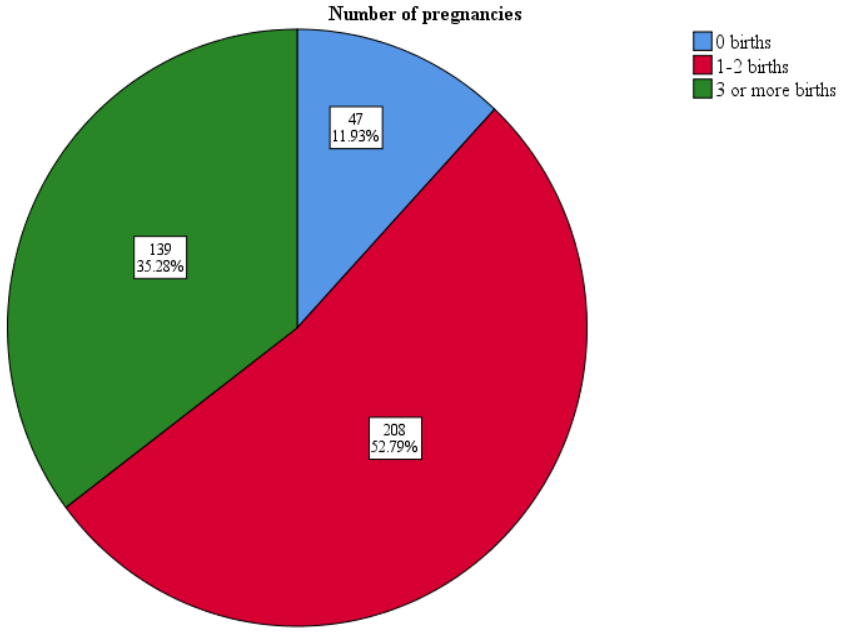
- 4.3.1.6 Length of stay in the area

18. Table 4.1 Length of stay in the area of study (n=392)

Length of stay in the area	Frequencies	Valid percentage
Less than a year	21	5.3
1 – 2 years	26	6.6
3 -5 years	110	28.0
6 years and above	235	59.8
Total	392	100.0
Missing data	2	0.5

Table 4.1 above shows the time period that the respondents had stayed in the area of study. The majority of the respondents at 235 (59.8%) had stayed in the area of study for 6 years and above, followed by those who had stayed for 3-5 years at 110 (28.0%), 1-2 years were 26 (6.6%) and less than a year were 21 (5.3%).

- 4.3.1.7 Number of pregnancies per respondent



19. Figure 4.5 Number of pregnancies per respondent (n = 394)

Figure 4.5 above indicates that the majority of the respondents at 208 (52.8%) have had 1-2 births, followed by those having 3 or more births at 139 (35.3%) while respondents with 0 births were 11 (11.9%).

4.3.2 Objective 1: Knowledge regarding the prevention, screening, and treatment of cervical cancer (cc).

The study determined the knowledge levels of women of reproductive age in terms of the prevention, screening and treatment of cervical cancer and the findings are discussed below.

- 4.3.2.1 Knowledge regarding the prevention of cervical cancer

It is important for women to know the methods that are used to prevent CC, the types of CC, as well as symptoms and sources of CC so that they are able to act on their

health. In this section, the respondents were given thirteen (13) items that are viewed as effective in preventing the development of CC. The items are illustrated in Table 4.2.

20. Table 4.2 Descriptive analysis of the general knowledge regarding preventive measures of CC

Item/Statement	Strongly Agree n (%)	Agree %	Neutral n(%)	Disagree n(%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: There are usually no signs or symptoms of early cervical cancer, but it can be detected early with regular check-ups [ECC]	8 (2.1)	15 (3.8)	14 (3.6)	43 (11.0)	47 (12.1)	263 (67.4)	390
Item 2: Attend regular cervical cancer screening service for early detection of precancerous cells that suggest cervical cancer [AEP]	34 (8.6)	31 (7.9)	94 (23.9)	30 (7.6)	22 (5.6)	183 (46.4)	394
Item 3: Avoid unprotected sexual intercourse to reduce chances of being infect with HPV that causes cervical cancer. [AIW]	19 (4.8)	46 (11.7)	143 (36.3)	50 (12.7)	22 (5.6)	114 (28.9)	394
Item 4: Avoid multiple male sexual partners to prevent STIs including HPV which causes cervical cancer [APM]	21 (5.3)	40 (10.2)	105 (26.6)	62 (15.7)	28 (7.1)	138 (35.0	394

Item 5: Avoid/quit cigarette smoking to prevent cervical cancer [ASP]	34 (8.6)	10 (2.5)	107 (27.2)	97 (24.6)	43 (10.9)	103 (26.1)	394
Item 6: Avoid early sexual intercourse to reduce chances of cervical cancer [ART]	12 (3.1)	16 (4.1)	124 (31.6)	77 (19.6)	28 (7.1)	136 (34.6)	393
Item 7: Avoid having sexual intercourse with an uncircumcised partner [ASE]	21 (5.4)	23 (5.9)	93 (23.7)	90 (23.0)	20 (5.1)	145 (37.0)	392
Item 8: Being vaccinated against Human Papillomavirus (HPV) prevents cervical cancer. [BVA]	16 (4.1)	3 (0.8)	6 (1.5)	5 (1.3)	7 (1.8)	354 (90.5)	391
Item 9: Vaccination of girls between 11 and 12 years of age with HPV vaccine reduces the chances of developing cervical cancer [VGV]	0 (0.0)	2 (0.5)	7 (1.8)	5 (1.3)	4 (1.0)	374 (95.4)	392
Item 10: Using birth control pills for less than 5 years reduces the chances of cervical cancer [UBP]	12 (3.1)	8 (2.0)	8 (2.0)	125 (31.9)	97 (24.7)	127 (32.4)	392
Item 11: Human papillomavirus (HPV) infection is the major risk	11 (2.8)	8 (2.0)	8 (2.0)	11 (2.8)	11 (2.8)	342 (86.8)	391

factor for cervical cancer [HPI]							
Item 12: Tests that examine the cervix are used to detect (find) and diagnose cervical cancer [CCC]	17 (4.4)	7 (1.8)	6 (1.6)	12 (3.1)	8 (2.0)	337 (87.1)	387
Item 13: Abnormal cells suggesting cervical cancer can be detected early by using a PAP Smear test [CTN]	50 (12.7)	71 (18.1)	123 (31.3)	10 (2.5)	10 (2.5)	129 (32.8)	393

The results from an analysis of these items are presented below.

Item 1: Of the respondents (n = 390), 263 (67.4%) indicated that they did not know that there are usually no signs or symptoms of early cervical cancer, but it can be detected early with regular check-ups [ECC], while 47 (12.1%) strongly disagreed, 43 (11.0%) disagreed, 14 (3.6%) were neutral, 15 (3.8%) agreed and 8 (2.1) strongly agreed [ECC] (Missing data: 4)

Item 2: The majority of the respondents (n = 394) at 183 (46.4%), did not know that attending regular cervical cancer screening services for the early detection of precancerous cells which suggests cervical cancer, increases the chance of cervical cancer prevention. In addition, 94 (23.8%) were neutral, while 31 (7.9%) agreed, and 34 (8.7%) strongly agreed with the statement [AEP].

Item 3: Of the respondents (n = 394, 114 (28.9%) did not know that avoiding unprotected sexual intercourse reduces the chances of being infected with the HPV

that causes cervical cancer while 143 (36.3%) were neutral, 50 (12.7%) disagreed, 46 (11.7%) agreed and 19 (4.8%) strongly agreed with the statement [AIW].

Item 4: The majority of the respondents (n = 394) at 138 (35.0%), did not know that avoiding multiple male sexual partners prevents STIs and the HPV that causes cervical cancer, while 105 (26.6%) were neutral, 62 (15.7%) disagreed, and only 40 (10.2%) agreed with the statement [APM].

Item 5: The majority of respondents (n = (n = 394), 107 (27.2%) were neutral with regards to the fact that avoiding/quitting cigarette smoking prevents cervical cancer while 103 (26.1%) did not know, 97, (24.6%) disagreed and less than 10% at 34 (8.6%) strongly agreed with the statement [ASP].

Item 6: The majority of respondents (n = 393) at 136 (34.6%) did not know that avoiding early sexual intercourse reduces the chances of cervical cancer, 124 (31.6%) were neutral, while less than 5% at 16 (4.1%) agreed, and 12 (3.1%) strongly agreed with the statement [ART]. (Missing data: 1)

Item 7: The majority of the respondents (n = 392) at 145 (37.0%) did not know that avoiding sexual intercourse with an uncircumcised partner reduces the chance of cervical cancer, while 90 (23.0%) disagreed and 93 (23.7%) were neutral. Nonetheless, only 23 (5.9%) agreed and 21 (5.4%) strongly agreed with the statement [ASE] (Missing data: 2).

Item 8: Over 90% of the respondents (n = 391), 354 (90.5%) did not know that being vaccinated against the Human Papillomavirus (HPV) prevents cervical cancer, and 16 (4.1%) strongly agreed with the statement [BVA] (Missing data: 3).

Item 9: Almost all the respondents (n = 392) at 374 (95.4%), did not know that vaccinating girls between 11 and 12 years of age with the HPV vaccine reduces the chances of developing cervical cancer while seven, (1.8%) were neutral and only two (0.5%) agreed with the statement [VGV] (Missing data: 2)

Item 10: The majority of the respondents (n = 392, 127 (32.4%), did not know that using birth control pills for less than 5 years reduces chances of cervical cancer, while 97 (24.7%) strongly disagreed, 125 (31.9%) disagreed, and only two (3.1%) strongly agreed [UBP] (Missing data: 2).

Item 11: The majority of the respondents (n = 391) 342 (86.8%) revealed that they did not have knowledge about the Human papillomavirus (HPV) infection being a major risk factor for cervical cancer [HPI], while 11 (2.8%) strongly disagreed, eight (2.0%) were neutral and agreed, whereas only 11 (2.8%) strongly agreeing with the item [HPI] (Missing data: 3).

Item 12: The majority of the respondents (n = 387) at 337 (87.1%) indicated that they did not know that the tests that examine the cervix are used to detect and diagnose cervical cancer [CCC], 8 (2.0%) strongly disagreed, 12 (3.1%) disagreed, 6 (1.6%) were neutral, 7 (1.8%) agreed and 17 (4.4%) strongly agreed [CCC] (Missing data: 7).

Item 13: Of the respondents (n = 393, 129 (32.8%) of the respondents did not know that abnormal cells suggesting cervical cancer can be detected early using a PAP Smear test [CTN], however, 10 (2.5%) strongly disagreed and agreed while 123 (31.3%) were neutral, 71 (18.1%) agreed and 50 (12.7%) strongly agreed (Missing data: 1).

21. Table 4.3 Level of general knowledge on preventive measures of CC

		Frequency	Valid Percent
Valid	Low	279	73.4
	Average	85	22.4
	Good	16	4.2
	Total	380	100.0

- Knowledge regarding the types of cervical cancer

In this section, the respondents were given three (3) items to determine whether they had knowledge about the types of cervical cancer. These items are illustrated in Table 4.4.

22. Table 4.4 Descriptive analysis of the types of cervical cancer

Item/Statement	**Strongly Agree n (%)**	**Agree %**	**Neutral n (%)**	**Disagree n (%)**	**Strongly disagree n (%)**	**Do not Know n (%)**	**Total n ()**
Item 1: Squamous cells carcinoma is a type of cervical cancer	0 (0.0%)	0 (0.0%	0 (0.0%	1 (0.3)	0%	387 (99.7)	388
Item 2: Adenocarcinoma is a type of cervical cancer	0 (0.0%)	0 (0.0%	0 (0.0%	1 (0.3)	0%	387 (99.7)	388
Item 3: Metastatic cervical cancer is cancer that has spread to other parts of the body	2 (0.5)	4 (1.0)	20 (5.2)	2 (0.5)	0%	359 (92.8)	387

The results of these items are presented below:

Item 1: Almost all the respondents (n = 387) represented by 99.7% did not know that squamous cells carcinoma is a type of cervical cancer ([SCC], and only 1 (0.3%) disagreed (Missing data: 7).

Item 2: Almost all respondents (n = 387) at 99.7% did not know that adenocarcinoma is a type of cervical cancer [ATC], and only 1 (0.3%) disagreed (Missing data: 7).

Item 3: The majority of the respondents (n = 359) at 92.8% did not know that metastatic cervical cancer spreads to other parts of the body [MCC], 2 (0.5%) disagreed, 20 (5.2%) were neutral, 4 (1.0%) agreed and 2 (0.5%) strongly agreed (Missing data: 35)

All the statements in Table 4.4 were scored and summed up. The total scores were categorised as follows: 0 to 5 = Low, 6 to 10 = = Good

23. Table 5.5 Level of knowledge on the types of cervical cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	387	98.2	100.0	100.0
Missing	System	7	1.8		
Total		394	100.0		

Table 4.5 indicate that the majority of the respondents (n = 387, (98.2%) scored low on the level of knowledge regarding the types of cervical cancer. The highest mean is .23 and the lowest is 0.1. The highest standard deviation was .853 and the lowest was .102. This means that the responses to the statements were divergent, and the majority of the respondents did not agree with the statements. This reflects that the respondents have low knowledge regarding the types of CC (Annexure J).

- Knowledge regarding the symptoms of CC

Knowledge about the symptoms of CC is very important to women for the prevention of cervical cancer through the early detection and increasing the chances of recovery. In this section, respondents were given ten (10) items to determine their knowledge of the symptoms that suggest cervical cancer. These items are illustrated in Table 4.6.

24. Table 4.6 Descriptive analysis on the knowledge regarding symptoms of cervical cancer

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ( )
Item 1: Unusual heavy and longer vaginal bleeding [UVB]	17 (4.3)	37 (9.4)	113 (28.8)	31 (7.9)	19 (4.8)	176 (44.8)	393
Item 2: Bleeding between regular menstrual periods [BMP]	12 (3.1)	60 (15.3)	133 (33.8)	37 (9.4)	26 (6.6)	125 (31.8)	393
Item 3: Bleeding after having sexual intercourse [BSI]	7 (1.8)	16 (4.1)	31 (4.1)	67 (17.2)	64 (16.4)	205 (52.6)	390
Item 4: Bleeding after douching [BAD]		3 (0.8)	11 (2.8)	67 (17.0)	54 (13.7)	258 (65.6)	393
Item 5: Bleeding after pelvic examination [BAP]	5 (1.3)	4 (1.0)	8 (2.1)	66 (16.9)	51 (13.1)	256 (65.6)	390
Item 6: Bleeding after menopause [BAM]	14 (3.6)	10 (2.6)	20 (5.1)	46 (11.8)	126 (32.3)	174 (44.6)	390

Item 7: Constant pelvic pain not related to menstrual cycle [CPP]	12 (3.1)	21 (5.5)	42 (10.9)	42 (10.9)	35 (9.1)	232 (60.4)	384
Item 8: Heavy or unusual discharge that may be watery, thick, and possibly have a foul smelling [HUD]	13 (3.3)	60 (15.3)	88 (22.5)	40 (10.2)	21 (5.4)	169 (43.2)	391
Item 9: Increased urinary frequencies [IUF]	2. (0.5)	8 (2.0)	11 (2.8)	74 (18.9)	51 (13.0)	245 (62.7)	391
Item 10: Painful intercourses [PI]	8 (2.0)	8 (2.0)	24 (6.1)	70 (17.0)	63 (16.0)	220 (56.0)	393

The results from an analysis of these items are presented below.

Item 1: The majority of the respondents (n =393) at 176 (44.8%) indicated that they did not know that an unusually heavy and longer vaginal bleeding is one of the symptoms of cervical cancer while 113 (28.8 were neutral. Only 37 (9.4% and 17 (4.3%) showed a good knowledge on cervical cancer with regards to this variable [UVB] (Missing data: 1)

Item 2: About (n = 393) 133 (33.8%) of the respondents were neutral with regards to the fact that bleeding between regular menstrual periods is a sign of cervical cancer

and 125 (31.8%) revealed that they did not know. Less than 20% of the respondents agreed as represented by 60 (15.3%) respondents and 12 (3.1%) strongly agreed [BMB] (Missing data: 1)

Item 3: Over 50% of the respondents (n = 390) at 205 (52.6%) did not know that bleeding after having sexual intercourse is a sign of cervical cancer, 64 (16.4%) strongly disagreed and 67 (17.2%) disagreed with the statement. However, 31 (4.1%) were neutral, 16 (4.1%) agreed and only seven (1.8%) strongly agreed. Thus, the majority of the respondents (85%) do not have good knowledge on this variable [BSI] (Missing data: 4)

Item 4: The majority of the respondents (n = 393) at 258 (65.6%) revealed that they did not know that bleeding after douching is a sign of cervical cancer while 67 (17.0%) strongly disagreed with the statement and only three (0.8%) agreed on this variable. [BAD] (Missing data: 1)

Item 5: Of the respondents, (n = 390), 256 (65.6%) did not know that bleeding after pelvic examination is a sign of cervical cancer while 51 (13.1%) strongly disagreed and 66 (16.9%) disagreed with the statement. Only four (1.0%) agreed and 5 (1.3%) strongly agreed with the statement [BAP] (Missing data: 4)

Item 6: The majority of the respondents 390) at174 (44.6%) revealed that they did not know that bleeding after menopause is a symptom of cervical cancer while 126 (32.3) strongly disagreed. However, less than 5% at 10 (2.6%) agreed and 14 (3.6%) strongly agreed with the statement [BAM] (Missing data: 4)

Item 7: The majority of the respondents (n = 384) at 232 (60.4%), indicated that they did not know that constant pelvic pain that is not related to menstrual cycle is a

symptom of cervical cancer. However, 42 (10.9%) disagreed, 42 (10.9%) were neutral, and less than 10% at 21 (5.5%) agreed while 12 (3.1%) strongly agreed with the statement [CPP] (Missing data: 10)

Item 8: Less than 50% of the respondents (n = 391) at169 (43.2%) indicated that they did not know that a heavy or unusual discharge that may be watery, thick, and possibly have a foul smell is a symptom of cervical cancer. In addition, 88 (22.5%) were neutral and only 60 (15.3%) agreed and 13 (3.3%) strongly agreed with the statement [HUD] (Missing data: 3)

Item 9: The majority of the respondents (n = 391) at 245 (62.7%) revealed that they did not know that increased urinary frequency is a symptom of cervical cancer, with 74 (18.9%) having disagreed and only 0.5% strongly agreeing with the statement [IUF] (Missing data: 3)

Item 10: The study revealed that over 50% of the respondents (n = 393) at 220 (56.0%), did not know that painful intercourse is a symptom of cervical cancer while 63 (16.0%) strongly disagreed, 70 (17.0%) disagreed, and only 2.0% agreed and strongly disagreed with the statement [PI] (Missing data: 1)

All the statements in Table 4.6 were scored and summed up. The total scores were categorised as follows: 0 to 18 = Low, 19 to 36 = Average and 37 to 55 = Good.

25. Table 4.7 Level of knowledge on symptoms of cervical cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	296	75.1	79.6	79.6
	Average	70	17.8	18.8	98.4
	Good	6	1.5	1.6	100.0
	Total	372	94.4	100.0	
Missing	System	22	5.6		
Total		394	100.0		

- Knowledge regarding the sources of information on CC

It is important for women of reproductive age to know the appropriate sources of information on CC screening services. In this section, the respondents were given four (4) items that were related to the most known sources of information on CC. The items are presented in Table 4. 8 below.

26. Table 8.8 Descriptive analysis on the sources of information on CC

Item/Statement	Strongly Agree n (%)	Agree %	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item1: Health care workers provide enough, clear, and understandable health information on cervical cancer [HWC]	32 (8.1)	20 (5.1)	73 (18.6)	95 (24.2)	53 (13.5)	120 (30.5)	393
Item 2: Leaflets/brochures on cervical cancer	11 (2.8)	9 (2.3)	28 (7.1)	155 (39.5)	74 (18.9)	115 (29.3)	392

are available in local languages [LCC]							
Item 3: Friends/relatives who visited a health facility provided information on cervical cancer [FFH]	10 (2.6)	23 (5.9)	50 (12.8)	135 (34.4)	66 (16.8)	108 (27.6)	392
Item 4: Health information on cervical cancer is available on mass media [e.g. radio, TV, newspapers] [HIM]	28 (7.1)	17 (4.3)	29 (7.4)	78 (19.9)	83 (21.2)	157 (40.1)	392

The results of these items are presented below.

Item1: The majority of the respondents (n = 393) at 120 (30.5%), did not know that health care workers provide enough, clear and understandable health information on cervical cancer while 53 (13.5%) strongly disagreed, 95 (24.2%) disagreed, 73 (18.6%) were neutral, 20 (5.1%) agreed and 32 (8.1%) strongly agreed (Missing data: 1)

Item 2: The majority of the respondents (n = 392) at 155 (39.5%), disagreed that leaflets/brochures on cervical cancer are available in local languages, 115 (29.3%) did not know, 74 (18.9%) strongly disagreed and only 11 (2.8%) strongly agreed (Missing data: 2)

Item 3: The majority of the respondents (n =392) at 135 (34.4%), disagreed that friends/relatives who visited the health facility provided information on cervical

cancer, 108 (27.6%) did not know, while 66 (16.8%) strongly disagreed, 50 (12.8%) were neutral, 23 (5.9%) agreed and 10 (2.6%) strongly agreed (Missing data: 2)

Item 4: The majority of the respondents (n =392) at 157 (40.1%), did not know that health information on cervical cancer is available on mass media [e.g., radio, TV, newspapers] while 83 (21.2%) strongly disagreed, 78 (19.9%) disagreed, 29 (7.4%) were neutral, 17 (4.3%) agreed and 28 (7.1%) strongly agreed (Missing data: 2)

27. Table 4.9 Overall level of knowledge regarding the prevention of cervical cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	339	86.0	88.3	88.3
	Average	33	8.4	8.6	96.9
	Good	12	3.0	3.1	100.0
	Total	384	97.5	100.0	
Missing	System	10	2.5		
Total		394	100.0		

- 4.3.2.2 Knowledge regarding the screening of cervical cancer

The women's knowledge about where to undergo for cervical screening services and the health reasons for screening is very important for them to decide to take up cervical screening. The availability of screening services and the indications for screening are discussed below.

- Availability of cervical cancer screening services

The availability and accessibility of CC screening services is a very important consideration in the screening for the prevention and control of CC. In this section, respondents were given three (3) items to determine the knowledge of the availability of cervical cancer screening services in the area. The items are reported in Table 4.10.

28. Table 4.10 Descriptive analysis on the availability of cervical cancer screening services

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: Cervical cancer screening service is available at the local health centre/clinic [CAC]	48 (12.2)	51 (13.0)	147 (37.4)	10 (2.5)	8 (2.0)	129 (32.8)	393
Item 2: Cervical cancer screening service is available at outreach point [CIO]	1 (0.3)	0 (0.0)	3 (0.8)	9 (2.3)	23 (5.9)	355 (90.8)	394
Item 3: Cervical cancer screening service is available at the district hospital [CCH]	12 (3.1)	11 (2.8)	17 (4.3)	9 (2.3)	9 (2.3)	333 (85.2)	391

The results from an analysis of these items are presented below.

Item 1: The majority of the respondents (n = 393) at 147 (37.4%), were neutral on the view that the cervical cancer screening service is available at the local health centre/clinic, while 129 (32.8%) did not know, 51 (13.0) agreed and 48 (12.2%) strongly agreed (Missing data: 1)

Item 2: Over 90% of the respondents (n = 394) at 355 (90.8%) did not know that the cervical cancer screening service is available at outreach points in the area and 23 (5.9%) strongly disagreed, while 1 (0.3%) strongly agreed.

Item 3: The majority of respondents (n = 391), 333 (85.2%) did not know that the cervical cancer screening service is available at the district hospital while 17 (4.3%)

were neutral, 9 (2.3%) agreed and strongly disagreed, 11 (2.8%) agreed and 12 (3.1%) strongly agreed (Missing data: 3)

All the statements in Table 4.10 were scored and summed up. The total scores were categorised as follows: 0 to 5 = Low, 6 to 10 = Average and 11 to 15 = Good.

29. Table 4.11 Level of knowledge on the availability of cervical cancer screening services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	342	86.8	87.5	87.5
	Average	43	10.9	11.0	98.5
	Good	6	1.5	1.5	100.0
	Total	391	99.2	100.0	
Missing	System	3	.8		
Total		394	100.0		

- Knowledge regarding the indications (factors associated) of cervical cancer

It is important for women to know the factors that are associated with cervical cancer. In this section, the respondents were given nine (9) items that are believed to increase the chances of cervical cancer development. The items are illustrated in Table 4.12.

30. Table 4.12 Descriptive analysis on the indications of cervical cancer

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree	Do not Know n (%)	Total n ()

					n (%)		
Item 1: Human papillomavirus (HPV) infection is the major risk factor for cervical cancer [HPI]	11 (2.8)	8 (2.0)	8 (2.0)	11 (2.8)	11 (2.8)	342 (86.8)	391
Item 2: Smoking cigarettes increases the chances of getting cervical cancer [SCI]	24 (6.1)	23 (5.9)	108 (27.6)	87 (22.3)	43 (11.0)	106 (27.1)	391
Item 3: Long-term (for longer than 5 years) oral use of birth control pills causes cervical cancer [BCP]	11 (2.8)	6 (1.5)	36 (9.3)	119 (30.6)	93 (23.9)	124 (31.9)	389
Item 4: Being infected with HIV, the virus that causes AIDS, increases the chances of getting cervical cancer [BIW]	7 (1.8)	45 (11.5)	175 (44.8)	36 (9.2)	25 (6.4)	103 (26.3)	391

Item 5: Being sexually active at a young age (early sexual intercourse) increases the chances of getting CC. [BSA]	12 (3.1)	35 (9.0)	149 (38.2)	34 (8.7)	28 (7.2)	132 (33.8)	390
Item 6: Multiple pregnancies (more than 5 times) is associated with cervical cancer [MPC]	10 (2.6)	24 (6.3)	41 (10.8)	40 (10.5)	35 (9.2)	231 (60.6)	381
Item 7: Having unprotected sexual intercourse with multiple male sexual partners increases the chance of cervical cancer [HUS]	18 (4.6)	57 (14.6)	83 (21.3)	48 (12.3)	21 (5.4)	163 (41.8)	390
Item 8: Having sexual intercourse with an uncircumcised partner increases the risk for CC [BSI]	19 (4.9)	29 (7.4)	68 (17.4)	94 (24.1)	38 (9.7)	142 (36.4)	390

Item 9: Family history of cervical cancer increases the chance of cervical cancer [FHC]	34 (8.7)	15 (3.8)	37 (9.5)	88 (22.5)	95 (24.3)	122 (31.2)	391

The results derived from an analysis of these items are presented below.

Item 1: The study revealed that (n = 391) 318 (82.2%) of the respondents did not know that the Human Papillomavirus (HPV) is associated with cervical cancer while eight (2.1%) agreed and 15 (3.9%) strongly agreed with the statement [HPV] (Missing data: 3).

Item 2: The study revealed that (n = 391) 108 (27.6%) of the respondents were neutral while 106 (27.1%) did not know that smoking cigarettes increases the chances of getting cervical cancer, 87 (22.3%) disagreed, 23 (5.9%) agreed and 24 (6.1%) strongly agreed [SCI] (Missing data: 3).

Item 3: The study revealed that (n = 389) 124 (31.9%) of the respondents did not know that the use of oral birth control pills for longer than 5 years causes cervical cancer. In addition, 93 (23.9%) strongly disagreed and 119 (30.6%) disagreed while 6 (1.5%) agreed and 11 (2.8%) strongly agreed with the statement [BCP] (Missing data: 5).

Item 4: The study revealed that (n = 391) 175 (44.8%) of the respondents were neutral whether being infected with HIV, the virus that causes AIDS, increases the chances of getting cervical cancer or not, while 103 (26.3%) did not know, 45 (11.5%) agreed and 7 (1.8%) strongly agreed. The findings indicate poor knowledge regarding this variable [BIW] (Missing data: 4).

Item 5: The majority of respondents (n = 390) at 149 (38.2%) were neutral with regards to the fact that being sexually active at a young age (early sexual intercourse) increases the chances of cervical cancer while 132 (33.8%) did not know. Only 35 (9.0%) agreed and 12 (3.1%) strongly agreed with the statement [BSA] (Missing data: 4).

Item 6: The majority of respondents (n = 381) at 231 (60.6%), did not know that multiple pregnancies (more than 5 times) are associated with cervical cancer while 41 (10.8%) were neutral, less than 10% at 24 (6.3%) agreed, and 10 (2.6%) strongly agreed [MPC] (Missing data: 13).

Item 7: The majority of respondents (n = 390) at 163 (41.8%), did not know that having unprotected sexual intercourse with multiple male sexual partners increases the chances of cervical cancer, while 48 (12.3%) disagreed and 83 (21.3%) were neutral. The study revealed that 57 (14.6%) agreed and 18 (4.6%) strongly agreed with the statement [HUS] (Missing data: 4).

Item 8: The majority of respondents (n = 390) at 142 (36.4%), did not know that having sexual intercourse with an uncircumcised partner increases the chances of cervical cancer, 94 (24.1%) disagreed, 68 (17.4%) were neutral, 29 (7.4%) agreed and 19 (4.9%) strongly agreed [BSI] (Missing data: 4).

Item 9: The majority of the respondents (n = 391) at 122 (31.2%), did not know that a family history of cervical cancer increases the chance of cervical cancer while 95 (24.3%) strongly disagreed and 88 (22.5%) disagreed with the statement. However, 37 (9.5%) were neutral, 15 (3.8%) agreed and 34 (8.7) strongly agreed with the statement [FHC] (Missing data: 3).

All the statements in Table 4.12 were scored and summed up. The total scores were categorised as follows: 0 to 15 = Low, 16 to 30 = Average and 31 to 45 = Good.

31. Table 4.13 Level of knowledge on the indications of cervical cancer screening

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	234	59.4	62.9	62.9
	Average	120	30.5	32.3	95.2
	Good	18	4.6	4.8	100.0
	Total	372	94.4	100.0	
Missing	System	22	5.6		
Total		394	100.0		

- 4.3.2.3 Knowledge regarding the treatment of cervical cancer

The knowledge held by women of reproductive age regarding the types of treatment is an important cue to cervical screening because it instils the hope of relief of symptoms and the cure of cervical cancer. The various treatment methods for cervical cancer are discussed below.

- Knowledge regarding the types of treatment for CC

The respondents were given three (3) items to determine their knowledge on the types of treatment for cervical cancer if detected. The findings are reported in Table 4.14.

32. Table 4.14 Descriptive analysis on the types of treatment for CC

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: Surgery or an operation to remove cancer tissues [SOT]	35 (9.0)	69 (17.6)	59 (15.1)	2 (0.5)	3 (0.8)	223 (57.0)	391
Item 2: Chemotherapy or medications that destroys cancer tissues [CMT]	15 (3.8)	22 (5.6)	74 (18.9)	3 (0.8)	3 (0.8)	275 (70.2)	392
Item 3: Radiotherapy that burns cancer tissues [RBT]	24 (6.2)	70 (17.9)	87 (22.3)	2 (0.5)	3 (0.8)	204 (52.3)	390

The results drawn from an analysis of these items are presented below.

Item 1: The majority of respondents (n = 391) at 223 (57.0%), did not know that surgery or an operation is used to treat cervical cancer by removing the cancerous tissues [SOT]. In addition, 59 (15.1%) were neutral, while 69 (17.6%) agreed and 35 (9.0%) strongly agreed respectively (Missing data: 3).

Item 2: The majority of the respondents (n = 392), 275 (70.2) did not know that chemotherapy or medications are used to destroy cervical cancer tissues [CMT] while 74 (18.9%) were neutral, 22 (5.6%) agreed and 15 (3.8%) strongly agreed (Missing data: 2).

Item 3: Over 50% of the respondents (n = 390) at 204 (52.3), did not know that radiotherapy that burns cancer tissues is a treatment of cervical cancer (RBT]. In addition, 87 (22.3%) were neutral, while 70 (17.9%) agreed and 24 (6.2%) strongly agreed (Missing data: 4).

33. Table 4.15 Level of knowledge on the types of treatment for cervical cancer

		Frequency	Valid Percent
Valid	Low	255	65.4
	Average	91	23.3
	Good	44	11.3
	Total	390	100.0

34. Table 4.16 Overall level of knowledge regarding cervical cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	274	69.5	86.7	86.7
	Average	36	9.1	11.4	98.1
	Good	6	1.5	1.9	100.0
	Total	316	80.2	100.0	
Missing	System	78	19.8		
Total		394	100.0		

4.3.3 Objective 2: Attitude regarding prevention, screening, and treatment of cervical cancer

The study determined the attitude level of women of reproductive age with regards to the prevention, screening, and treatment of cervical cancer. The attitude levels that were noted are discussed below.

- 4.3.3.1 Attitude regarding the prevention of cervical cancer

The attitude regarding the prevention of cervical cancer was determined based on the psycho-social influences on the prevention of cervical cancer as discussed below. In this section, respondents were given three (3) items to determine their attitude on psycho-social influences on the prevention of cervical cancer. The items are reported in Table 4.17.

35. Table 4.17 Descriptive analysis of psycho-social influences on the prevention of cervical cancer

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: Cervical cancer is real and dangerous [CCR]	69 (17.5)	133 (33.8)	159 (40.4)	8 (2.0)	2 (0.5)	23 (5.8)	394

Item 2: Feeling at risk of cervical cancer [FRC]	35 (8.9)	62 (15.7	45 (11.5)	37 (9.4)	98 (24.9)	116 (29.5)	393
Item 3: Will go to the health facility to see the doctor/nurse [WHD]	32 (8.2)	34 (8.7)	171 (43.7)	20 (5.1)	11 (2.8)	123 (31.5)	391

The results from these items are presented below.

Item 1: The majority of the respondents (n = 394) at 159 (40.4%), were neutral with regards to the view that cervical cancer is real and dangerous [CCR]. Furthermore, 133 (33.8%) agreed and 69 (17.5) strongly agreed while 23 (5.8%) indicated that they do not know.

Item 2: Less than 30% of the respondents (n = 393) at 116 (29.5%), did not know whether they feel at risk of cervical cancer [FRC] while 98 (24.9%) strongly disagreed, 45 (11.5%) were neutral, 62 (15.7%) agreed and 35 (8.9%) strongly agreed that they did not feel at risk of cervical cancer (Missing data: 1).

Item 3: The majority of respondents (n = 391) at 171 (43.7%), were neutral on whether they would go to the health facility to see the doctor/nurse [WHD]. The results also show that 123 (31.5%) of the respondents did not know while 34 (8.7%) agreed and 32 (8.2%) strongly agreed that they would go to the health facility to see the doctor or nurse (Missing data: 3).

- 4.3.3.2 Attitude regarding screening for cervical cancer

The respondents' attitude towards screening was determined based on the psycho-social influence on the decision to screen for CC; cultural beliefs on screening for CC; factors that influence CC screening; economic factors, willingness to be screened for CC and the preferred sites for screening as discussed below.

- Psycho-social influences on screening of CC

In this section, respondents were given five (5) items to determine the attitudes regarding psycho-social influences on the screening of CC. The items are reported in Table 4.18 below.

36. Table 4.18 Descriptive analysis of psycho-social influences on the screening of CC

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: Will consult a family member before deciding to screen for cervical cancer [WDC]	6 (1.6)	7 (1.8)	32 (8.3)	80 (20.8)	49 (12.8)	210 (54.7)	384
Item 2: Will discuss with the spouse before deciding to screen for cervical cancer [WSS]	7 (1.8)	11 (2.8)	52 (13.3)	70 (17.9)	49 (12.5)	203 (51.8)	392

Item 3: Fear of being told a positive cervical cancer result [FBR]	28 (7.2)	125 (32.3)	133 (34.4)	20 (5.2)	12 (3.1)	69 (17.8)	387
Item 4: Fear and shame of going through the examination procedure [FEP]	27 (6.9)	146 (37.1)	125 (31.7)	29 (7.4)	18 (4.6)	49 (12.4)	394
Item 5: Lack of time to go for cervical cancer screening because of other responsibilities [LSR]	12 (3.0)	35 (8.9)	137 (34.8)	147 (37.3)	31 (7.9)	32 (8.1)	394

The results established from an analysis of these items are presented below.

Item 1: The majority of the respondents (n = 384) at 210 (54.7%), did not know whether they would consult a family member before deciding to screen for cervical cancer [WDC], 49 (12.8%) strongly disagreed, 80 (20.8%) disagreed, 32 (8.3%) were neutral and seven (1.8) agreed with the statement (Missing data: 10)

Item 2: A majority of the respondents (n = 392) at 203 (51.8%), did not know whether to discuss with their spouses before deciding to screen for cervical cancer [WSS] while 49 (12.5%) strongly disagreed, 70 (17.9%) disagreed and 52 (13.3%) were neutral. Only 11 (2.8%) agreed and seven (1.8%) strongly agreed to discuss with their spouse on their decision to go for cervical cancer screening (Missing data: 2)

Item 3: The majority of the respondents (n = 387) at 133 (34.4%), were neutral with regards to the fear of being told a positive cervical cancer result [FBR]. In addition, 125 (32.3%) agreed with the statement while 69 (17.8%) did not know (Missing data: 7).

Item 4: The majority of the respondents (n = 394) at 146 (37.1%), agreed that there was fear and feelings of shame while going through the examination procedure of cervical cancer screening [FEP]. A further 125 (31.7%) were neutral, while 49 (12.4%) did not know about their feelings in relation to cervical cancer screening.

Item 5: The majority of the respondents (n = 394) at 147 (37.3%), did not agree with the statement on the lack of time to go for cervical cancer screening because of other responsibilities [LSR]. The results also show that 137 (34.8%) were neutral, while 35 (8.9%) agreed and 12 (3.0%) strongly agreed with the statement.

All the statements in Table 4.18 were scored and summed up. The total scores were categorised as follows: 0 to 15 = Negative, 16 to 30 = Neutral and 31 to 45 = Positive

37. Table 4.19 Level of attitude due to psychosocial influences on cervical cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Negative attitude	126	32.0	34.1	34.1
	Neutral attitude	223	56.6	60.3	94.3
	Positive attitude	21	5.3	5.7	100.0
	Total	370	93.9	100.0	
Missing	System	24	6.1		
Total		394	100.0		

- Cultural beliefs on the screening for cervical cancer

In this study, respondents were given five (5) items that related to cultural beliefs that could influence women's attitude towards screening for cervical cancer. The items are described in Table 4.20.

38. Table 4.20 Descriptive analysis on the cultural beliefs on the screening for cervical cancer

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: Afraid of being screened by known health care provider [ABP]	13 (3.3)	41 (10.4)	187 (47.6)	112 (28.5)	33 (8.4)	7 (1.8)	393
Item 2: Shame to be associated with cervical cancer disease [SCD]	8 (2.0)	63 (16.0)	219 (55.6)	65 (16.5)	30 (7.6)	9 (2.3)	394
Item 3: Shame to be screened by male health service provider [SMP]	127 (32.2)	156 (39.6)	56 (14.2)	31 (7.9)	20 (5.1)	4 (1.0)	394
Item 4: Shame to be screened by a youth health service provider [SYH]	27 (6.9)	76 (19.4)	122 (31.1)	138 (35.2)	26 (6.6)	3 (0.8)	394
Item 5: The procedure is too intrusive [TPT]	71 (18.1)	70 (17.9)	109 (27.8)	114 (29.1)	12 (3.1)	16 (4.1)	392

The results obtained from an analysis of these items are presented below.

Item 1: The majority of the respondents (n = 393), 187 (47.6%) were neutral on whether they may be afraid of being screened by known health care providers while 112 (28.5%) disagreed, 41 (10.4%) agreed and 13 (3.3%) strongly agreed with the statement (Missing data: 1).

Item 2: The majority of the respondents (n = 394) at 219 (55.6%) were neutral on whether they may be ashamed to be associated with cervical cancer. In addition, 65 (16.5%) disagreed, 63 (16.0%) agreed and eight (2.0%) strongly disagreed.

Item 3: The majority of respondents (n = 394) at 156 (39.6%) agreed and 127 (32.2%) strongly agreed that they felt shame to be screened by male health service providers, while 56 (14.2%) were neutral and 31 (7.9%) disagreed.

Item 4: The majority of the respondents (n = 394) at 138 (35.2%) disagreed with the view of being ashamed to be screened by a youthful health service provider while 122 (31.1%) were neutral, 76 (19.4%) agreed and 27 (6.9%) strongly agreed.

Item 5: The majority of respondents (n = 392) at 114 (29.1%), disagreed with the view that the procedure is too intrusive while 109 (27.8%) were neutral, 70 (17.9%) agreed and 71 (18.1%) strongly agreed that the procedure is too intrusive (Missing data: 2).

All the statements in Table 4.20 were scored and summed up. The total scores were categorised as follows: 0 to 8 = Negative, 9 to 16 = Neutral and 17 to 25 = Positive.

39. Table 4.21 Level of attitude due to cultural beliefs on the screening of cervical cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive Attitude	14	3.6	3.6	3.6
	Neutral Attitude	225	57.1	57.8	61.4
	Negative Attitude	150	38.1	38.6	100.0

	Total	389	98.7	100.0	
Missing	System	5	1.3		
Total		394	100.0		

- Factors that influence CC screening

There are factors that may contribute to the late presentation of women with invasive cervical cancer. In this section, respondents were given six (6) items that indicate the factors that influence CC screening among women. The items are illustrated in Table 4.22.

40. Table 4.22 Descriptive analysis on factors that influence cervical cancer screening

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: Feeling shy to go for screening [FSC]	18 (4.6)	93 (23.8)	199 (51.0)	51 (13.1)	10 (2.6)	19 (4.9)	390
Item 2: Fear to hear the test results [FHT]	23 (5.8)	98 (25.0)	218 (55.7)	28 (7.1)	5 (6.1)	19 (4.8)	391
Item 3: Fear of being embarrassed [FBE]	17 (4.3)	74 (18.9)	234 (76.7)	40 (16.9)	5 (6.6)	21 (5.4)	391
Item 4: Feeling not at risk because not sexually active [FRS]	22 (5.6)	169 (43.2)	128 (32.7)	27 (6.9)	16 (4.1)	29 (7.4)	391
Item 5: Do not suffer of any symptoms [DSS]	23 (5.9)	155 (39.5)	126 (32.1)	22 (5.6)	13 (3.3)	53 (13.5)	392
Item 6: Not aware of availability of	10 (2.6)	39 (9.9)	160 (40.8)	134 (34.2)	25 (6.4)	24 (6.1)	392

screening services [NSS]							

The results derived from the above responses to these items are presented below.

Item 1: The majority of the respondents (n = 390) at 199 (51.0%), were neutral about feeling shy of or being shy to go for screening, while 93 (23.8%) agreed and 18 (4.6%) strongly agreed with the statement (Missing data: 4).

Item 2: The majority of the respondents (n = 391), 218 (55.7%) were neutral about the fear of getting the test results while 98 (25.0%) agreed and 23 (5.9%) strongly agreed with the statement (Missing data: 3).

Item 3: The majority of the respondents (n = 391), 234 (76.7%), were neutral about the fear of or being embarrassed when a Pap smear is being performed, 40 (16.9%) disagreed, while 74 (18.9%) agreed and 17 (4.3%) strongly agreed with the statement (Missing data: 3).

Item 4: The majority of the respondents (n = 391) at 169 (43.2%) agreed while 22 (5.6%) strongly agreed about feeling not at risk because they were not sexually active. However, 128 (32.7%) were neutral, and 29 (7.4%) stated that they did not know (Missing data: 3).

Item 5: The majority of the respondents (n = 392) at 155 (39.5%), agreed that they would not seek screening if they do not suffer from any symptoms of cervical cancer. The results also show that 126 (32.1%) respondents were neutral, while 53 (1.5%) did not know whether they suffered from the symptoms (Missing data: 2).

Item 6: The majority of the respondents (n = 392) at 160 (40.8%) were neutral on the awareness of the availability of screening services. In addition, 134 (34.2) disagreed with the statement, which means that they are aware of the availability of screening services for cervical cancer at the health facility. However, 39 (9.9%) agreed and 10 (2.6%) strongly agreed with the statement and this shows that they were not aware of the availability of screening services (Missing data: 2).

- Economic factors that influence CC screening uptake

Economic factors are very important in determining the utilisation of cervical cancer screening services. In this study, the participants were given five (5) items that related to the economic factors that are likely to hinder women from utilising cervical cancer screening services. The items are described in Table 4.23.

41. Table 4.23 Descriptive analysis on the economic factors that influence CC screening uptake

Item/Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Do not Know n (%)	Total n ()
Item 1: Distance is less than 1 KM from home to the health facility [TCA]	64 (55.1)	31 (26.7)	19 (16.4)	0 (0.0)	2 (1.7)	0 (0.0)	116
Item 2: Distance is between 1 and 5 km from home to the health facility [DHF]	43 (29.5)	66 (45.2)	37 (25.3)	0 (0.0)	0 (0.0)	0 (0.0)	146
Item 3: Distance is between 5 and 10 km	20 (22.2)	49 (54.4)	20 (22.2)	1 (1.1)	0 (0.0)	0 (0.0)	90

from home to the health facility [DHH]							
Item 4: There is lack of transport from home to the facility [DMT]	25 (29.8)	51 (60.7)	6 (7.1)	1 (1.2)	1 (1.2)	0 (0.0)	84
Item 5: Transport cost is not affordable [TTF]	34 (31.2)	65 (59.6)	7 (6.4)	0 (0.0)	3 (2.8)	0 (0.0)	109

The results from an analysis of these items are presented below.

Item 1: Of the respondents (n = 116), 64 (55.1%) strongly agree and 31 (26.7%) agreed that the distance from home to the health care facility is less than one kilometre [TCA] while 19 (16.4%) were neutral.

Item 2: Of the respondents (n = 146), 66 (45.2%) agreed and 43 (29.5%) strongly agreed that the distance from home to the health care facility is between one and five kilometres [DHF] while 37 (25.3%) were neutral.

Item 3: Of the respondents (n = 90), 49 (54.4%) agreed and 20 (22.2%) strongly agreed that the distance from home to the health care facility is between five and ten km [DHH] while 20 (22.2%) were neutral.

Item 4: Of the respondents (n = 84), 51 (60.7%) agreed and 25 (29.8%) strongly agreed that there is lack of transport from home to the facility [DM] while six (7.1%) were neutral.

Item 5: Of the respondents (n = 109), 65 (59.6%) agreed and 34 (31.2%) strongly agreed that transport cost is not affordable [TTF] while seven (6.4%) were neutral.

- Willingness to be screened for CC (Pap smear test)

This study revealed that the majority of the participants (n = 3940), 354 (89.8%) reported that they were willing to undergo Pap smear tests for cervical cancer screening and only 40 (10%) reported that they did not want to undergo Pap smear. This study did not assess the reasons for not wanting to go for Pap smear screening.

- Preferred sites for screening (Pap smear test)

The majority of the respondents (n= 394) at 323 (81.9%), indicated that they preferred to have This is likely the result of inadequate or lack of cervical screening services for a Pap smear test at the local Primal Healthcare clinic, while 23 (6.1%) preferred the health centre. Moreover, 81 (20.6%) preferred at the district hospital, 24 (6.1%) preferred a private clinic and 11 (2.8%) had no preferences. The study concluded that the local primary health care clinics and district hospitals were the most preferred sites where the majority of women would go for cervical cancer screening.

- 4.6.3.3 Attitude regarding treatment and chances of recovery when CC is detected early

The majority of the respondents (n = 394) at 131 (33.3%), reported that they did not know that CC can be treated if detected early while 94 (23.9%) strongly disagreed, 69 (17.6%) agreed and 56 (14.2%) could not agree or disagree. It was concluded that the attitude regarding the treatment for CC, if detected early, was low.

- Overall attitudes regarding cervical cancer

The study determined the overall attitudes due to psycho-social and cultural influences towards cervical cancer. The findings are presented in Table 4.24.

42. Table 4.24 Overall attitude regarding cervical cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Negative attitude	47	11.9	12.8	12.8
	Neutral attitude	304	77.2	83.1	95.9
	Positive attitude	15	3.8	4.1	100.0
	Total	366	92.9	100.0	
Missing	System	28	7.1		
Total		394	100.0		

Table 4.24 above shows the overall level of attitudes regarding cervical cancer. The majority of the respondents (n = 394) at 304 (83.1%), scored at a neutral attitude level, 47 (12.8%) scored at a negative attitude level and only15 respondents (4.1%) scored at a positive attitude level. The study concluded that the majority of respondents (83.1%) possessed a neutral level of attitude towards cervical cancer screening.

4.3.4 Objective 3: Practices regarding the prevention, screening, and treatment of cervical cancer

Practices regarding the prevention of cervical cancer were determined based on prevention through HPV vaccination; smoking tobacco products; having a steady sexual partner and the usage of contraceptives for more than five years. These are discussed below.

- 4.3.4.1 Practices regarding the prevention of cervical cancer

    - HPV vaccination for cervical cancer prevention

The study revealed that all the respondents (100%) did not receive HPV vaccination. Regarding the question as to why they were not vaccinated, the majority (n = 394), at

384 (97.4%), reported that they did not know about the HPV vaccine, while five (1.3%) of the respondents reported that they had never heard of the HPV vaccine and five (1.3%) of the respondents thought that cancer had no vaccine.

- Smoking tobacco products

The study revealed that the majority of the respondents (n = 394) at 313 (79.8%) smoked cigarettes or tobacco products, while 79 (20.2%) reported that they had been smoking six months before the study was conducted.

- Having a steady sexual partner

The study further reported that the majority of the respondents (n = 394) at 363 (92.4%), had steady sexual partners and 30 (7.6%) did not have. Those who reported having steady sexual partners were asked whether their partners were circumcised. The results show that (n = 364) a total of 57.7% reported that their partners were not circumcised while 153 (42.0%) reported that their partners were circumcised. The study determined the reasons for not being circumcised. Of the 57.7% respondents of those who reported that their partners were not circumcised, nearly 96 (48.7%) indicated that circumcision cervices were not available in the area. Ninety-one (46.2%) reported that their partners were not aware of the availability of circumcision services while nine (4.6%) reported that their partners refused to be circumcised and one (0.5%) attributed this to cultural reasons.

- Usage of oral contraceptives > 5 years

The respondents were asked to state their views on the usage of oral contraceptives and the responses are illustrated in Table 4.25.

43. Table 4.25 Descriptive analysis on the usage practices of oral contraceptives

	n (%)
Yes	175 (44.6%)
No	217 (55.4%)
Total	392 (100%)
Missing data	2 (0.5%)

Table 4.25 indicates that the majority of respondents (n =392) at 217 (55.4%), reported that they had not been using oral contraceptives while 175 (44.6%) of the respondents agreed that they were using oral contraceptives. Of those that had been using oral contraceptives, 26 (14.8%) had used them for less than two years, 56 (31.8%) had been using them for less than five years while 94 (53.4%) had used them for more than five years. A greater proportion of the respondents used contraceptives for longer than five years and they might be at risk of acquiring CC.

4.3.4.2 Practices regarding the screening for CC

Practices regarding screening for CC were determined in terms of the uptake of CC screening practices.

- Uptake of CC screening (Pap smear test)

In this study, the respondents were given five (5) items that determined the patterns on how often respondents undergo cervical cancer screening and the findings are described in Table 4.26.

44. Table 4.26 Descriptive analysis on the frequency of Pap smear (cervical) screening

Frequency	n (%)
Once in a lifetime	76 (19.6%)
Annually	16 (4.1%)
Once every two years	15 (3.9%)
Once every three years	17 (4.4%)
Never	263 (68.0%)
Total	387 (100%)
Missing data	7 (1.8%)

Table 4.26 above indicates that the majority of the respondents (n = 387) at 263 (68.0%), had never gone for Pap smear screening, 76 (19.6%) had a Pap smear test once in their lifetime, and 16 (4, 1%) had a Pap smear screening on an annual basis, while 15 (3.9%) had Pap smear tests every two years, and 17 (4.4%) had cervical screening once every three years. The study revealed that 124 (32%) respondents had been screened at different intervals in their lifetime. The majority of women who were screened fell in the age brackets of 35 - 39 (26.65%); 30 - 34 (21.0%) and 45 - 49 (19.45%). The majority of women who had been screened for cervical cancer were single (51.2%) with a Pearson Chi-Square p value ($p= 0.003$). This means that single women are more likely to undergo cervical screening. Regarding educational level, 64.5% of the women had attained secondary school, 17.7% had attained tertiary level education, while only 2.4% of those that had not attended school had been screened. A Pearson Chi-Square analysis proved a significant correlation between education level and cervical cancer screening for prevention with ($p = <0.001$). Furthermore, 53.2% of the respondents who had been screened were employed compared to 31.5%

who were unemployed. The Pearson Chi-Square proved that there is a significant correlation between employment and cervical cancer screening ($p = <0.001$). A further 68% of the respondents had never undergone cervical screening and 32% had cervical screening once in their lifetime, which indicates a poor uptake of CC screening among the respondents.

- Practices regarding the treatment of CC

The majority of the respondents (n = 394) at 340 (87.4%), reported that they did not know that there are any factors that affect the chances of recovery and treatment options of CC with only 24 (6.2%) who agreed.

4.4 SUMMARY

This chapter presented the study findings on the knowledge, attitude and practice regarding the screening, prevention, and treatment of cervical cancer. The mean and Standard deviation were calculated to determine the participants' level of knowledge regarding the screening, prevention, and treatment of cervical cancer. The overall level of knowledge, attitude and practices regarding the screening, prevention, and treatment of cervical cancer was determined. Pearson correlation coefficients were calculated to show the relationship between the variables that describe the knowledge, attitudes, and practices regarding cervical cancer. The chapter concluded that the majority of participants scored low on the level of knowledge about cervical cancer, had neutral attitudes, and a low uptake of cervical screening.

CHAPTER FIVE

DISCUSSIONS OF PHASE ONE RESULTS

5.1 INTRODUCTION

The previous chapter presented the results of the study. This chapter presents the discussions of the results of Phase one of the study. It outlines the results in relation to the theoretical frameworks and findings from previous similar results.

5.3.1 Socio-demographic data of the respondents

Age has been found to be a significant factor towards accessing cervical cancer screening services. In this study, the majority of respondents, that is, 22.1%, were in the age group of 35 - 39, followed by 19.5% in the 30-34 age group. The results also showed that 14.2% of the respondents were in the age group of 25 - 29, 12.2% were in the 45 - 49 age group, 10.4% were in the 20 - 24 years age group and 4.6% were in the age group of 18 - 19 years. Most women were within the 30 - 39 years age bracket, where cervical cancer has been found to be the most common cause of morbidity and mortality, and accounting for 16% of all cancers diagnosed in this age group (WHO, 2015). In congruence with these results, other studies have revealed that women who often uptake screening services for cervical cancer tend to be younger (aged 30 - 39), married, mostly having been pregnant, better educated and had used contraception (Mabelel et al., 2018; Makurirofa et al., 2019). Thus, educational activities on the screening, prevention and treatment regarding cervical cancer should be targeted to the age group from 20 years and above so as to empower them with knowledge and a positive attitude to take up cervical screening as they are part of the target population for cervical screening in Namibia.

Over half (58.1%) of the respondents were single, followed by married respondents (27.7%). Co-habiting women amounted to 9.8% of the respondents. Similar sentiments were observed in Kenya, Zambia, and Zimbabwe (Lim & Ojo, 2017; Makurirofa et al., 2019).

Socio-economic factors also play a significant role in accessing and the utilisation of screening services. Various studies also noted that females who are financially independent, and have a formal education have a higher likelihood of accessing screening services. A high education level should be accompanied by a good level of knowledge on cervical screening, prevention, and treatment to promote positive attitudes towards the uptake of cervical cancer screening among the target population (Gatumo et al., 2018; Jassim et al., 2018; Lim & Ojo, 2017; Ndejjo et al., 2016).

The majority of the respondents (208, 52.8%) had 1 to 2 births, followed by 35.3% that had three or more births while respondents with 0 births amounted to 11.9%. Studies such as one by Sankaranarayanan et al. (2014), revealed that the number of child births directly correlates with the uptake of screening services, which implies that earlier and frequent contact with health care providers increases the positive attitude towards cervical screening.

A majority of the respondents (59.8%) had stayed in the area of study for six years or more, followed by 28.0% that had stayed between 3 and 5years. These groups had a chance of knowing the availability of cervical cancer screening services at the health facilities if health workers were disseminating information at the point of care (Sudanga et al., 2013). The majority stayed in the area in search of employment, hence

this is a golden chance to acquire the knowledge on screening, prevention, and treatment of cervical cancer.

Over half of the respondents (51.4%) were unemployed, followed by 34.1% employed respondents while self-employed respondents accounted for 6.6%. The findings revealed that 90.8% of the respondents could not afford transport costs to the health facility. This study's results showed that 66 (53.2%) of the women who had been screened were employed compared to 39 (31.5%) who were unemployed. These results are supported by the results of similar studies in Nepal, Kenya and elsewhere (Gatumo et al., 2018; Abudukadeer et al., 2015; Morema et al., 2014; Sudanga et al., 2013). In view of this, unemployed women may find it difficult to pay the transport fee to and from the healthcare facilities. Therefore, the implication is that only women who are employed are most likely to attend cervical screening services because they can afford transport costs.

The most spoken home languages by the respondents are Herero with 22.8% of the respondents, followed by Damara/Nama with 19.0%. In addition, the Oshiwambo speaking respondents amounted to 16.5% and the San language speaking respondents amounted to 14.2%. The inhabitants in the Otjozondjupa region predominantly speak these four languages. The study revealed that 48.9%, 30.8% and 9.4% of the respondents have attended primary, secondary and tertiary education, respectively. However, it was reported in this study that only 2.3% of the respondents agreed that leaflets / brochures on cervical cancer are available in local languages. Ndejjo et al. (2016) note that an improvement in all educational standards and methods aimed at enabling health information access would be an important tool to public health and, in this case, the cervical cancer prevention and control programme.

- General knowledge regarding the prevention of cervical cancer

Knowledge regarding preventive measures of cervical cancer is the main determining factor for women to decide whether to go for cervical screening or not (Table 4.2). The study revealed that the majority of the respondents (67.4%), do not know that there are usually no signs nor symptoms of early cervical cancer, hence it should be detected early before any noticeable advancement. In accordance with this study results, Lim and Ojo (2017) claim that a significant number of women displayed absolute lack of knowledge about cervical cancer and admitted being lacking knowledge about the disease and the available services as a reason for not seeking cervical screening for the early detection of cancer. Similar studies conducted in Ghana and Cambodia reported that the majority of women did not know about the preventive measures and treatment options for cervical cancer and therefore they did not seek cervical cancer screening services (Hayden & Paterson, 2013; Ebu et al., 2014; Touch & Oh, 2018). In addition, Finochario-Kessler et al., (2016) and Sudanga et al., (2013) state that a significant number of women get diagnosed when cervical cancer has reached an advanced stage.

The respondents were asked whether they were aware that women should attend regular cervical screening. The majority of respondents (46.4%) did not know that attending regular cervical screening services for the early detection of cervical lesions increases the chances of cervical cancer prevention and recovery, while 23.9% were neutral. The results from this study concur with those from a study carried out in Cambodia, where the majority of women were not aware of the fact that cervical screening should be performed regularly and, they believed that it was needed only when a symptom appears (Stanley, 2014; Touch & Oh, 2018). In contrast, literature states that there are women who believe that cervical cancer is curable when it is

detected early (Sudanga et al., 2013; Shiferaw et al., 2017; Makurirofa et al., 2019). These results could explain why 68.0% of the participants in this study had never undergone cervical cancer screening with only 32% having undergone cervical cancer screening, although it is higher compared to the screening coverage in similar studies conducted in Malawi, Uganda, Ethiopia, and Tanzania (Carvalho, 2016; Mukamba et al., 2017; Chaka et al., 2018 & Mabelele et al., 2018).

The study determined the knowledge of women regarding the risk factors to cervical cancer. It revealed that only an insignificant number of respondents (4.8% and 11.7%) held the view that avoiding unprotected sexual intercourse reduces the chances of being infected with HPV, a risk factor for cervical cancer. Makurirofa et al., (2019) and Moore and Driver (2014) also note in their study's results that a significant number of women do not have adequate knowledge about the fact that avoiding unprotected sexual intercourse reduces the chances of cervical cancer.

A few respondents (5.3% and 10.2%) strongly agreed and agreed, respectively that, avoiding multiple male partners prevents STIs and HPV that may cause cervical cancer, while the majority (35.0%) did not know. Similar studies in Zimbabwe, Kenya and Yemen also noted that the majority of women do not have adequate knowledge on this construct (Makurirofa et al., 2019; Kei et al., 2016; Abdul-Aziz, 2012). Therefore, the WHO (2014) advocates that all countries should include HPV vaccination in the national immunisation programmes. This study observed that there is a zero percent coverage of HPV vaccination among the respondents.

The smoking of cigarettes has an association with cervical cancer. The study revealed that an insignificant percentage of women (8.6%) knew that avoiding the smoking of

cigarettes prevents the development of cervical cancer. Similar findings by Lim and Ojo (2017) report that the majority of women had a low level of knowledge regarding the association of cigarette smoking and the development of cervical cancer. Therefore, there is an urgent need to educate women about the association between smoking and cervical cancer.

The literature indicates that avoiding early sexual intercourse reduces the chances of cervical cancer. However, this study revealed that a mere 3.1% and 4.1% of the participants agreed with the literature. In accordance with these results, the literature revealed that an insignificant number of women reported low knowledge that avoiding early sexual intercourse prevents the development of cervical cancer (Makurirofa et al., 2019; Touch & Oh, 2018; Alsbeih, 2014; More & Driver, 2014).

Male circumcision is known to indirectly protect women from cervical cancer. The majority of participants (37.0%) did not know that avoiding unprotected sexual intercourse with an uncircumcised partner reduces the chance of cervical cancer. On the contrary, findings from similar studies revealed different sentiments where women demonstrated adequate knowledge on the increased risk for cervical cancer when one has an uncircumcised sexual partner (Sudanga et al., 2013; Mabelele et al., 2018). Therefore, the literature advocates that countries should increase circumcision coverage among the population that would lead to the reduction of HPV infection and in that way reduce the risk of cervical cancer in women (Auvert et al., 2005; WHO, 2013, 2014; Morris & Hankins, 2017; Gatumo et al., 2018).

In Namibia, Voluntary Male Medical Circumcision (VMMC) programme have been implemented and rolled out in all the regions (MoHSS, 2010). The fact that only 11%

of the participants in this study agreed with the statement reveals that there is a lack of knowledge among women of reproductive age that circumcision has an indirect benefit in reducing the chances of developing cervical cancer when the partner is circumcised. Thus, it is important to include the benefits of circumcision in the educational programmes so that women can become aware of and be able to encourage their sexual partners to go for circumcision.

HPV is a major risk factor for cervical cancer. However, a majority of the respondents (86.8%) did not know that HPV infection is a major risk factor for cervical cancer with only 4.8% agreeing with the statement. This is an indication that respondents had low knowledge on HPV infection in relation to cervical cancer. Previous studies conducted in Zimbabwe, Ethiopia, China, and Malawi claim that, just as noted in the present study's findings, the overall knowledge of the public about HPV infection is low (Makurirofa et al., 2019; Chaka et al., 2018; Calvalho, 2016; Abudukadeer et al., 2015).

The WHO (2014) recommended that countries should incorporate HPV vaccination in the national immunisation programmes that target girls between 9 and 13 years of age. Moreover, over 90% of the respondents did not know that being vaccinated against HPV reduces the chances of cervical cancer while only 4.1% had that knowledge. A few low to middle income countries in Southern Africa have introduced HPV vaccination in their national vaccination programmes as per the WHO (2014) recommendations. The Government of the Republic of Namibia, through the MoHSS, developed guidelines for the implementation of HPV vaccination but it is yet to be implemented and rolled out (MoHSS, 2018).

Though oral contraceptives are one of the methods used in birth control, it has a correlation with cervical cancer. This study noted that a majority of the respondents (56.7%) disagreed that using birth control pills for less than five years reduces the chances of cervical cancer while 32.4% did not know and only 3.1% agreed. In contrast, Mabelele et al., (2018) claim that a significant number of women had adequate knowledge on the reality that the use of oral contraceptives for less than five years reduces the chances of cervical cancer. The findings suggest the need to empower healthcare providers in implementing health educational programme activities at healthcare facilities since they remain key in passing vital information that would inform health seeking behaviour.

Very few respondents (6.2%), reported that tests that examine the cervix are used to detect pre-cancerous lesions and the majority (87.1%) did not know, while a third of the respondents (30.8%) agreed that cervical cancer can be detected early by using Pap smear tests. These results concur with the observations made by Touch and Oh et al., (2018) in their report that the majority of women in Cambodia were not aware that a Pap smear test is used to detect pre-cancerous lesions. The current study results clearly indicate that respondents have a low level of knowledge on the purpose of cervical screening, which leads to a low uptake of cervical screening. Hence, there is a need for an educational programme that can mitigate this challenge. Screening for early detection and treatment is the cornerstone of secondary prevention.

The possession of knowledge about the types of cervical cancer is important to women as this may serve as a cue to cervical cancer screening. The current study revealed that almost 100% of the respondents did not know that squamous cells carcinoma is a type of cervical cancer while 92.8% did not know that metastatic cervical cancer is the

cancer that spreads to other parts of the body and only 1.5% had appropriate knowledge on these constructs (Table 4.5). The findings are supported by Mabelele et al., (2018), who concluded that indeed women have low knowledge regarding the types of cervical cancer. This is a cause for concern in that almost all the respondents had no knowledge on the types of cervical cancer, especially metastatic cervical cancer which spreads to other parts of the body if not detected early.

The knowledge about the symptoms suggests that cervical cancer is very important to women because it influences their attitude towards cervical cancer screening. The majority of the respondents (79.6%) scored a low level of knowledge rating regarding the symptoms of cervical cancer (Table 4.7). It is regrettable to note that less than 20% of the respondents were aware that bleeding between regular menstrual periods and experiencing a heavy or unusual discharge that may be watery, thick, and possibly having a foul smell, are the cardinal symptoms of cervical cancer. A study by Shiferaw et al., (2017) that was carried out in Ethiopia also indicated that women had little knowledge on the specific symptoms of cervical cancer. Literature emphasises that signs suggesting cervical cancer include irregular and unusual heavy vaginal bleeding, bleeding after sexual intercourse, bleeding after menopause, bleeding after douching, bleeding after pelvic examination and painful intercourse (Aswathy et al., 2012; Bansal et al., 2015; Chaka et al., 2018; Gatumo et al., 2018; Mabelele et al., 2018; Makurirofa et al., 2019). The results demonstrate that in the absence of adequate knowledge on the signs and symptoms of cervical cancer, most women might not seek cervical screening services. Therefore, an educational programme intervention should empower women with knowledge on the signs and symptoms that suggest the presence

of cervical cancer, which would result in women developing positive attributes towards cervical screening uptake.

The knowledge on the availability of healthcare facilities, where cervical screening services are available is crucial to the success of prevention services. The results indicate that the majority (30.5%) of the respondents did not know that healthcare providers are reliable sources of appropriate information on cervical cancer while only 13.2% agreed (Table 4.15). The study's results concur with those by Touch and Oh (2018) and Shiferaw et al., 2017), who state that the majority of women reported that healthcare providers did not recommend them to undergo cervical cancer screening when they visited healthcare facilities. The authors further state that provider recommendation is a single most important factor for the receipt of screening and other preventive measures. This might be the result of a lack of health care providers' efforts in recommending clients to undergo cervical cancer screening. This indicates that there is a need to educate and mobilise healthcare workers on the importance of the dissemination of information regarding cancer screening, prevention, and treatment to women of reproductive age, who are the intended recipients. The study's results related to healthcare workers might point to the need for further training of Namibian rural healthcare workers on cervical cancer screening, prevention, and treatment. Furthermore, the study revealed that 10.9% (Figure 4.3) of the respondents were not educated and these women could largely benefit from healthcare provider-initiated education on cervical cancer.

The women were also examined on their sources of information through which they had learnt or become aware of cervical cancer screening. The study revealed that a significant number of respondents (34.4%) did not know that friends/relatives who

visited a health facility could provide information on cervical cancer (Table 4.8). In contrast, a study conducted in Bahrain revealed that relatives and friends accounted for 18% of those networks responsible for the dissemination of cervical cancer information. However, in the Democratic Republic of Congo, conversation with relatives and friends accounted for 73.4% of the respondents, which is much higher than the results in this study (Ali-Risasi et al., 2014; Shiferaw et al., 2017; Touch & Oh, 2018).

Respondents were also asked whether information regarding cervical cancer is accessible on media platforms. The majority of respondents (40.1%) did not know that health information on cervical cancer was available on the mass media platforms such as radio, TV, and newspapers. The current study results agree with the results by Abudukadeer et al. (2015) and Touch and Oh (2018). The integration of health education awareness programmes into television and radio dramas have been implemented in the mobilisation and awareness campaigns in other African countries with successful results (Shiferaw et al., 2017). Therefore, it remains a potentially important method of health promotion and community mobilisation in rural low educated communities of Namibia to increase access to health information.

- Knowledge regarding screening of cervical cancer

The knowledge about the availability of cervical cancer services in the area is an important factor and this enables women to determine the usefulness of such service. The majority of the respondents (90.8%) reported that they did not know whether cervical cancer screening services were available in their health centres, outreach points and district hospitals. Similar studies conducted in Kenya, Uganda, Nigeria, and

Nepal revealed that the majority of women reported that they were not aware whether cervical cancer screening services were available at the healthcare facilities (Ndejjo, et al., 2016; Kei et al., 2016; Gatumo et al., 2018; Kashyap et al., 2019).

Having no knowledge in navigating health care facilities and services, and lack of information regarding the direction of where and when to obtain services deterred some women from accessing the available services. This was reported as a barrier to cervical cancer screening (Ngungi et al., 2012; Lim & Ojo, 2017). This indicates that most women may visit the health centres/clinics for any other reasons but would leave without enquiring about cervical cancer screening services and these are greatly missed opportunities. Therefore, posters with messages that are translated into commonly spoken local languages indicating the availability of cervical screening services should be available and accessible to women at the public and private healthcare facilities.

It is important for women to have knowledge regarding the indications for cervical screening. The descriptive analysis on the indication for CC screening (factors associated with cervical cancer) revealed that the majority of the participants had diverse views that centred on the ‘do not know’, ‘strongly disagreed’ and ‘disagreed’ as well as being neutral with regards to the statements (Table 4.12). The majority of the respondents reported that they did not know about the factors associated with cervical cancer. In support of these findings, a very insignificant number of women could mention at least one cervical cancer risk factor in a similar study conducted in Tanzania (Mabelele et al., 2018).

The respondents were further asked to indicate their views on HIV and cervical cancer. The majority of the respondents (44.8%) were neutral on whether being infected with HIV, the virus that causes AIDS, increases the chances of getting cervical cancer or not. HIV prevalence is high in most parts of Namibia, and it is a concern that only 13% of the participants in this study agreed that being infected with HIV increases the chances of getting cervical cancer. Information dissemination should be strengthened so that women can know that HIV infected women are more prone to cervical cancer, hence the need for regular cervical cancer screening every year for HIV positive women, for early detection and better treatment outcome.

Over a third of the respondents (38.2%) were neutral with regards to the fact that being sexually active at a young age (early sexual intercourse) increases the chances of cervical cancer with only 9.0% were well informed. In contrast, similar studies conducted in Tanzania, Ethiopia and India reported that a significant number of women had adequate knowledge because they could mention that delaying sexual debut and avoiding multiple pregnancies could prevent the development of cervical cancer (Shiferaw et al., 2017; Mabelele et al., 2018 & Kashyap et al., 2019).

Furthermore, the study revealed that 41.8% of the respondents did not know that having unprotected sexual intercourse with multiple male sexual partners increases the chance of cervical cancer while 21.3% were neutral. Kei et al., (2016) also note that the majority of women in other similar studies did not know and only 2.3% were aware of this risk factor. An educational programme should strengthen interventions on the prevention methods such as abstinence, avoiding earlier sexual debut, sticking to one faithful sexual partner, and continued and consistent condom usage as well as voluntary medical male circumcision (VMMC) to reduce the risk of factors that

increase the chances of contracting infection through unprotected sexual intercourse. Thus, educational interventions should emphasise that HPV infection among the male population increases the risk of HPV infection in women and thus increase the possibility of cervical cancer in women. The Namibian VMMC programme has been implemented and rolled out to all district hospitals in the country. However, it is not known whether women are aware of the indirect benefits to them when their partners are circumcised. Therefore, it is vital to include the benefits of VMMC to women in the cervical screening educational interventions so as to create awareness among the population at risk, including men.

Family history in relation to cervical cancer is a major concern in the prevention of the disease. The study revealed that the majority of participants (31.2%) did not know that family history of cervical cancer increases the chance of cervical cancer while 24.3% strongly disagreed and 12.5% agreed. Similar studies conducted in Zimbabwe, Ethiopia, and India, supported these findings (Makurirofa et al., 2019; Kashyap et al., 2019; Chaka et al., 2018; Momenimovahed & Salehiniya, 2017). Educational interventions on cervical cancer screening, prevention and treatment should emphasise that a person from a family with a history of cancer has an increased risk of developing cancer, and in this case cervical cancer. Therefore, regular cervical screening is vital to allow the early detection of pre-cancerous lesions, access to treatment and better chances of recovery.

- Knowledge regarding the treatment of cervical cancer

The knowledge about treatment options for cervical cancer is important in the control of cervical cancer (Table 4.14). The study findings revealed that the majority of respondents (52.3% - 70.2%) do not know of any type of treatment for cervical cancer.

However, an insignificant number of respondents, ranging from 3.8% - 9.0%, knew the types of cervical cancer treatments. In accordance with these results, a similar study in Tanzania revealed that only 0.3% of the respondent's recognised radiation as the method of cervical cancer treatment, which was less compared to the results in this study (Mabelele et al., 2018). This indicates that information on the types of cervical cancer treatment is not much available to the public for the women to know as to what types of treatments for cervical cancer are available in the health care facilities.

5.3.2 Attitude of women of reproductive age regarding the prevention, screening, and treatment of cervical cancer

- Attitude regarding prevention

Psycho-social influences regarding cervical cancer prevention are one of the main determining factors on whether women will seek cervical cancer prevention services or not. This study revealed that the majority (40.4%) of the participants expressed neutral feelings that cervical cancer is real and dangerous and did not feel at risk of cervical cancer (Table 4.16). Similar studies in the systematic review reported as well that the majority of women thought that they were not at risk of cervical cancer (Kashyap et al., 2019; Bansal et al., 2015). In addition, Morema et al., (2014) argue that the importance of perceived severity and susceptibility of a disease guides the decision to seek a service such as cervical screening. Thus, an increased perceived risk would enhance the need to seek for cervical screening in this population.

It is regrettable to note that an insignificant number of participants perceived themselves as at risk of cervical cancer. Cross tabulation in this study revealed that the majority of respondents who reported feeling at risk for cervical cancer are in the age

bracket of 30-34 (23.7%); 35-39 and 40-44 (18.6%). Furthermore, among the majority (56.3%) who reported feeling at risk of cervical cancer, 57.7% had attained a secondary level of education while 50.5% were employed women. The Pearson Chi-Square test revealed a significant relationship between attitude regarding cervical cancer and educational level ($p = <0.01$) as well as employment status ($p = <0.01$). However, 57.3% of the respondents who reported not feeling at risk of cervical cancer were unemployed. Being unemployed seems to be one of the reasons for the majority of women presenting late at the healthcare facilities with invasive cervical cancer that could have been detected early and treated (Makurirofa et al., 2019).

The respondents were asked about their feelings regarding whether to consult the doctor or not in case of abnormal vaginal bleeding between the periods. The majority of respondents (43.7%) expressed neutral feelings on the construct. In contrast, a similar study conducted in the Democratic Republic of Congo revealed different sentiments in that the majority of the respondents were willing to consult a medical doctor in the case of abnormal bleeding between menstruations and consulted doctors for cervical screening (Ali- Risasi et al., 2014).

- Attitude regarding the screening for cervical cancer

Partners have a major role to play for the women to take up cervical screening. The study revealed that over 50% of the respondents do not know whether it is necessary to discuss the decision to attend cervical screening with their spouses. These results are in accordance with the results from other studies which revealed that the majority of male partners in SSA did not permit their female partners to go for cervical screening. The reasons indicted were fear of the violation of the pride and privacy of

their women through unnecessary body exposures and being seen as unfaithful to their partners (Williams et al., 2013; Finocchario-Kessler et al., 2016; Lim & Ojo, 2017). This implies that women are afraid to discuss cervical screening with their spouses. Hence, there is a need for men to be included in the educational programmes of intervention so that they can become informed about the dangers of cervical cancer, the importance of preventive measures and curability if detected early with their support being crucial in ensuring the health of their partners.

Receiving cervical screening results is a challenging moment for many women. The study revealed that over a third of respondents (34.4%) were neutral for the fear of being told about a positive cervical cancer result. In similar studies conducted in Bahrain, Argentina, and Saudi Arabia, it was reported that the majority of the respondents were afraid of receiving positive cervical screening results (Jassim et al., 2018; Al Khudairi et al., 2017; Gamara et al., 2015). Educational programme interventions should emphasise that a positive result at an early stage, such as pre-cancerous lesions, can be treated and cured. Therefore, the only method to determine the onset of cervical cancer early is through cervical screening.

Furthermore, the respondents were asked about the challenges they face in their attempt to take up cervical screening. Of the respondents, 37.1% agreed that they were afraid and ashamed of cervical screening procedures while 31.7% remained neutral. In accordance with these results, other existing studies (Zimbabwe, Ethiopia, Saudi Arabia, and India) reported about the fear and shame that is felt over the screening procedure (Abudukadeer et al., 2015; Shiferaw et al., 2017; Al Khudairi et al., 2017; Chaka et al., 2018; Makurirofa et al., 2019).

Some women have tight schedules and as a result, they lack a convenient time to visit the healthcare facilities for cervical screening. The study revealed that the majority of respondents (37.3%) disagreed while 34.8% remained neutral and only 8,9% agreed with the statement (Table 4.18). In support of these findings, Chaka et al., (2018) reported that a significant number of women could seek cervical screening services, but they were unable to go due to fear of positive results. The findings in this study indicate that respondents had time that could be utilised to go and seek cervical cancer screening but there was a lack of knowledge on the availability of such services, and their importance and benefits.

Cultural beliefs have a strong influence on women's attitude regarding cervical cancer screening. The study determined the cultural beliefs that impede women from seeking cervical screening (Table 4.19). Almost 50% of the respondents remained neutral, whether afraid to be screened by known healthcare providers or not. Lim and Ojo (2017) support these results. However, 81.9% of the respondents in this study preferred to have Pap smear tests at the local primary healthcare clinics and health centres with some failing to go there because of fear of being screened by known health care workers. About 28.5% disagreed with the statement, which means that they were not afraid of being screened by known healthcare workers and this result is encouraging.

Over half of the respondents (55.6%), remained neutral with regards to feeling shame for being associated with the cervical cancer disease. Respondents in other studies conducted in Kenya, Bahrain, Zambia, and Zimbabwe viewed a positive result as a death sentence and thus they saw no point in going for screening while others found solace in ignorance as they believed that 'what you do not know cannot kill' (Lim & Ojo, 2017; Gatumo et al., 2018; Jassim et al., 2018 & Makurirofa et al., 2019).

Therefore, an educational programme intervention should teach women that receiving a positive cervical screening result is not a death penalty but a golden chance to access treatment and be cured from the disease.

The presence of male healthcare providers in the provision of reproductive health services is a major barrier towards the uptake of cervical cancer screening. The study revealed that the majority (72%) of the respondents indicated that they were ashamed of being screened by male health service providers. A cross tabulation in this study revealed that the majority of respondents who agree with the statement are in the age brackets of 35 - 39 (24.4%) and 30 - 34 (18.0%) respectively, with 60.4% of them being single. Off those who did not attend school, 9.9% agreed and 13.5% disagreed with statement. The results based on employment status showed that 50.5% disagree with the statement that they felt ashamed during screening services provided by male healthcare providers. The results call for the MoHSS, local NGOs, the international community, and other stakeholders to make the budget available to recruit more female healthcare providers so that women can access screening services by choice. Contrarily, in this study, 23.4% of women between 30 and 34 as well as 18.9% of women between 40 and 44 years of age disagreed with the statement. This implies that there is hope that the majority of women would attend the services if they are well-educated and informed about the benefits of cervical screening.

Similar studies conducted in Bahrain, Kenya, Ethiopia, and Uganda also revealed that the majority of women reported feeling embarrassed if a male doctor or male nurse performed the test (Twinomujuni et al., 2015; Awake et al., 2017; Jassim et al., 2018 & Gatumo et al., 2018). Women in general find it difficult to undress for a procedure and this is heightened when undressing before a male healthcare service provider.

Modesty is a concern because women are very conservative about exposing their private parts especially to members of the opposite sex. It is therefore difficult for most women to seek cervical cancer screening especially if a male healthcare provider is performing the test. Therefore, the gender of the care provider can be a major hindrance to cervical screening.

Contrasting sentiments from similar studies conducted in Malawi and Kenya show that a significant number of women revealed that they would be comfortable with male healthcare service providers because they are politer than female healthcare providers (Carvalho, 2016 &, Sudanga et al., 2016). This is encouraging with regards to the efforts to educate women about the benefits of cervical cancer screening for the early detection and curability despite it being performed by male healthcare providers. However, the need to recruit and train more female healthcare providers is eminent owing to the size of the population that is at risk. The objective is to enable those that feel embarrassed to undertake screening freely so as to avert morbidities and mortalities resulting from cervical cancer.

Studies have reported that women considered youthful healthcare service providers as barriers to the uptake cervical screening (Table 4.19). The study's results revealed that a significant number of respondents (35.2%), confirmed that they were ashamed of being screened by a young health service provider. The study's cross tabulation indicated that the majority of respondents who were ashamed of being screened by young healthcare providers were in the 35-39 age brackets and they accounted for 23.3%, while 55.4% were single; 55.9% had attained secondary education and 52.9% were unemployed. However, the study revealed that 50.5% did not feel ashamed to be screened by young healthcare providers.

In accordance with these results, women in the SSA face stigmatisation and embarrassment whenever they discuss or attempt to access cervical screening services being provided by youthful healthcare providers (Lim & Ojo, 2017). However, a significant number of women reported that they did not feel ashamed, which is encouraging in the face of an aging population of healthcare providers in the public services in Namibia. Most of the senior staff members are retiring such that the services are now being provided by youthful nurses at the primary healthcare clinics and health centres in the regions. Therefore, educational programme interventions should educate women about adherence to ethical issues by the healthcare providers and that confidentiality and privacy be ensured at all levels of care.

Nonetheless, 36.8% of the respondents strongly indicated that the procedure is too intrusive while 29% of the respondents disagreed with the statement. In contrast, similar studies conducted in Bahrain, Ethiopia, and China revealed different sentiments in that the majority of respondents believed that the procedure is not intrusive and that respondents agreed to have cervical screening even if the doctor did not perform it (Abudukadeer et al., 2015; Jassim et al., 2018 & Chaka et al., 2018). These results can support educational programme activities seeking to address the fear of undergoing cervical screening.

The descriptive statistics revealed that the highest means is 3.83 and the lowest is 2.66. The highest standard deviation was 1.298 and the lowest was .940. This means that the responses to the statements were divergent, and the majority of respondents did not agree with the statements. Hence, the majority of respondents had negative to neutral attitudes on the cultural influences regarding CC screening (Annexure J).

There are some factors that might influence women's attitude regarding cervical screening uptake. The study revealed that the majority (76.7%) of respondents remained neutral on the factors that might influence women not to seek cervical cancer screening services (Table 4.21). The majority of women did not attend cervical screening because they were felt shy to undergo the procedure. Over 50% of the participants expressed neutral feelings with regards to this construct while 23.8% said that they were not shy. Similar findings were reported elsewhere in similar studies (Lim & Ojo, 2017; Chaka et al., 2018; Gatumo et al., 2018; Jassim et al., 2018 & Makurirofa et al., 2019). Shyness is considered a major barrier to women seeking cervical cancer screening. Therefore, it is important to educate women about the purpose of cervical screening in relation to the health benefits. Most women believe that receiving a positive test result implies unavoidable death, thus women do not seek cervical screening. Similar studies conducted in South Africa, Bahrain and Kenya revealed similar sentiments (Ramathuba et al., 2019; Jassim et al., 2018 & Sudenga et al., 2016).

Embarrassment is one of the major barriers that impedes women from seeking screening services. The study revealed that the majority of participants (76.7%) were neutral regarding the fear of being embarrassed during cervical cancer screening. In accordance with these results, Ramathuba et al. (2019) state that women perceived cervical screening procedures as unpleasant/embarrassing and thus would not take up screening. In contrast, a similar study conducted in Ethiopia revealed different sentiments in that the women did not perceive the cervical screening procedure as unpleasant or embarrassing (Chaka et al., 2018). This suggests that there is still hope that if women are empowered with the knowledge on screening, prevention, and

treatment of cervical cancer, they can develop positive attitudes towards cervical screening.

The perceived risk of a disease is a vital cue to seeking health recommended behaviour. Less than 50% of the respondents confirmed that they did not feel at risk because they were not sexually active. In accordance with these results, Mukama and Ndejjo (2017) report that the majority of women thought that they were not at risk of cervical cancer. The WHO (2014; 2018) recommends that women of reproductive age between 30 and 49 years and HIV negative, should be screened for cervical cancer every third year, while those HIV positive should be screened every year, to increase the chances of early detection of cervical cancer and ultimately recovery. In this study, a majority of the respondents who reported not feeling at risk of cervical cancer were in the age brackets of 30 - 34 (18.2%) and 35 - 39 (23.3%). The results indicate that the respondents were not aware of the probability of being at risk of cervical cancer. Thus, an improvement in screening services will not be itself adequate to contribute to increased screening uptake, unless there is an understanding in the multifaceted health beliefs that are likely to influence the women's willingness to obtain screening. Furthermore, individual perceptions of the problem, susceptibility, severity; benefits, barriers, and the likelihood of the action to be taken that can contribute towards the attainment of the goal and motivation for an individual to perform cervical screening.

In contrast, Sudanga et al., (2016) reported different sentiments in that the majority of women reported that they were at risk of cervical cancer. Hayden and Paterson (2013) argue that what people believe about a health condition or behaviour determines what they would do about it. In this study, the majority of respondents (56.3%) who reported that they feel at risk for cervical cancer were single while 32.3% were married, 57.7%

attained secondary education and 50.5% were employed. This could be attributed to the fact that single women are possibly exposed to information through different media and as such they can access cervical screening for early prevention. Married women are usually in constant contact with healthcare providers during maternal health care services and thus they have high chances to accessing cervical screening. In addition, employed respondents have financial security that enables them to afford transport costs to and from healthcare services. A Pearson Chi-Square test revealed that there is a significant correlation between the educational level and feeling at risk of cervical cancer ($p = < 0.01$) as well as between employment and feeling at risk of cervical cancer ($p = < 0.01$) respectively (Annexure I).

About 39.5% of the respondents indicated that they did not take up screening because they did not present with any symptoms, while 32.1% remained neutral with regards to this construct. In accordance with these results, similar studies (Kenya, Ethiopia, and Zimbabwe) reported that the majority of women did not see the need for cervical screening because they did not present with any symptoms (Kei et al., 2016; Mabelele et al., 2018 & Makurirofa et al., 2019). The results clearly suggest that there is an urgent need to educate women about the importance of routine and regular cervical screening because cervical cancer does not present symptoms in the early stage. Therefore, it is very important to undergo screening for the early detection and increased probability of better treatment outcomes.

Economic factors are the main determinants for the uptake of CC screening services in many communities. The study revealed that 54.4% of the participants reported that the distance from home to the health facilities was 5 – 10 km (Table 4.22). Consequently, 90.8% of the respondents indicated that they could not afford the

transport costs to travel to the health facilities. In congruence with these results, the additional costs of transportation to access services was also reported to have contributed to the low uptake of cervical cancer screening (Alemayehu & Mariam, 2013; Teng et al., 2014 & Gatumo et al., 2018). Unaffordable transport costs and long distances to the healthcare facilities might explain why 263 (68.0%) of the respondents in this study had never undergone cervical screening in their lifetime. The Pearson Chi-Square test also revealed that there is a significant correlation between employment and the uptake of cervical screening ($p = < 0.01$). Therefore, efforts should be made to bring screening services to the people via mobile services from health centres and clinics.

The respondents were asked whether they were willing to undergo screening for cervical cancer prevention. The study revealed that the majority (89.8%) of respondents reported that they were willing to undergo cervical screening and only 10% reported that they did not want to undergo cervical screening. The reasons for the refusal were not assessed in this study. Several studies had similar results (Shiferaw et al., 2017; Jassim et al., 2018; Gatumo et al., 2018; Chaka et al., 2018; Makurirofa et al., 2019). The majority of this study's respondents were willing to go for cervical screening and this is a motivating factor. Hence, psycho-social issues and cultural beliefs that act as barriers to cervical cancer screening services should be addressed through appropriate and effective educational programmes.

The majority of respondents as represented by 323 (81.9%) of them indicated that they preferred to have Pap smear tests at the local Primary Healthcare clinics while 81 (20.6%) preferred the district hospitals. Similar results were reported in Bahrain and Ethiopia (Jassim et al., 2018 & Chaka et al., 2018). The primary healthcare clinics are

the facilities of choice. Therefore, the health care facilities should be fully equipped with screening consumables and instruments as well as skilful healthcare workers to carry out the procedure.

Regarding the attitude towards the treatment of CC, the study revealed that the majority (33.3%) of participants did not know that CC could be treated if detected early. In contrast, similar studies revealed different sentiments in that the majority of women believe that cervical cancer can be treated and cured provided it is detected early (Bansal et al., 2015; Jassim et al., 2018; Touch & Oh, 2018).

5.3.3 Practices of women of reproductive age regarding the prevention, screening and treatment of cervical cancer

- Practices regarding the prevention of cervical cancer

The HPV vaccine is recommended for CC prevention, and this is advocated for girls at the age of 9 and13 years before sexual debut (WHO, 2014). The study determined the respondents' HPV vaccination status and revealed that all the respondents (394) (100%) have not been vaccinated against HPV. In contrast, in Rwanda, the first country to introduce the HPV vaccination in Africa, more than 1.15 million girls in Rwanda received a first dose of HPV vaccine in 2011 - 2018 as part of the vaccination campaign programme. Thus, population-level HPV vaccination coverage in Rwanda increased from 6% for girls born in 1993 up to a maximum of 99% for those born in 2002 (Sayinzoga et al., 2020). The achievement in HPV vaccination in Rwanda indicates that HPV vaccination is doable. Therefore, an educational programme for women on the screening, prevention and treatment of cervical cancer should include

information about the benefits of HPV vaccination among women, especially girls under 12 years of age.

The study further determined the reasons why the women were not vaccinated. The majority (97.4%) of the participants did not know about the availability of the HPV vaccine at the facilities. Touch et al., (2018) and Carvalho (2016) note that the majority of women in Cambodia and Malawi were not aware about the availability of HPV in their healthcare facilities. The MoHSS (2018) launched the national cervical cancer prevention guidelines, which should be made available at all health facilities and outreach services so that young girls may have access to the HPV vaccine for CC prevention when introduced.

Smoking is considered a risk factor for CC. This study revealed that the majority (79.8%) of respondents did not smoke cigarettes nor other tobacco products while 20.2% reported that they had smoked within six months before the study. In congruence with these results, Momenimovahed and Salehiniya (2017) revealed that cigarette and tobacco smoking is related to the risk of squamous cell carcinoma of the cervix. Tobacco by-products have been found in the cervical mucus of women who smoke. Researchers believe that these substances damage the DNA of the cervix cells, and this may contribute to the development of cervical cancer. Smoking also makes the immune system to be less effective in fighting HPV infections *(https://flo.health/about-us/eugenia-tikhonovich).* HPV plays a vital role as the connection between smoking and cervical cancer because tobacco smoke is a known contributing cause (risk factor) for the developing cervical cancer. Smoking limits the immune system's ability to fight HPV and if left untreated, it can develop into cancerous lesions.

The study revealed that a significant number (92.4%) of respondents had steady sexual partners) while only 7.6% did not have steady sexual partners. It is encouraging that almost all the respondents reported that they had a steady sexual partner, which is a practice that reduces the chances of contracting STIs, including HPV that causes cervical cancer. Those who reported having steady sexual partners were asked whether their partners were circumcised and 57.7% reported that their partners were not circumcised while 42.0% reported that their partners were circumcised. The reasons for not being circumcised included the non-availability of circumcision services, partners who were not aware about the availability of circumcision services, partners who refused to undergo circumcision and cultural reasons.

Literature revealed that the use of oral contraceptives for more than five years is a risk for CC (Lim & Ojo, 2017). The study determined the usage of oral contraceptives among the respondents. It was reported that while the majority (55.4%) of the respondents have not been using oral contraceptives for more than five years, a significant number (44.6%) had used oral contraceptives for more than five years. The extensive use of oral contraceptives places one at the risk of cervical cancer. Women who have used oral contraceptives for five years or more years have a higher risk of developing cervical cancer than women who have never used oral contraceptives. The longer a woman uses oral contraceptives, the greater the increase in her risk of cervical cancer. According to the American National Cancer Institute (2018), oral contraceptives might increase the risk of cervical cancer by changing the susceptibility of cervical cells to persistent infection with high-risk HPV types (the cause of virtually all cervical cancers).

- Practices regarding the screening and treatment of cervical cancer

The uptake of cervical screening among women of reproductive age is the best decision in ensuring the early detection of pre-cancerous lesions, thereby allowing early treatment options, and towards increasing the chances of better treatment outcomes. In this study, the majority of respondents (68.0%) had never gone for cervical screening. In congruence with these results, similar studies conducted in the DRC Congo, Uganda, Malawi, Ethiopia, South Africa, and Zimbabwe indicate the existence of a low uptake of cervical screening among women despite having adequate knowledge on the prevention, screening, and treatment of cervical cancer (Ali-Risasi et al., 2014; Ndejjo et al., 2016; Carlvalho, 2016; Chaka et al., 2018; Ramathuba et al., 2019; Makurirofa et al., 2019). The findings are a testimony that knowledge alone may not necessarily inform the attitude that would translate into practicing the recommended health behaviour. Therefore, there is an eminent need to empower women with regards to the benefits of regular cervical screening for the early detection of precancerous lesions using a Pap smear test or VIA to ensure early access to treatment and the cure of the disease.

The observed low uptake of cervical screening in this study portends a dangerous sign as a low uptake among the predictors of its use (women of reproductive age) might have a negative effect on the attitude of the general population towards the uptake of the screening procedure. The major reasons for the low screening uptake in this study were: the lack of knowledge, lack of the belief that cervical screening diagnoses cancer, the belief that the screening procedure is painful, fear of the test results, the unavailability of the test, shyness and embarrassment, no perceived risk, not at ease with male and youth healthcare service providers, not being aware of the availability

of screening services, and the unaffordable cost to reach the healthcare facilities where the services are available.

The MoHSS has adopted the WHO (2014) guidelines on cervical cancer screening and recommended cervical cancer screening for all eligible women every three years on condition that the previous results were clean. The guidelines further recommend that HIV positive women should be screened every year (MoHSS, 2015). At least 4.4% of the respondents were screened as per the National Cervical Cancer Prevention Guidelines (2018). However, the present study did not determine the HIV status of these respondents.

Though the coverage rate of cervical screening in this study is low (32%), it was revealed that the majority (89.8%) of respondents reported that they are willing to undergo a screening test for cervical cancer while only 10% reported that they did not want to undergo cervical screening tests. The fact that women are willing to take up cervical screening is encouraging and demands that correct, appropriate and updated information about the dangers of cervical cancer, screening benefits, and improved myths and accessibility to services would increase the uptake of cervical cancer screening in Otjozondjupa region.

In contrast, some countries have attained a high coverage of cervical cancer screening. In Bahrain, 40.7% of the women undergo a Pap smear test in their lifetime with a similar percent being reported in countries such as Britain, the United Arab Emirates and Qatar (Jassim et al., 2018). These differences could be attributed to the different data collection tools, education level, availability of resources for maximising

mobilisation, information dissemination at a large scale and improved accessibility of healthcare services.

5.5 SUMMARY

This chapter presented the results of the study based on objective one [Phase one] in relation to the knowledge, attitude, and practices of women of reproductive age regarding the screening, prevention and treatment of cervical cancer. The researcher drew on the literature reviewed in Chapter two to assist in the synthesis of the study results and to compare the current knowledge. The chapter concluded with observations made from the identified dynamics in Chapter four of this study.

CHAPTER SIX

THE DEVELOPMENT OF AN EDUCATIONAL PROGRAMME TO ENHANCE THE UTILISATION OF CERVICAL CANCER SESRVICES AMONG WOMEN OF REPRODUCTIVE AGE IN OTJOZONDJUPA REGION, NAMIBIA

6. 1 INTRODUCTION

The development of the conceptual framework was based on Dickoff et al.,'s (1968), survey list as presented in Chapter three of the current study. This chapter presents Phase 3 of this study, whose aim was the development of an educational programme to enhance cervical cancer screening utilisation among women of reproductive age living in Otjozondjupa region, Namibia.

Three prominent theories were adopted in the development of the educational programme. Nicholls and Nicholls` cyclic curriculum development model (1978); Kolb`s experiential learning theory (1974) and Knowles` model of andragogy (1990) were adopted in the development of this study education programme. The application of the theory and models are described in the next sections.

The educational programme outlines activities that should be implemented to address the identified dynamics and empowering women of reproductive age with the knowledge, attitude and practices regarding the screening, prevention, and treatment of cervical cancer. A programme is a plan of activities that is done or included in the development of something (Hornby, 2015; Mulunga, 2018). In this study, an educational programme refers to planned activities that are designed for educating and/or training women of reproductive age to improve their knowledge, attitudes, and

practices and developing positive attributes towards the screening, prevention, and treatment of cervical cancer. The results from phase one of this study were utilised to formulate the content of this programme.

6.2 DEVELOPMENT OF AN EDUCATIONAL PROGRAMME

Phase 3 of this study is about programme development. Nicholls and Nicholls` cyclic curriculum development model (1978); Kolb`s experiential learning theory (1974) and Knowles` model of andragogy (1990) were adopted in the development of this study educational programme. The application of the theory and models are described in the next sections.

The programme was developed in line with the educational expectation that a programme should have a specific focus and be based on need assessment results (Neshuku & Amukugo, 2015). The study results were as follows: The study respondents (recipients) scored low on the level of knowledge regarding cervical cancer in respect of the preventive measures, types, symptoms, sources of information, availability of screening services, indications for cervical screening (associated factors) and treatment. The respondents also scored a neutral level of attitudes on psychosocial influences on prevention and screening, cultural beliefs that influence cervical screening, factors that influence screening and treatment as well as the low coverage and uptake of cervical screening. The study's results on the practices regarding screening, prevention, and treatment revealed that there was low (32%) cervical screening uptake, non-existent (0%) HPV coverage, a significant number of respondents (53.4%) that used oral contraceptives for more than 5 years while the majority of respondents (87.4%) did not know about the curability of cervical cancer.

The programme development comprised of a title, purpose/goal, programme objectives, teaching methods, target population, implementation phase, evaluation, programme approach, as well as the content (programme components) that contain activities that assisted the realisation of the programme goal.

6.2.1 Name of the programme:

An educational programme to empower women of reproductive age with the knowledge of cervical screening, prevention, and treatment of cervical cancer in the Otjozondjupa region, Namibia.

6.2.2 The purpose of the educational programme

The purpose of this educational programme is to assist women of reproductive age to improve their knowledge, attitudes, and practices with regards to the screening, prevention, and treatment of cervical cancer.

6.2.3 Objectives of the programme

The objectives of the programme are described as follows:

- To enhance the knowledge of women of reproductive age on the prevention, screening and treatment of cervical cancer in the Otjozondjupa region;
- To enhance the attitudes of women of reproductive age regarding the prevention, screening, and treatment of cervical cancer in the Otjozondjupa region; and
- To enhance the utilisation of cervical cancer screening services among women of reproductive age living in the Otjozondjupa region.

6.2.4 Target population of the study

The target population are women of reproductive age in the Otjozondjupa region.

6.2.5 Benefits of the programme

The educational programme might benefit the women by empowering them with the knowledge, attitudes, and practices for the prevention, screening, and treatment of cervical cancer. The programme might also contribute to improvements on the cervical screening uptake in the Otjozondjupa region and the society at large.

6.2.6 Programme structure/design

The programme will be implemented in the form of a workshop that will last for three days. The workshop will be held in two districts of Otjozondjupa region, mainly Otjiwarongo and Grootfontein. The programme components constitute the implementation phases, programme process, programme approach and programme content and they are described below.

- 6.2.6.1 Implementation phases

There will be three implementation phases, namely orientation: phase (1), working phase (2) and termination phase (3). The above phases are described in detail in Chapter seven: Table 7.2 (page 268).

- 6.2.6.2 Programme process

The educational programme consists of the orientation phase, working phase, and termination phase. The orientation phase serves to introduce the purpose and objectives of the programme to the participants and to discuss all the logistics. The

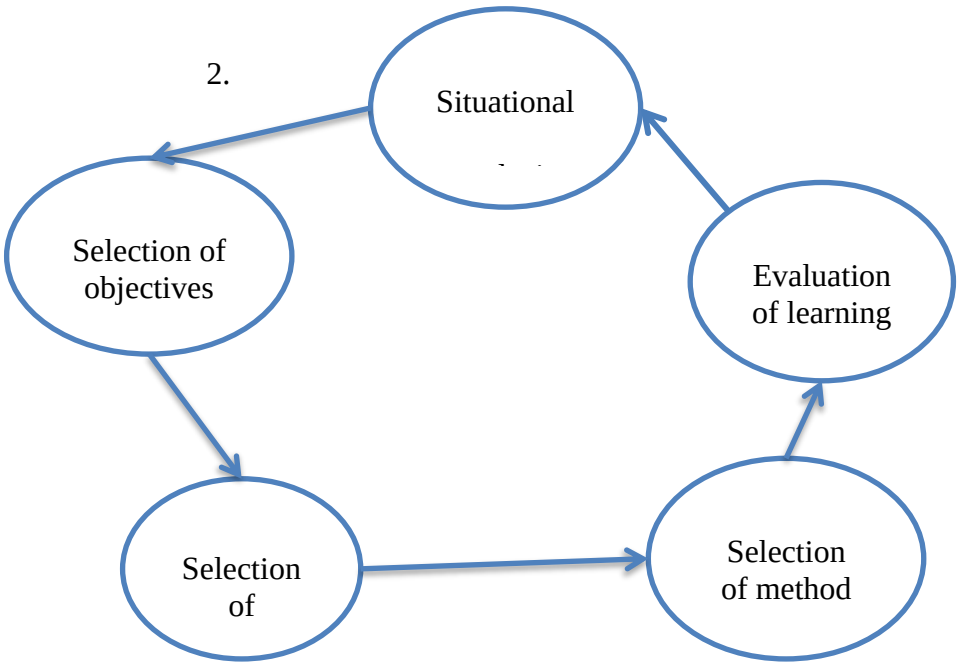
logistics include the venue, date and time of the workshop. The working phase focuses on the presentation of different sessions and group work activities that are designed to enhance the utilization of cervical cancer services among women of reproductive age in Otjozondjupa region. The termination phase focuses on an evaluation of the workshop activities.

- 6.2.6.3 Educational approaches

In this programme, the agent (facilitator) has adopted an interactive learning style based on the participants' experiences and previous knowledge. The programme adopted Nicholls' cyclic curriculum development model, Kolb`s experiential learning theory, and Knowles` adult learning theory. Kolb's experiential learning advised the use of mixed methods in learning and learners' assessment. These mixed methods include role play, simulation, group discussions, reflection, and feedback in plenary sessions. The methods (techniques) are in line with the adult learning needs of the participants such that the session would make the learning activities more interesting and stimulating and thus, creating a conducive environment for learning.

- Nicholls and Nicholls` cyclic curriculum development model

Nicholls and Nicholls (1978) identified five steps that need to be considered when developing a curriculum. Figure 7.1 below shows the steps that were adopted in the development of the educational programme.



44. Figure 6.1 Steps adopted from Nicholls and Nicholls' curriculum development model as cited in Mulunga (2018)

Situational analysis: This was conducted in the first phase of this study in which the dynamics (challenges) were identified. The dynamics that were identified were as follows:

1. Low level of knowledge on the prevention, screening, and treatment of cervical cancer among women of reproductive age in terms preventive measures, the types, symptoms, sources of information, availability of screening services, indications for screening (associated or risk factors) and the treatment of cervical cancer.

2. Neutral level of attitudes towards cervical cancer prevention, screening and treatment in terms of psycho-social influence on the prevention and screening, cultural beliefs on cervical screening, economic factors and other factors (barriers) that influence the screening uptake among women of reproductive age and treatment.

3. Low prevention, screening, and treatment coverage among women of reproductive age in terms of cervical screening for the early detection and curability, HPV vaccination, and usage of oral contraceptive.

Selecting objectives: The objectives of the educational programme were selected as outlined in section 6.2.3 of this study based on the findings from Phase one of the study.

Selection and organising the content: The content for the educational programme was selected and organised in terms of the results and sub-objectives (the content is illustrated in Table 7.

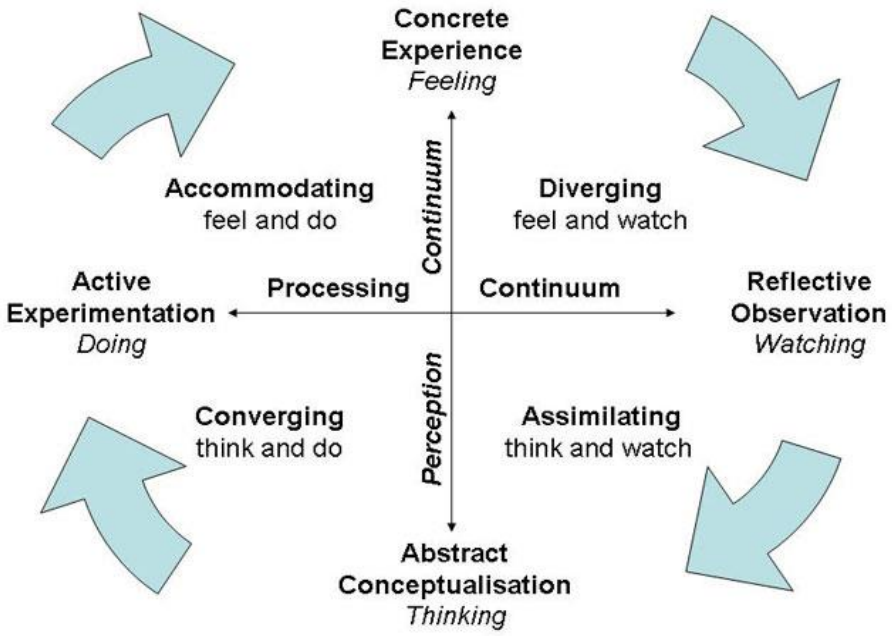
Selection of methods of teaching: The methods or strategies to be used during the programme implementation were selected based on the content and objectives to be covered (methods used are discussed in Chapter seven: Table 7.3 – 7.5 of this study

- Kolb`s experiential learning theory

Kolb's theory (1974) states that adult learners learn in a variety of ways, and that each student has a preferred style of learning. Teaching effectiveness may be enhanced by using each of the preferred styles with at least a portion of the time allocated to each style during the educational sessions.

Kolb's theory (1974) postulates that learners learn in four principal or types of learning styles. These four principles are concrete experiences, reflective observation, abstract conceptualities, and active experimentation. The process of teaching using each of the four learning styles is referred to as "teaching through the cycle." Kolb's theory emphasises that adults need practical activities that can be applied to address

challenges identified in Phase one of this study. According to Kolb`s theory of experiential learning, people learn from direct experience and through active participation in activities (Mcleod, 2017). Four principles or styles of Kolb's experiential learning theory are illustrated in Figure 6.2.



45. Figure 6.2 Kolb `s experiential learning cycle (Macleod, 2013; 2017)

Concrete experience: During this stage, participants diverged educational activities by feeling or performing better in situations that require the idea-generation or conceptualization (Kolb, 1974 & Macleod, 2017). In this study programme participants would gain new knowledge on cervical cancer screening, prevention and treatment. The new knowledge could be enhanced through participation in small group discussions where the recipients exchange ideas and learn from each other, listen with an open mind and receive personal feedback.

Reflective observation: At this stage, learners try to assimilate new knowledge and draw new understandings of the phenomenon and thus, reflect on any inconsistencies between experience and understanding (Kolb & Boyatzis, 1999; Mulenga, 2018). The assimilation of learning preference links, at this stage, to reflective observation and abstract conceptualisation. According to Macleod (2017), assimilating learning preferences (watching and thinking) involves concise and logical approaches in teaching. Participants need good, clear, and simple explanations on the phenomenon because they excel at understanding wide-ranging information which is organised in a clear and logical format. In this study, the participants would reflect on their previous knowledge and try to understand the difference between previous knowledge and the implications it has on their health and newly acquired knowledge that might change their belief about being at risk of cervical cancer (Nwobondo & Ba-Break, 2015). A wide range of information will be disseminated in small sessions, thereby enabling the participants to understand the information on cervical screening, prevention and treatment of cervical cancer.

Abstract conceptualisation: In this stage, learners try to converge new knowledge or a modification of an existing abstract (the person has earned from their experience) (Kolb, 1974; Macleod, 2017). The converging learning style is a stage (link) that is marked by abstract conceptualisation and active experimentation (Macleod, 2017). People with a converging style like to use their learning to find solutions to practical issues through experimenting with new ideas to simulate, and to work with practical applications. Participants in this study would try to think and reflect on the new knowledge/ideas and weigh the benefits of following the recommended behaviours

that reduce the risk of a particular illness, in this case cervical cancer, and thus bring about positive attributes of screening practices (Glanz et al., (2008).

Active experimentation: This stage involves participants planning and trying out what they would have learnt (doing). Macleod (2017) explains that the stage links abstract conceptualisation and active experimentation and this is called accommodating (doing and feeling). As a result, the participants practically engage with a positive attitude and health seeking behaviours regarding the prevention, screening, and treatment of cervical cancer (Glanz et al., 2015; MacLeod, 2017). This study's participants will acquire knowledge that can change their negative attributes to positive attributes or confidence that can make them to seek cervical screening to prevent cervical cancer. The application of this model is described in Chapter seven of this study (page 256).

- Knowles` model of andragogy (1990)

Andragogy is the art and science of adult learning (Knowles, 1990). Knowles suggests some principles that are related to adult learning, and these were applied in the development and implementation of this programme. According to Knowles, adult learners are mature and as such they need to be involved in the planning and evaluation of their learning activities. Adult learners have personal experiences, and they learn through experience and their mistakes. In the present case, small group discussions will be formed to promote learning and enhance self-esteem among participants.

Adults are interested in learning in situations where they relate the learning to what they already know, since they have accumulated rich experiences that they bring to any new experience. They will be more inspired when the learning activities are based on their previous experiences and knowledge (Knowles, 1990; Nangombe, 2016).

Participants will be given a chance to state their expectations from the educational programme, which should be reviewed at the end to determine whether the programme is to the satisfaction of participants. Based on the pre-test results, the researcher (facilitator) will capitalise on the recipients' (participants) experience on the subject matter by maximising prior learning as a source for improving and enriching participants' experiences (Nangombe, 2016). In this study, pre-testing questions will be prepared to determine the level of knowledge, attitudes, and practices of women of reproductive age with regards to cervical screening, prevention, and treatment thereof.

Adult learners are self-directed; they tend to learn what they think will help them in their personal life. They are interested in an educational programme that focuses on their needs and support their desired behaviour (Knowles, 1990). In this study, the educational programme content is based on the dynamics (challenges) identified in Phase one of this study (situational analysis), to which the participants have responded. It is important to explain the reasons for specific activities and different methods to be used during programme activities implementation. At the end of the training programme, participants will be given a post-test to determine both the level of knowledge gained in the training and whether their level of knowledge has increased or not. The difference between the marks attained in the pre-test and post-test will determine the attainment of the programme goal. The participants will also evaluate themselves to determine whether their expectations and programme objectives are met.

- 6.2.6.4 Content of the educational programme

The programme content was compiled based on the results from Phase one of this study and information from the reviewed literature. The content includes activities

seeking to empower women of reproductive age with the knowledge to inform and impact positively on the attitudes (positive attributes) and practices on cervical screening, prevention, and treatment of cervical cancer.

- Description of the programme content

The content of the programme is based on the objectives to be achieved and the guidelines to be followed to address the identified problems. The objectives are described in Table 6.1.

46. Table 6.1 Content of the educational programme

Objectives	Content
Objective 1: To enhance the knowledge of women of reproductive age on the prevention, screening, and treatment of cervical cancer	▪ General knowledge regarding the prevention of cervical cancer: preventive measures, types, symptoms, and sources of information on cervical cancer ▪ Knowledge regarding the screening for cervical cancer: availability of cervical screening services and indications for screening (associated or risk factors). ▪ 3. Knowledge regarding the treatment of cervical cancer: types of treatment for cervical cancer
Objective 2: To enhance the attitudes of women of reproductive age regarding the prevention, screening, and treatment of cervical cancer.	▪ Attitudes towards prevention and screening ▪ Treatment of cervical cancer: Psycho-social influences, cultural beliefs, factors (barriers) that

	influence women for not seeking cervical screening, economic factors, and treatment
Objective 3: To promote the uptake of cervical screening among women of reproductive age regarding prevention, screening, and treatment of cervical cancer.	▪ HPV vaccination ▪ Smoking ▪ Sexual partner ▪ Use of oral contraceptives ▪ Uptake of screening ▪ VIA as the preferred method ▪ Curability of cervical cancer

- 6.2.6.5 Teaching methods

In this study, the researcher (facilitator) considered the following teaching methods to facilitate learning: lecturer presentation using power point presentation, learning aid usage (images and pictures), small group discussions, role-play, and brainstorming, feedback in plenary and summarising important points/facts at the end of each session.

6.3 SUMMARY

This chapter described the process of programme development to empower women of reproductive age on the knowledge, attitudes and practices regarding the screening, prevention, and treatment of cervical cancer. The results of situational analysis [Phase 1] of the study and the literature review informed the contents of the programme. The chapter elaborated on programme components that include the implementation phases, process, educational approaches, and content. The programme was also based on different theories that informed the methods of teaching and styles of adult learning.

The next chapter discusses the guidelines for the implementation and evaluation of the programme.

CHAPTER SEVEN

GUIDELINES FOR THE IMPLEMENTATION AND EVALUATION OF AN EDUCATIONAL PROGRAMME TO ENHANCE THE UTILISATION OF CERVICAL CANCER SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN OTJOZONDJUPA REGION, NAMIBIA

7.1 INTRODUCTION

The previous chapter presented the development of the educational programme on the knowledge, attitude and practices regarding the prevention, screening, and treatment of cervical cancer for the women of reproductive age. Objective four of the study was to identify the guidelines for the implementation and evaluation of educational programme on cervical cancer among women of reproductive age [Phase 4]. This chapter presents the identified guidelines for implementing and evaluating an educational programme that seeks to empower women of reproductive age on the screening, prevention, and treatment of cervical cancer. The guidelines for the situation analysis, facilitation, implementation, and evaluation of the programme are described in Table 7.1 of this study.

The development of the guidelines in this study was informed by the evidence from Phase one of this study. Objective four of the study was to identify the guidelines for the implementation and evaluation of the educational programme on cervical cancer among women of reproductive age [Phase 4]. Two prominent and relevant theories were used to inform the educational approaches: Kolb's experiential learning theory and Knowle's Andragogy learning theory. Both theories were applied to facilitate the teaching and learning styles, as mentioned in Chapter one.

7.2 PART ONE: GUIDELINES FOR THE IMPLEMENTATION OF AN EDUCATIONAL PROGRAMME THAT WAS DEVELOPED FOR THIS PROGRAMME

The guidelines were developed to facilitate the implementation of an educational programme on cervical cancer for women of reproductive age at healthcare facilities in the Otjozondjupa region. The guidelines were derived from the conceptual framework that was developed during the situation analysis on the knowledge, attitudes, and practices of women of reproductive age regarding the prevention, screening, and treatment of cervical cancer. The purpose of these guidelines is to assist in enhancing consistency in the steps and methods that should be followed by the facilitators during the implementation and evaluation of the programme. Two prominent and relevant theories were adopted in developing these guidelines: Kolb's experiential learning theory and Knowle's Andragogy learning theory. The implementer (agent) and facilitator(s) of the educational programme are encouraged to acquaint themselves with the contents of the educational programme for the successful implementation and evaluation. Steps for developing the guidelines for the implementation of the educational programme were adopted in this study and they are presented in Table 7.1.

7.2.1 Aim of the implementation guidelines

The aim of the guidelines is to provide the agent (facilitator) with knowledge and skills on how to conduct the situational analysis in healthcare facilities about the knowledge, attitudes and practices regarding the screening, prevention and treatment of cervical cancer.

7.2.2 Guidelines for situational analysis

A situational analysis was regarded as the vital starting point through which the agent (facilitator) would acquire an understanding of the knowledge, attitudes and practices regarding the screening, prevention, and treatment of cervical cancer. In terms of the situation analysis, the facilitator should be able to guide participants on the phases followed to conduct the situational analysis for the educational programme The facilitator should be able to simplify the programme content, learning and teaching materials based on the dynamics/challenges identified during data analysis of the study. The concepts determined during situational analysis are as follows:

- 7.2.2.1 To describe the knowledge on the prevention, screening and treatment of cervical cancer to enhance the utilization of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia

To achieve Objective one, the agent and facilitators are advised to acquaint themselves with the situational analysis findings on the level of knowledge regarding prevention, screening, and treatment of cervical (Chapter four of this study). The agent (facilitator) is required to prepare relevant learning and teaching materials to help the recipients (women of reproductive age) to understand the importance of screening, prevention, and treatment of cervical cancer in respect of the challenges identified in situational analysis. The challenges identified are in respect of preventive measures, types, symptoms, sources of information, indicators for screening, availability of cervical cancer services and types of treatment for cervical cancer.

- 7.2.2.2 To enhance the attitudes of women of reproductive age regarding the screening, prevention, and treatment of cervical cancer

- To describe the attitudes on the prevention, screening and treatment of cervical cancer to enhance the utilization of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia

To achieve Objective two the agent (facilitator) is required to prepare relevant learning and teaching materials to assist recipients (women of reproductive age) to understand the importance of positive attributes towards the screening, prevention, and treatment of cervical cancer. The challenges identified are in respect of the psycho-social influences on the prevention and screening, cultural beliefs, factors associated with cervical cancer, economic factors, and treatment of cervical cancer.

- 7.2.2.3 To describe the practices on the prevention, screening, and treatment of cervical cancer to enhance the utilization of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia

To achieve Objective three, the facilitator/agent is required to prepare relevant learning and teaching materials to help the recipients (women of reproductive age) to understand the importance of prevention and early uptake of cervical screening for early detection and thus, ensuring better treatment outcomes. The challenges identified are in respect of practices regarding the prevention, screening, and treatment of cervical cancer in respect of HPV vaccination, smoking, sexual partner, oral contraceptives, uptake of cervical screening and curability.

The facilitator/agent should emphasise the cues to cervical screening such as effective communication/mass media for the recipients to access information, nurses (provider

initiatives) disseminate information on cervical screening at the health facilities, and reminders from health teams (doctors and nurses). In addition, the agent (facilitator) should, in an attempt for an effective implementation of the educational programme and to ensure achievement of the above objectives, advocate for the healthcare facilities personnel to implement the following:

- Establish special sessions in the healthcare facilities to interact with all women of reproductive age about CC screening services when visiting the facilities for any reason and have access to information regarding CC and cervical screening, prevention, and treatment.
- Encourage healthcare provider initiation talks on cervical screening to the recipients to foster effective health-worker-patient relationships that have the potential to increase cervical screening uptake.
- Ensure that the educational programme has a provision of time slots that are suitable to the recipients to encourage them to attend educational sessions.
- The content should be made available in mass media (radio, TV, newspapers) with fliers, posters and leaflets being made available at all healthcare facilities and where funds permit, translated into local languages.
- Ensure the active involvement of stakeholders that include the MoHSS, Ministry of Gender, Ministry of Home Affairs, Ministry of Defence, Cancer Association of Namibia (CAN), I-TECH Namibia and NGOs to gain support during the implementation process.

7.2.3 Guidelines for facilitating the educational (training) programme (Phase one)

The aim of the guidelines for the facilitation of the educational programme is to aid the agent or facilitator to effectively apply the recommended principles of teaching and learning in the educational framework of the Namibia Qualifications Authority (NQA). The agent/facilitator must be acquainted with the educational approaches to be able to assist women of reproductive age towards the comprehension of knowledge, attitudes and practices on the prevention, screening, and treatment of cervical cancer and thus, ensure the successful implementation of the educational programme. The guiding activities are described below.

- 7.2.3.1 Educational approaches

In this study, two theories of adult learning were adopted as the guiding principles in developing the learning and teaching methods to be utilised during programme implementation and they are discussed below.

- Kolb's theory of experiential learning (1984)

Kolb's theory of experiential learning emphasises that adult learning occurs during concrete experiences, reflective observation, abstract conceptualisation, and active experimentation. According to Kolb's theory, the assumption is that adult learners in this study would participate in accordance with the learning styles and specifically designed learning content. The agent/facilitator should ensure the successful implementation of this approach by employing the following activities for adult learners to address the challenges regarding knowledge, attitudes and practices on the prevention, screening, and treatment of cervical cancer among women of reproductive age:

- Concrete experience should be encouraged to empower women to generate ideas through participation in small group discussions and learn from each other and thus, align their thinking to solve practical problems in their environment regarding the challenges of cervical screening uptake.
- Reflective observation should be applied so that participants can reflect on their previous knowledge and try to understand the difference between the previous knowledge and the implications it has on their health and newly acquired knowledge that might change their belief about being at risk of cervical cancer.
- Abstract conceptualisation should be applied so that participants can think and reflect on the new knowledge/ideas and weigh the benefits of adopting the recommended behaviour that reduces the risk of cervical cancer and thus bring about positive attributes of screening practices.
- An active experimentation style should be applied so that participants can acquire confidence that will make them to seek for cervical screening to prevent cervical cancer.

- Knowles's theory of adult learning (1984)

According to Knowles, adult learners are mature and as such, they need to be involved in the planning and evaluation of their learning activities. The application of learning encourages adult learners to prefer learning in situations whereby the following principles are reconsidered and included in the learning process. The principles are outlined below:

- The application of practical and problem-based experience to assist women to relate learning with their previous experiences and knowledge regarding prevention, screening, and treatment of cervical cancer.
- The promotion of women positive self-esteem to make concrete decisions on issues related to the prevention, screening, and treatment of cervical cancer.
- Encouraging the integration of newly acquired knowledge with the existing knowledge of women to improve the prevention, screening, and treatment of cervical cancer.
- Demonstrating mutual respect for women (participants) during training sessions so that they can feel respected and accepted during the training sessions on matters concerning cervical cancer.
- Respecting and promoting women's experiences on the prevention, screening, and treatment of cervical cancer because they are more interested in learning in situations where they relate learning to their previous experiences and knowledge.
- Encouraging self-determination and self-direction for the participants to develop interests in the learning activities directed towards the prevention, screening, and treatment of cervical cancer.

Overall, the facilitator or agent should develop practical and visual learning aids to engage participants in learning new concepts on cervical cancer. The agent/facilitator should use different methods of teaching and learning to accommodate all participants as they may learn differently. It is important that the agent/facilitator should use different methods in designing the teaching instructions, learning content, learners'

assessment methods, and strategies to enhance learning during the educational sessions at the healthcare facilities.

- 7.2.3.2 Learning content of the programme

The learning content for the educational programme should be based on the challenges as identified in the situational analysis [Phase 1] of the study as illustrated in Chapter six [Table 6.1].

7.2.4 Guideline for facilitation: Phase 2

The agent/facilitator should use various facilitation methods to guide the respondents during the implementation sessions of the educational programme activities. Facilitation methods refer to presenting information about cervical screening, prevention, and treatment of cervical cancer with the aim of improving the knowledge, attitudes, and practices on the uptake of cervical screening. Kolb and Kolb (2001) state that a facilitator uses the process of experiential learning that represents a learning cycle or spiral when a learner "touches all the bases"; for example, experiencing, reflecting, thinking, and acting. In this study, it is the duty of the agent/facilitator to encourage the respondents to attend education sessions (workshops), consult the respondents on the suitable timeframe, and prepare learning and teaching methods that would address identified challenges (dynamics) that influence the uptake of cervical screening in the Otjozondjupa region. Finally, certain techniques should be employed during the facilitation of the workshops to achieve the identified goals and evaluate the training programme.

- 7.2.4.1 Facilitation techniques

Facilitation is referred to as the act of making something easier. Facilitation techniques are designed to engage all the participants in a workshop or education session to participate actively, increase the members' commitment and establish team works (Schwarz, n.d.). In this study, an agent/facilitator should guide the participants and assist them to learn new concepts, discover their existing knowledge on the phenomena, bridge the existing gap and be able to make decisions. The agent/facilitator should utilise different teaching and learning methods based on the assumption that respondents are adult learners as per Knowles' model of andragogy (1996). There is also an assumption that adult learners bring along their own experience on the phenomenon, in this case cervical cancer. The agent/facilitator for this educational programme should use various facilitation techniques, as outlined below, to enhance learning among respondents.

Icebreakers: Icebreakers are powerful thinking exercises that help to motivate a group of learners to move from one stage to another during group development. According to Nangombe (2016), an ice breaker is a facilitation exercise that is intended to help a group to begin the process of forming themselves into a team, which are commonly presented as a game to 'warm up' the group by helping the members to get to know each other. Icebreakers also stimulate active participation, assist participants to know each other better, feel comfortable, facilitate teamwork, and create a conducive environment for participation and learning (Knox, n. d; Mulenga, 2018). In this study, a facilitator/agent should assist the respondents to get to know each other and get committed to the purpose of the training session. They also assist participants to familiarise with the facilitators, introduce the programme purpose and objectives so

that the participants can get more engaged in the educational sessions, and ensure that are certainly more likely to encourage participants to contribute meaningfully to the programme outcome.

Lecture method: A lecture method refers to preparing information on a specific topic and presenting it to the participants in the classroom sessions or workshop settings (Faroog, 2012). The lecture method is good in that it conveys a large amount of information to the respondents. However, the respondents may not be active as they would be just listening (Faroog, 2012). Therefore, this limitation of the lecture method compels the agent/facilitator to use other methods of facilitation such as pictures, video clips and PowerPoint slide presentations. It is important that training manual/notes should be made available to the respondents so that they are able to follow the presentation. The agents/facilitators are encouraged to provide educational materials which are translated into local languages, if available, so that respondents can use them at their homes after the sessions.

Brainstorming: This technique can be used during group discussions (work) to gather different thoughts or ideas on a topic. The method is useful to generate various ideas or solutions. As a result, brainstorming enables each respondent to contribute to the topic.

Debating: During debating, the agent/facilitator should allow the respondents to present their views on issues pertaining to the screening, prevention, and treatment of cervical cancer. Debating exercises allow the participants to explore and discover issues around the phenomena in a non-threatening environment. They also promote interest in the topic and nurture learning. It is the duty of the facilitator to decide on

the topics and areas to be debated on and to develop guidelines on how many times each participant should be allowed to talk. Finally, the facilitator should avoid putting respondents on the spot as this may diminish their willingness to participate.

Group discussion: Group discussions allow respondents to assume responsibility for their own learning, develop a sense of ownership and ensure the sustainability of interventions (Sravani, 2015). This study required that an agent/facilitator should use group discussions during different sessions to promote active participation and the discovery of different ideas on a certain topic. Small groups of 3-4 respondents, with a rapporteur and secretary, should be formed to ensure the active participation of each respondent. At the end of group discussions, respondents should be requested to provide feedback in the plenary, which would be followed up by questions from the larger group and comments. However, group discussions have shortcomings when utilised in educational sessions as they require more time to complete the exercise and not all respondents participate equally and actively. Therefore, the facilitator should ensure that respondents are fairly allocated in groups, given equal chances to contribute and create mutual trust and teamwork during discussions.

Plenary discussions and feedback should be used to summarise sessions or lessons discussed in the group. Respondents should be divided into small groups (2-3) to discuss the selected topic on cervical cancer. Each group should choose the rapporteur who will present their findings in the plenary session. The plenary and feedback sessions are useful techniques that can assist the learners and facilitators to:

- Summarise what has been deliberated on and learnt as the main important points

- Summarise ideas while emphasising what should be remembered after the sessions
- Make links to the other work and the next planned activities
- Remind the learners about their personal targets/goals

- 7.2.4.2 Facilitators

The facilitator of the training programme is the agent (registered nurse), who would serve as the subject expert to implement the educational programme to the women of reproductive age in the healthcare facilities of the MoHSS. The main role of the agent is to prepare the notes on the content to be taught, the learning environment, the-learning aids, selecting appropriate teaching methods as well as to clarify the purpose of the programme and the expectations of participants. The agent/facilitator plays an important role of being a mentor, counsellor, and a creative, innovative, and intuitive individual that is fit to facilitate sessions on cervical screening, prevention and treatment services. The agent/facilitator is an instrumental person who can serve not only as a coach, mentor, and educator but also as an adviser on matters pertaining to educational training. He/she should plan, coordinate, and train, monitor, and evaluate educational programme activities in the MoHSS (Nangombe, 2016). Thus, the agent/facilitator should ensure that respondents are applying new content to their own existing knowledge and experience on the subject matter and thus, integrate prior knowledge with the content of the educational programme. The agent/facilitator of this training programme needs to encourage learning and teaching that address and meet the needs of the respondents.

47. Table 7.1 Steps of developing the guidelines

Components	Guidelines	Activities
Step 1: Situational analysis	Situational analysis	Assessment of knowledge, attitudes, and practices of women of reproductive age regarding cervical cancer screening, prevention, and treatment
	Planning	Purpose Objectives Target population Roles of the facilitators Contents
Step 2: Facilitation	Educational approaches	Kolb Knowles
	Learning content of the programme	(A)Knowledge regarding prevention: prevention measures of CC, types of CC; symptoms of CC and sources of information on CC. Knowledge regarding screening of CC: availability of CC screening services and indications for screening. Knowledge regarding treatment: the types of treatment for CC. Attitude regarding prevention: prevention, psycho-social influences on prevention of CC, (B)Attitude regarding screening: psycho-social influences on screening of CC, cultural believes that influences women negatively on the attempt to seek for CC screening services, factors that influences women for not seeking CC screening services and economic factors. Attitude regarding treatment: The benefits of earlier detection; and curability of CC ©Practice regarding prevention, screening, and treatment: cervical screening coverage and HPV vaccination. Practice regarding screening of CC: uptake of CC screening and curability among women of reproductive age.

Components	Guidelines	Activities
	Facilitation techniques / teaching and learning methods	Icebreaker Lecture Debating Group discussion Brainstorming and Plenary discussion
Step 3: Implementation	Orientation phase	Welcoming address and introduction Purpose and objectives of the training
	Working phase	Expectations and ground rules as outlined in step two under learning content of the programme
	Termination phase	Evaluation of daily activities for the participants to be able to provide feedback. Post training assessment test to measure and compare the level of knowledge before and after interventions. Closure of the training programme
Step 4: Evaluation of the programme	Formative and summative assessment	Evaluation tool on programme implementation (formative evaluation) Written questions and answer formats, oral discussions Process of evaluation Outcome evaluation tools on the effectiveness of the programme
	Formative evaluation	Impact evaluation Feedback and communication Types and forms of feedback
	Feedback process	Formative assessment feedback process

Components	Guidelines	Activities

Adopted from Nangombe (2016)

7.2.5 Guidelines for the implementation process of educational programme: Phase three

Certain steps should be followed as part of the programme implementation process in this study. The implementation process of the educational programme adopted three phases, which are orientation, working phase and termination (Neshuku & Amukugo, 2015). An introductory part supports the orientation of the programme, the working phase introduces the programme content, and the termination phase assists participants to evaluate the programme and provide feedback. The phases for implementing the educational programme at the healthcare facilities in the MoHSS are illustrated in Table 7.2

48. Table 7.2 Phases for implementing the educational programme and programme content

Phases	Programme content
Introductory (Orientation) phase (1)	• Welcoming of participants • Synopsis of the workshop • Explain the purpose and objectives of the workshop • Participants' expectations and setting up ground rules
Working phase (2)	• Pre-training assessment test to determine level of pre-knowledge on CC
	• Activities on the knowledge regarding prevention: Knowledge regarding the prevention measures, the types of CC, the symptoms of CC, factors that are associated with CC,

	the source of information on CC (lecture, group discussions, plenary discussion) • Activities focusing on knowledge regarding the screening of CC: the availability of CC screening services, indicators of cervical screening (lecture, group discussion) • Activities focusing on knowledge regarding treatment: the types of treatment for CC (group discussion) • Activities focusing on the attitude regarding prevention: psycho-social influences on prevention of CC (lecture, group discussion) • Activities focusing on the attitude regarding screening: psycho-social influences on the prevention and screening of CC, cultural beliefs that influence women on the attempt to seek for CC screening services, factors that influence women negatively to not seek CC screening services, sites for screening and barriers to CC screening (lecture, group discussion) • Activities focusing on the attitude regarding treatment: The benefits of earlier detection and curability of CC (lecture, group discussion) • Activities focusing on practices regarding prevention, screening, and treatment: cervical screening coverage and HPV vaccination, smoking, sexual partner, use of oral contraceptives (group discussion, brainstorming)
Termination phase (3)	• Evaluation of daily activities for the participants to be able to provide feedback • Post training assessment test to measure and compare the level knowledge before and after interventions

	• Closure of the training workshop

- 7.2.5.1 Orientation: Phase one

During this phase, the facilitator/agent should welcome the participants and they introduce themselves, orientate the participants about the purpose of the workshop, briefly discuss the objectives and explain logistical arrangements. The purpose and objectives should be explained in detail so that the participants can understand fully the reasons why they should attend the education sessions. The participants should introduce themselves and they will be asked to state their expectations. The agent should explain the reasons for having group norms and ground rules and these should be discussed and agreed upon before the start of the sessions.

- 7.2.5.2 Working: Phase two

The process of implementation of the training programme has a second phase that focuses on orientation, working and termination (Table 8.4). This phase is the vital part of the training programme because it engages the participants for them to comprehend the purpose and objectives of the training programme. The facilitator/agent should work together with the participants to address the core challenges identified during the situational analysis. The implementation of this phase was based on Kolb's experiential learning theory and Knowles' model of andragogy (Chapter one and seven of this study). This phase aims at empowering women of reproductive age with the knowledge, attitudes and practices on the screening, prevention, and treatment of cervical cancer. In this study, the working phase is divided into three units.

- Unit 1: To enhance the knowledge of women of reproductive age on the prevention, screening, and treatment of cervical cancer.

This unit aims to improve the knowledge on screening, prevention, and treatment of cervical cancer among women of reproductive age. The following areas formed the content to achieve in Unit one of the studies as depicted in Table 7.3.

49. Table 7.3 Methods utilised to address knowledge gaps on screening, prevention, and treatment of CC

Content	Teaching/learning methods	Theory applied
Knowledge regarding prevention of cervical cancer: • Definition of cervical cancer • Preventive measures • Types of cervical cancer • Symptoms of cervical cancer and the source of information on cervical cancer • Knowledge regarding screening of cervical cancer: the availability of cervical cancer screening services, indicators (factors that influences screening) of cervical cancer screening • Knowledge regarding treatment: the types of treatment of cervical cancer	• Lecture (using power point presentation) • Group discussions (groups of three to four participants) and brainstorming	• Kolb's experiential learning theory (concrete experience) • Knowles' theory of andragogy

- Unit two: To enhance the attitudes of women of reproductive age regarding prevention of cervical cancer

This unit aims to address the neutral level of attitudes on the screening, prevention, and treatment of CC. The following areas formed the content of this unit (Table 7.4).

50. Table 7.4 Methods utilised to address neutral attributes for the screening, prevention, and treatment of CC

Content	Teaching/learning methods	Theory applied
Attitudes regarding prevention, screening, and treatment cervical cancer in respect of: Attitude regarding prevention: • Psycho-social influences on the prevention of cervical cancer Attitude regarding screening: • psycho-social influences on screening of cervical cancer • Cultural beliefs that influence women on the attempt to seek for cervical screening services • Factors that influence women to not seek cervical screening services • Accessibility and affordability of screening and treatment services Attitude regarding treatment: • The benefits of earlier detection and curability of CC	• Lecture (using power point presentation) • Group discussion (groups of three to four participants) and brainstorming • Reporting in plenary/discussions	• Kolb's experiential learning theory (concrete experience, reflective observation) • Knowles' theory of andragogy

- Unit three: To promote the uptake of cervical screening among women of reproductive age regarding the prevention, screening, and treatment of cervical cancer

This unit aims to improve the practices on the screening, prevention, and treatment of CC. The following areas formed the content of this unit as presented in Table 7.5.

51. Table 7.5 Methods utilised to address low cervical screening uptake

Content	Teaching/learning methods	Theory applied
• Definition of cervical screening • Earlier detection for curability • HPV vaccination • Smoking • Sexual partner • Oral contraceptives	• Lecture (using power point presentation) • Group discussion (groups of three to four participants) • Brainstorming • Plenary discussions	• Kolb's experiential learning theory (concrete experience, reflective observation, and abstract conceptualisation) • Knowles' theory of andragogy

- 7.2.5.3 Termination phase

This is the last step of the educational session. It enables the participants to evaluate and give feedback on the educational programme. The agent/facilitator should ensure that participants evaluate the education sessions daily. The purpose of this activity is to determine whether there is an activity covered during the training sessions that participants did not grasp well and attend to identified problems if any. The agent/facilitator should then re-explain what was not understood and ensure that each participant comprehends the correct information on the phenomena.

It is important that participants evaluate the programme implementation on the last day of the training. The feedback would enable the agent/facilitator to determine whether the educational programme was useful and met participants' expectations. The agent/facilitator should arrange for the post-training assessment test (similar to the pre-test training assessment test) to determine whether the participants' knowledge, attitudes and practices regarding prevention, screening and treatment of cervical cancer would have improved. Feedback is also important as it might suggest areas of improvement such as on the quality of learning materials, methods of presentations/teaching of course content and types of learning aids used in the programme for future educational sessions.

7.3 PART 2: GUIDELINES FOR PROGRAMME EVALUATION

According to Alkin (1969), the evaluation of a training programme refers to the process of identifying and quantifying or measuring the relationships between student (trainee) inputs and educational (training) outputs and determining the combination of the mediating factors and which maximise the educational programme (training) and outputs, given a constant financial input and controlling the effects of external systems. The purpose of evaluation is to determine what outcomes are achieved – both desired and undesired, and anticipated and unanticipated because of a policy or programme implemented as an intervention to a challenge (s) (Suchman, 1967).

Potter (2006) states that there are three main paradigms that are related to programme evaluation, and these are the positivist, interpretive and critical emancipatory approaches. This study adopted the positivist approach as it is mainly quantitative and its evidence can assist the evaluators to understand if there was any improvement in

the knowledge, attitudes, and practices of women of reproductive age regarding the prevention, screening, and treatment of cervical cancer post educational programme intervention.

Kosecoff et al., (1987) argue that there are two types of evaluation, namely practice evaluation and programme evaluation. Practice (clinical) evaluation focuses on evaluating the impact of clinical interventions on health outcomes such as morbidity, mortality, and quality of life. Programme evaluation is also concerned with determining the progress on programme implementation, the effectiveness of programme implementation and the impact (determining the outcome of the intervention). In this study, programme evaluation was adopted because the study aimed to evaluate the progress during the implementation, effectiveness of the programme and the impact that the programme can have made on the recipients.

7.3.1 Evaluation techniques

Evaluation techniques are the most important tools that are used to assess the learners' understanding and learning progress during contact sessions. It determines whether further assistance, such as repeating a session to ensure that each participants grasped the concept under discussion for better programme outcome, is required.

According to Nangombe (2016), the nature of assessments used by instructors determines the participants' level of engagement and understanding during training sessions. Facilitators in this study are requested to evaluate the participants during classroom sessions by providing them with a pre-assessment test, daily evaluation of sessions and post-assessment test at the end of the educational programme (training programme).

Two types of evaluation techniques (methods) for evaluating learners are recognised and these are formative techniques that monitor learners' continual learning during the learning process by providing feedback to the participants on areas they experienced difficulties in comprehension and summative assessment techniques that evaluate student learning mostly at the end of a learning unit or the completion of an educational session. Summative assessment is regarded as the most important assessment that allows the evaluators to determine the impact that the interventions (educational sessions) would have made on the participants and whether the desired programme outcomes would have been met (Centres for Disease Control, 2013; 2011; WHO, 2014).

In this study, agents/facilitators are advised to use two methods of programme evaluation, which are the formative method (taking place during sessions presentations) and the summative method (drawing learnings from a completed educational (training) sessions). The formative method should be used during the training sessions and in a classroom setting to assess participants' understanding and learning of the content being presented and to detect any difficulties that might require facilitators to repeat part of the session to ensure progress. The summative method should be used at the end of the training sessions to assess the impact and level of knowledge, attitudes and practice behaviours on cervical screening, prevention and treatment of cervical cancer. These methods would help the programme evaluators to assess the process and outcomes of the learning content. Facilitators are advised to utilise formative and summative evaluation techniques (questions) based on the study objectives (Chapter one) and dynamics (programme content) identified during data

analysis (Chapter four) of this study. Different evaluation tools were then designed and used to evaluate the programme, and these are described as follows:

Daily evaluation tool (formative) to evaluate participants` views on the topic presentations during programme implementation. This should be conducted at the end of each day and include:

- Evaluation tools (summative) to evaluate the participants on the knowledge and attitudes levels and attributes acquired after the programme implementation.
- Programme evaluation (summative) to be done after implementation to evaluate the impact and effectiveness of the programme; and
- Pre- and post-training assessments (formative and summative) should be conducted before and after completion of educational (training) sessions of the programme to determine whether there was an improvement in the knowledge, attitudes and practices regarding the prevention, screening, and treatment of cervical cancer.

7.3.2 Evaluation tools for programme implementation

Some of the evaluation tools (questions) for this study are prepared on a Likert Scale, which indicates the values as follows: 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree and 5 = strongly disagree while others are not. All the questions on the Likert scale are formulated in the affirmative based on the challenges identified in the situational analysis (Chapter four) that eventually formed the content of the programme. This is to allow participants to provide their views freely about the programme implementation. The evaluation tools are divided in four categories,

namely, evaluation tools regarding programme implementation (formative); evaluation tools regarding the acquired knowledge, attitudes, and attributes about cervical cancer (summative); and the effectiveness of the programme and impact of educational (training) programme (summative). Facilitators should hand out formative evaluation tools to the participants at the end of each day, after the completion of daily presentations and request them to complete the questions provided to them truthfully and genuinely. Summative evaluation tools should be completed at the end of the whole training sessions. Formative evaluation tools to be used in this study are described below in Table 7.6.

52. Table 7.6 Evaluation tool on programme implementation (formative evaluation)

Dear Respondent Please share your views on the implementation of this programme by answering the following questions
1. What did you learn in today`s training?
2. What challenges did you experience during topic presentations?
3. What did you not understand in today`s sessions?
4. Which session(s) was/were most useful to you and why?
5. What changes do you think need to be made to improve presentations?

The evaluation tool indicated in Table 8.6 above should be completed daily at the end of all presentations.

7.3.3 Evaluation tool on the knowledge, attitude and practice attributes acquired regarding the programme (effectiveness of the programme)

Table 7.7 below describes the variables used to assess the knowledge, attitudes and practices towards cervical cancer prevention, screening, and treatment that the participants would have acquired from the training sessions. Instructions: Please read and consider the numbers provided for your responses to indicate the level of acquired

information on cervical screening, prevention and treatment of CC as follows: 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree and 5 = strongly disagree.

53. Table 7.7 Evaluation tool on the knowledge, attitudes, and practices of the respondents on cervical cancer (summative evaluation)

a) Knowledge questions

Statement	1	2	3	4	5	Total
General information of CC well understood						
Pap smear test use to detect early precancerous lesions that suggest cancer						
Cervical cancer is curable when detected early						
HPV infection and risk of development of CC						
Types of CC well understood						
Symptoms of CC well understood						
Factors associated with CC well understood						
Factors that influence women to not seek cervical screening services well understood						
Prevention methods of CC well understood						
Types of treatment of CC well understood						

b) Attitude questions

Statement	1	2	3	4	5	Total
Psycho-social influences of women on CC well understood						
Cultural beliefs that influence women to not seek cervical screening well understood						
Economic factors that influence women to not access cervical screening services well understood						
Willingness to uptake cervical screening for early detect of CC						
Willingness to take young girls (9 -12 years) for HPV vaccination						

c) Practices questions

Statement	1	2	3	4	5	Total
Pap smear and VIA are methods used to detect cervical lesions that suggest cervical cancer						
Early detection of cervical cancer ensures possible better treatment outcome						
Cervical cancer is curable						

7.3.4 Evaluation tool on the effectiveness and impact of the programme

Impact evaluations are decision-making tools for policymakers and programme managers in healthcare settings that make it possible for the programme to be accountable to the community (Gupta, 2002 as cited in Nangombe, 2016). Impact evaluation determines the end results (outcome) of the programme intervention that was intended for. In this study, facilitators are advised to determine whether the programme would have empowered the participants on the knowledge, attitudes and practices on the screening, prevention and treatment of CC. This should be done through pre- and post-training assessment tests. Participants should be assessed prior to the educational sessions on the phenomenon by giving them a pre-test to determine their current knowledge on the challenges identified in the situational analysis (Chapter four). Participants should again be given a post training assessment test consisting of the same questions used in the pre-assessment test. The results of both tests should be compared in order to determine whether there was an improvement in the level of knowledge regarding prevention, screening, and treatment of cervical cancer. Facilitators should request the participants to evaluate the usefulness of the programme by completing a programme evaluation tool that is presented in Table 7.8.

54. Table 7.8 Programme evaluation tool (summative evaluation)

Dear Respondent Please share your views regarding the effectiveness of this programme by answering the following questions. Please circle the number you choose for your response. 0 = no, 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree and 5 = strongly agree	
1. Do you think that this training is important?	0 1 2 3 4 5
2. Do you think this training was helpful to you?	0 1 2 3 4 5
3. Do you think this training has achieved its objectives?	0 1 2 3 4 5
4. Do you think that this training has improved your knowledge?	0 1 2 3 4 5
5. Are you going to implement what you have learned from this training?	0 1 2 3 4 5

7.4 FEEDBACK SESSIONS

Hattie and Yates (2014) state that feedback in a classroom setting refers to the information that allows a learner to reduce the gap between what is evident currently and what could or should be the case. Feedback is part of an effective communication process that can either be verbal or non-verbal to convey a message of shared information about an intervention or strategy to improve a situation. Well-timed feedback can support cognitive processes for better performance, including confirming or restructuring understanding, improving strategies, guiding the participants to more information, and suggesting directions and/or alternative strategies they could pursue to improve. Feedback can also engage the participants in metacognitive strategies such as goal setting, task planning, monitoring and reflection, which are important skills for self-regulated learning (Hattie & Yates, 2104). Feedback can influence students' affective processes and improve effort, motivation, and engagement. It can redirect or refocus the agent/facilitators or participants' actions to achieve the goal of the programme.

Hattie and Yates (2014) further explain that there are two types of common feedback that are experienced during programme evaluation, which are negative and positive feedback. Negative feedback implies that one should either change to improve on what one is doing or change to something else. Positive feedback implies that an individual has stepped up on what she/he was doing. In this study, evaluators/facilitators are advised to provide feedback to the participants on the findings of evaluations conducted during classroom sessions (formative) on the process of implementing an educational (training) programme and thus enhance learning. The feedback should also be provided on presentations of the findings to the MoHSS and other stakeholders (summative findings). The types of feedback to be used in these guidelines are written feedback evaluation tools (formats) that can enable facilitators to record the responses (answers and suggestions) provided by the participants on the progress, effectiveness, and impact of the programme outcome.

7.5 SUMMARY

This chapter discussed the steps followed in the identification of the guidelines for the implementation and evaluation of the educational programme on cervical screening, prevention, and treatment of cervical cancer among women of reproductive age in the Otjozondjupa region. Two important theories were adopted in developing the guidelines for the training programme. Kolb's experiential theory of learning and Knowles' model of andragogy were applied to align the content and learning methods for the programme. Various teaching and learning methods were explained and presented as strategies to be used during teaching and learning situations to inculcate the required knowledge to the participants. The process of programme evaluation was

described to evaluate the implementation, effectiveness, and impact on the outcomes of the educational programme.

CHAPTER EIGHT

CONCLUSIONS, LIMITATIONS, RECOMMENDATIONS AND CONTRIBUTION OF THE STUDY

8.1 INTRODUCTION

This chapter presents the conclusions, recommendations, contributions, and limitations regarding an educational programme to empower women of reproductive age in the Otjozondjupa region. The recommendations were based on the findings of the knowledge, attitude, and practices from the situational analysis [Phase one] of this study and formed the content of the educational programme. The guidelines to implementing the programme and evaluation tools are developed.

8.2 CONCLUSIONS IN TERMS OF THE OBJECTIVES OF THE STUDY

A conclusion is the last resolution or judgement that is made after a period of thought about all information connected with a situation under study (Hornby, 2015). The study identified numerous dynamics on the level of knowledge, attitude, and practices of women of reproductive age regarding cervical cancer screening, prevention and treatment in the Otjozondjupa region. Conclusions from the study results were made based on four objectives of the study and these are described below.

There is a need to translate the leaflets/brochures of health information on cervical cancer into local languages so that women can access information about cervical cancer in their predominantly spoken languages. It is also important that methods of information dissemination regarding cervical cancer be made available through electronic and printed media.

Knowledge on the prevention of the disease is important, thus women should be educated through educational programme activities that the development of cervical cancer does not show symptoms at the beginning. It is indeed very important for women to take up regular cervical screening for early detection as this ensures better treatment outcomes.

The study concluded that the majority of women have inadequate knowledge on the fact that early commencement of sexual debut poses serious risks for the development of cervical cancer. Hence, there is a need to increase awareness among women in this regard.

8.2.1 Objective one: Describe the knowledge, attitude, and practices of women of reproductive age regarding the prevention, screening, and treatment of cervical cancer in the Otjozondjupa region.

The following are the conclusions made from the results regarding this objective.

- 8.2.1.1 Demographical data of the respondents

- The study concluded that there is an association between the age of respondents and cervical screening ($p = < 0.01$); educational level and cervical screening (P= 0.00); education and parity ($p = < 0.01$); marital status and cervical screening (P=0.00) and employment cervical screening ($p = < 0.01$) among the respondents.

- 8.2.1.2 Knowledge, attitude and practices regarding prevention, screening, and treatment.

- The study respondents (recipients) scored low on the level of knowledge regarding cervical cancer in respect of the preventive measures, types, symptoms, sources of information, availability of screening services, indications for cervical screening (associated factors) and treatment. They also scored a neutral level with regards to the attitudes on psycho-social influences on the prevention and screening, and cultural beliefs that influence cervical screening, factors that influence screening, and treatment as well as low coverage and uptake of cervical screening.

- The majority of respondents (86.7%) scored low on the level of knowledge regarding cervical cancer; 83.1% of the respondents scored at a neutral level of attitude regarding the prevention, screening, and treatment of cervical cancer. There is a low utilisation of cervical screening services (32%) among the respondents.
- There is a need to translate the leaflets/brochures of health information on cervical cancer into local languages so that women can access information about cervical cancer in their predominantly spoken languages. It is also important that the methods of information dissemination regarding cervical cancer be made available through electronic and printed media.
- Knowledge on the prevention of the disease is important, thus women should be educated through educational programme activities that the development of cervical cancer does not show symptoms at the beginning. It is indeed

important for women to take up regular cervical screening for the early detection as this ensures better treatment outcomes.

- Majority of women have inadequate knowledge on the fact that early commencement of sexual debut poses serious risks for the development of cervical cancer which does not show symptoms at the beginning.
- 8.2.2 Objective two: Develop a conceptual framework as a basis for the development of an educational programme [Phase 2].

The appropriate conceptual framework for this study was formulated, which consists of the following: the agent (who performs the activity), recipient (who receives the activity), the context (framework), procedure (the guiding technique), dynamics (the energy source for the activity), and terminus (the end point of the activity).

8.2.3 Objective three: Develop an educational programme to enhance the utilisation of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia [Phase three]

The content of the educational programme which is based on the dynamics identified in Phase one was developed to enhance the utilization of cervical cancer services among women of reproductive age in Otjozondjupa region [Phase 3].

8.2.4 Objective four: Identifying the guidelines for the implementation of the educational programme to enhance the utilisation of cervical cancer services among women of reproductive age in Otjozondjupa region [Phase four].

The researcher identified the appropriate and required guidelines that will guide the implementation and evaluation of the educational programme interventions aimed to

enhance the utilisation of cervical cancer services among women of reproductive age in the Otjozondjupa region.

8.3 LIMITATIONS

Research studies have limitations and some of them can be controlled. The limitations of the study are those characteristics of design or methodology that impacted or influenced the application or interpretation of the results of the study (Wang et al., 2015). The major limitation for this study is that an educational programme was developed based on the findings from the Otjozondjupa region only. As a result, the educational programme might not be suitable for other regions as they may have different challenges in terms of economic factors, cultural background and religious orientation that may influence the uptake of cervical screening. In addition, the instruments for data collection were only prepared and implemented in English and not translated into local languages and this might have an influence on the study results. Some of the respondents did not attend primary school such that they do not know how to read and write even if the instrument was translated into their mother language. However, the researcher conducted face to face interviews with the respondents through translations and this might have imposed biases in the data collection process.

To ensure that the biases have been reduced and or avoided, the researcher applied objectivity and neutrality when interviewing the respondents who could read or write in the English language during data collection process and only recorded in the questionnaire what the respondents had answered. In the event where the researcher did not speak the local language that the respondents were acquainted with, the

services of a translator were used for the respondents to be able to complete the questionnaire.

8.4 RECOMMENDATIONS

Recommendation refers to the endorsement of suggestions made on the best thing to do (Hornby, 2015). Recommendations are formulated and presented based on the results of a given study.

8.4.1 Recommendations regarding practices [Ministry of Health and Social Services]

The following recommendations were made by the researcher:

- It is recommended that the developed educational programme for women of reproductive age in the Otjozondjupa region be pilot tested, using the developed guidelines for implementation and evaluation of the programme in the Otjozondjupa region. Based on the pre-tested programme, the content can be refined and confirmed by experts before being rolled out to other regions.
- It is recommended that the researcher collaborates with the MoHSS's Reproductive Health Unit, NGOs, and other development partners in order to develop an information booklet about cervical cancer screening and treatment and translate it into various local languages. The translated version of resources and materials on cervical cancer screening, prevention and treatment once available, should be available in both public and private healthcare facilities.

8.4.2 Recommendations to the training institutions [Education sector]

- It is recommended that the developed educational programme to enhance the utilisation of cervical cancer services among women in Otjozondjupa region

be integrated in the third-year curriculum for the Honours Degree in Nursing Science at the University of Namibia.

- It is recommended that the developed educational programme be integrated in the in-service training programmes for nurses at all health facilities in all regions.

8.4.3 Recommendations for future research

There is a need for further research studies on the following areas:

- A qualitative study may be conducted in the Otjozondjupa region on the knowledge, attitude, and practices of reproductive aged women regarding the prevention, screening, and treatment of cervical cancer as well as in other regions to complement the results of this study.
- The educational program should be pilot tested in Otjozondjupa region to determine its feasibility implantability.

8.5 CONTRIBUTION OF THE STUDY TO THE BODY OF KNOWLEDGE

The findings of the study contribute to the scientific body of knowledge in the following ways:

- Evidence was generated that showed that there is a low level of knowledge and a neutral attitude that might have contributed to the low utilisation of cervical cancer screening among women of reproductive age living in the Otjozondjupa region.
- A conceptual framework was developed, and it formed the basis of an educational programme.

- An educational programme was developed to enhance the utilisation of cervical cancer screening among women of reproductive age living in Otjozondjupa region.
- Guidelines for the implementation and evaluation of the educational programme were identified.

8.6 SUMMARY

This chapter presented the conclusions, limitations, recommendations, and the contribution of the study to the body of knowledge. It underscored that the developed guidelines would assist in the implementation and evaluation of an educational programme seeking to empower women of reproductive age with the knowledge, attitude, and practices regarding the uptake of cervical screening, prevention and treatment of cervical cancer.

REFERENCE LIST

Abdul-Aziz, M. (2012). Knowledge, attitude, and practice towards cervical cancer among reproductive health clients at the University of Science & Technology Hospital-Sana'a in Yemen. *Yemeni Journal for Medical Sciences, 6, 21–27. [Google Scholar]*

Abudukadeer, A., Azam, S., Mutailipu, A.Z. Qun, L., Guilin, G. & Mijiti, S. (2015). Knowledge and Attitude of Uyghur women I Xinjiang Province of China related to the Prevention and early detection of cervical cancer. *World J Surg Oncol. doi: 10.1186/s12957-05-0531-8. hpp://www.creativecommons.org/publicdomain/zero/1.0/.*

Ahmedin, J. D.V.M., Freddie, B., David, F., O'Brien, M., Jacques, F. B. S., Melissa, C. & Maxwell, D. P. (2012). *Cancer burden in Africa and opportunities for prevention.* Retrieved from: htt://onlinelibrary.wiley.com/doi/10.1002/cncr.27410/full.

Akaranga, S. I., & Makua, B.K. (2016). Ethical considerations and their applications to research: A case of the University of Nairobi. *Journal of Educational Policy and Entrepreneurial Research, 3*(12), 1-9.

Al Khudairi, H.A., Abu-Zaid, O., Alomar et al. (2017). Public awareness and knowledge of Pap smear as a screening test for cervical cancer among Saudi population in Riyadh city. *Cureus, 9,* e984. Publisher Site | Google Scholar

Alemayehu, H. & Mariam, D. H. (2013). Patient side cost and its predictors for cervical cancer in Ethiopia: A cross sectional hospital based study. *BMC Cancer, 13,* 6-9.

Ali- Risasi, C. Mulumba, P., Verdonck, K., Vsnden Broeck, D., & Praet, M. (2014). *Knowledge, attitude and practice about cancer of the uterine cervix among women lining in Kinshasa, the Democratic Republic of Congo*. http://www.biomedcetral.com/1472-6874/14/30.

Alkin, M.C. (1969). Evaluation theory development. *Evaluation Comment, 2,* 2-7.

Alsbeih, G. (2014). HPV infection in cervical and other cancers in Saudi Arabia: Implication for prevention and vaccination. *Frontiers in Oncology, 4,* 65. *Publisher Site* | *Google Scholar*

Al-Shaikh, G.K., Syed, S.B., Fayed, A.A. et al. (2017). Effectiveness of health education programme: Level of knowledge about prevention of cervical cancer among Saudi female healthcare students. *Journal of the Pakistan Medical Association, 67*(4), 513-520.

Arbyn, M., Weiderpass, E., Bruni, L., de Sanjose, S., Saraiya, M., Ferlay, J. & Bray, F. (2019). Estimates of incidence and Mortality of cervical cancer in 2018: Worldwide analysis. *PMID, 19,* 20482-20486.

American Cancer Society, (2019). Do we know what causes cervical cancer? *http://www.cancer.org/docroot/CRI/content 242X*

American Society for Colposcopy and Cervical Pathology. (2015). An insight into cervical cancer screening and treatment capacity in Sub-Sahara Africa. *Journal of Lower Genital Tract Disease, 20*(1), 2-16.

Assoumou, S.Z., Mabika, B.M., Mbiguino, A.N., Mouallif, M., Khattabi, A., & Ennaji, M.M. (2015). Awareness and knowledge regarding cervical cancer, Pap smear screening and human papillomavirus infection in Gabonese women. *MBC Womens Health 15*,3-7.

Aubel, J. (1999). *Participatory programme evaluation manual. involving programme stakeholders in the evaluation process. (2nd ed.): A joint publication of the child survival technical support project and catholic relief services*. http://www.macroint.com/csts.

Auvert, B (2005). Randomized controlled intervention trial of male circumcision for reduction of HIV infection risk. *The ANRS 1265 Trial,11,* e 298.

Awake, Y. H., Ayanto, S. Y., & Ersado, T.L. (2017). Knowledge, attitude and practice for cervical cancer prevention and control among women of childbearing age

in Hossana town, Hadiya zone, Southern Ethiopia: Community-based cross-sectional study. *PLoS One, 12* (7), e0181415.

Aweke, Y. H., Ayanto, S.Y., & Ersado, T.L. (2017). Knowledge, attitudes and practice for cervical cancer prevention and control among women of child bearing age in Hossana Town, Hadiya Zone, Southern Ethiopia: Community-based cross-sectional study. *PubMed.*

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behaviour change. *Psychology Review, 84*(2),191-215.

Bansal, A.B., Pakhare, A. P., Kapoor, N., Mehrotra, R. & Kokane A. M. (2015). Knowledge, attitude, and practices related to cervical cancer among adult women: A hospital based cross sectional study. *Journal of Natural Science, Biology and Medicine, 6* (2), 324 - 328 doi: 10.4103/0976-9668.159993. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC 4518402/

Bansil, P., Wittet, S., Lim, J.L., Winker, J. L. & Jeronimo, J. (2014). Acceptability of self-collection sampling for HPV DNA testing in low-resource settings: A mixed methods approach. *MBC Public Health, 14,596.*

Bigoni, J., Gundar, M., Tebeu, P.M., Bongoe, A., Schäfer. S., Fokom-Domgue, J., et al., (2015). Cervical cancer screening in sub-Saharan Africa: A randomized trial of VIA versus cytology for triage of HPV-positive women. *International Journal of Cancer, 137*(1), 127-134. 10.1002/ijc.29353.

Binka, C., Nyarko S. H., & Doku, D. T. (2015). Cervical cancer knowledge, perceptions and screening behaviour among female university students in *Ghana. Journal of Cancer Education., 31*(2),322-327. doi: 10.1007/s13187-015-0852-x. [PubMed] [CrossRef] [Google Scholar

Binka, C., Nyarko, H.S., Awusabo-Asare, K., & Doku, D.T. (2019). Barriers to the uptake of cervical cancer screening and treatment among rural women in Ghana. *doi: 10.1155/2019/6320938 Biomed Res Int.* Google Scholar

Bray, J., Ferlay, I., Soerjomataram, R. L., Siegel, L. A., Torre, A. J. (2018). Global cancer statistics. GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians, 68*(6), 394-424.

Bruni, L., Barrionuevo-Rosas L., Albero, G., Serrano, B., Mena, M., Gómez, D, et al. (2017). ICO Information Centre on HPV and Cancer (HPV Information Centre). Human papillomavirus and related diseases in Namibia. Summary Report 19 April 2017. Barcelona (Spain): ICO HPV Information Centre,Institut Català d'Oncologi. http://hpvcentre.net/statistics/reports/NAM.pdf

Burns, N., & Groove, S. K. (2015). *The practice of nursing research: Conduct, critique, and utilization.* (6th ed.). Saunders Company.

Burto-Jeangros, C., Cullati, S., Monor, O., Courvoisier, D.S., Bouchardy, C. & Guessous, I. (2017). *WHO guidelines for screening and treatment of pre-cancerous lesions for cervical cancer prevention* https://www.who.int/reproductivehealth/topics/cancers/guidelines/en/

Campbell, C., Kafwafwa, S., Brown, H., Walker, G., Madetsa, B., Deeny, M., Kabota, B., Morton, D., Ter Haar, R., Grant, L. & Cubie, H.A. (2016). *Use of thermo-coagulation as an alternative treatment modality in a 'screen-and-treat' programme of cervical screening in rural Malawi. Int J Cancer. [Epub ahead of print].* **https://doi.org/10.1002/ijc.30101**

Cancer Association of Namibia. (2014). *Annual report of cancer preventive activities*. Cancer Association of Namibia.

Carvalho, M. M. E. (2016). *Shaping service delivery for cervical cancer screening: Understanding knowledge, acceptability, and preferences among women in The Neno District of Malawi.* http://www.elischolar.library.yale.edu/ysphtdl/1036

Center for Decease Control. (2011). *Introduction to programme evaluation for public health programmes: A self-study guide.* http://www.cdc.gov/eval/guide/step3/index.htm.

Centre for Decease Control. (2013). *Developing an effective evaluation report: Setting the course for effective programme evaluation. Atlanta, Georgia: Centers for Disease Control and Prevention, National Centre for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Division of Nutrition, Physical Activity and Obesity*. http://www.cdc.gov/eval/framework/index.htm.

Chaka, B., Sayed, A.R., Goeieman, B., & Rayne, S. (2018). *A survey of knowledge and attitudes relating to cervical and breast cancer among women in Ethiopia*. https//doi.org/10.1186/s12889-5958-8

Chamani, S.R., Charandabi, S.M., & Kamalifard, N. (2012). Knowledge, attitude and practice about pap smear among women referring to a public hospital. *Journal of Family and Reproductive Health*, *6*(4),117-182.

Choi, S.Y. (2014). *Development of an educational programme to prevent cervical cancer among immigrants in Korea*. https://doi: 10.1016/j. ypmed,2004.03.040.

Cholticha, R. (2016). *Knowledge, attitude, and practice regarding cervical cancer among rural community women in Northern Thailand*. https://dx.doi.org/10.7314/APJCP.2016.17.1.85

Chomet, J., & Chomet, J. (2015). *Smear tests: Cervical cancer, its prevention and treatment*. Google Scholar

Clifford, N., French, S. & Valentine, G. (2010). *Key methods in Geography* (2nd ed.). PubMed

Cortina, J. M. (1993). What is coefficient Alpha? An examination of theory and applications. *Journal of Applied Psychology*, *78*(1), 98-104. *https://doi.org/10.1037/0021-9010.78.1.98*

Creswell, J.W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative and mixed methods approache*s. Sage Publications, Inc.

Creswell, J.W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches.* (4th ed.). Sage Publications.

Crossman, A. (2020). *Positivism in the study of sociology*. thoughtco.com/positivism-sociology-3026456.

Daley, E., Alio, A., Anstey, E. H., et al., (2011). Examining barriers to cervical cancer screening and treatment in Florida through a socio-ecological lens. *Journal of Community Health, 36*(1), 121-131. doi: 10.1007/s10900-010-9289-7. [PubMed] [CrossRef] [Google Scholar]

Damascene Makuza, J., Nzanzimana, S., Muhimpundu, M. A., Pace, L E., Ntaganira, J., & Riedel, D.J. (2015). Prevalence and risk factors for cervical cancer and pre-cancerous lesions in Rwanda. *Pan African Medical Journal.* [doi:10.11604/pamj. 22.26.7116 (https://creative commons/licences/by/4.0/).

David, E., Kern Tomas, P. A., & Hughes, M. T. (2014). *Curriculum development for medical education: A step by step Approach*. (2nd ed.). John Hopkins University Press.

De Vuyst, H., Alemany, L., Lacey, C., Chibwesha, C.J., Sahasrabuddhe, V., Banura, C., Denny, L., & Parham, C.P. (2013). The burden of human papillomavirus infections and related diseases in sub-Saharan Africa. *National Institute of Health Public Access, 31*,1-33.

Denny, L., & Anorlu, R. (2013). Cervical cancer in Africa. *Cancer Epidemiology, Biomarkers and Prevention, 21,* 1434 -1438.

Dickoff, S., James, P., & Wiedebach, E. (1968). Theory in practice discipline: Part1. *Practice Oriented Theory: Nursing Research, 17*(5) 415-435. *doi 10.4018/978-1-4666-9577-1.ch031*

Dolman, L., Sauvaget, C., Muwonge, R., & Sankaranarayanan, R. (2014). Meta-analysis of the efficacy of cold coagulation as a treatment method for cervical intraepithelial neoplasia: a systematic review. *BJOG, 121(8),929-42.*

Doyle, A. (2016). *Top 10 communication skills for workplace success*. *https://doi.org/10.1080/23288604.2016.1225471*

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2012). *Management research* (3rd ed.). SAGE Publications Ltd.

Ebu, N. I., Mupepi, S. C., Siakwa, M. P., & Sampselle, C. M. (2015; 2017). Knowledge, practice, and barriers toward cervical cancer screening in Elmina, southern Ghana. *International Journal of Women's Health*, *7*, 31-39. doi: 10.2147/ijwh.s71797. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

Eckert, L.O. (2017). Human papillomavirus vaccine: More good news. *Obstet Gynecol., 130*(4), 691-702. *doi: 10.1097/AOG.0000000000002271*

Emanuel, E.J., Wendler, D., Killen, J & Grady, C. (2004). What makes clinical research in developing countries ethical? The benchmarks of ethical research. *The Journal of Infectious Diseases, 189*(5), 930-937. https://doi.org/10.1086/381709

Farooq, U. (2012). *Lecture method of teaching, definition, advantages and disadvantages*. www.studylecturenotes.com/.../382

Fee, J. F. (2012). *Quantitative methods in action research methods*. Palgrave Macmillan.

Ferlay, J., Soerjomataram, I., Ervik, M., Dikshit, R., Eser S., & Mathers, C. (2016). *GLOBOCAN 2012 v1.2: Cancer incidence and mortality worldwide: IARC Cancer Base No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer, 2013. http://globocan.iarc.fr.*

Finocchaario-Kessler, S., Wexler, C., Maloba, M., Mabachi, N., Ndikum-Moffor, F., & Bukusi, E. (2016). Cervical cancer prevention and treatment research in Africa: a systematic review from a public health perspective. *BMC Women's Health, 16,* 2-9.

Franceschi, S., & Jaffe, H. (2017). Cervical cancer screening of women living with infection: A must in the era of antiretroviral therapy. *Clinical Infectious Diseases. 45,* 510-513.

Gamara, C. J., Paz, E.P.A., & Griep, R.H. (2015). Knowledge, attitudes and practices related to Papanicolaou smear test among Argentina's women. *Saude Publica, 39,* 270-276.

Gatumo, M., Gacheri, S., Sayed, A.R. & Scheibe, A. (2018). *Women's knowledge and attitudes related to cervical cancer and cervical cancer screening in Isiolo and Tharaka Nithi counties, Kenya: A cross-sectional study.* https://doi.org/10.1186/s12885-018-4642-9

Getahun, F., Mazengia, F., Abuhay, M., & Birhanu, Z. (2013). Comprehensive knowledge about cervical cancer is low among women in Northwest Ethiopia. *MBC Cancer, 13,* 2. *Google Scholar/Medline*

Gospe, M. (2016). *The 9 characteristics of a good facilitator*. kickstartall.com 9/-characteristics of – a-good-facilitator/

Glanz, K.B., Barbara, K., Rimer, K., & Viswanath, R. (2015). *Health behaviour and health education: Theory, research, and practice*. (5th ed.). Jossey-Bass. https://www.researchgate.net/publication/307866484_Theory_Research_and_Practice

GLOBOCAN. (2018). *Analysis of cancer incidence, mortality and prevalence: A cancer journal of clinicians.* American Cancer Society.

Grigore, M., Popovici, R., Pristavu, A., Grigore, AM., Matei, M., & Gafitanu, D. (2017). Perception and use of Pap smear screening among rural and urban

women in Romania. *Eur J Public Health, 27* (6), 1084.doi: 10.1093/eurpub/ckx112.

Grove, S.K., Burns, N., & Gray, J.R. (2013). *The practice of nursing research: appraisal, synthesis, and generation of evidence*. (7th ed.). Elsver.

Grove, S.K., Burns, N., & Gray, J.R. (2015). *The practice of nursing research: appraisal, synthesis, and generation of evidence*. (7th ed.). Elsevier

Hamersley, M., & Traiano, A. (2012). *Ethics in qualitative research: Controversies and Contexts.* SAGE Publications Ltd.

Hattie, J.A.C., & Yates, G.C.R. (2014). Using feedback to promote learning. In V.A., Benassi, C.E., Overson, & C.M., Hakala, (Eds), *Applying the science of learning in education: Infusing psychological science into the curriculum* (pp 45-58). American Psychological Association. http://teachpsych.org/ebooks/asle2014/

Hayden, J., & Paterson, W. (2013). *Introduction to health behaviour theory*. (2nd ed.). Elsevier

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence Based Nursing, 18*, 66-67.

Health Systems Trust. Policy Brief. (2014). *Cervical Cancer and HIV: The intimate connection.* Health Systems Trust.

Henley, P. (2012). Preventing preventable cervical cancer in Kenya. *Africa Portal, 38,* 1-10.

Hornby, A.S. (2015). *Oxford advanced learner `s dictionary of current English: Oxford University Press.* http://apps.who.int/rhl/gynaecology/cancer/cd002834_chumworathayib_com/en/index.ht ml

Hussain, A.N., Alkhenizan, A., McWalter, P. et al. (2016). Attitudes and perceptions towards HPV vaccination among young women in Saudi Arabia. *Journal of Family and Community Medicine*, Google Scholar

(3), 145-150.

Hussain, S., Nasare, V., Kumari, M., Sharma, S., Khan, M.A., Das, B. C. et al. (2014). Perception of human papillomavirus infection, cervical cancer and HPV infection in north India population. *PLoS One, 9*, e112861.

ICO (2014). Information Centre on HPV and cancer. *International Journal of Gynecological Cancer*, *12(*4), 376-382.

International Agency for Research on Cancer. (2014). *World cancer report*. IARC.

International Agency for Research on Cancer. (2019). *Population Fact Sheets: Africa. Lyon, France: International Agency for Research on Cancer*. http://gco.iarc.fr/today/data/factsheets/populations/903-africa-fact-sheets.pdf.

Jassim, G., Obeid, A., & Al Nasheet, H. A. (2018). *Knowledge, attitudes and practices regarding cervical cancer and screening among women visiting primary health care Centres in Bahrain.* https://doi 10.1186/s12889-018-5023-7. BMC Public Health.

Jemal, A.D.V.M., Bray, F., Forman, D., O'Brien, M., Ferlay, J. B.S., Center, M. & Parkin, D. (2012). *Cancer burden in Africa and opportunities for prevention*. Wiley Online Library. http://www.onlinelibrary.wiley.com/doi: 10.1002/cncr.27410/full

Joshi, S., & Sankaranarayana, R. (2015). Opportunities for cervical cancer prevention in India. *Journal of Krishna Institute of Medical Sciences University, 4*(1), 8–17.

Jradi, H., & Bawazir, A. (2019). Knowledge, attitudes, and practices among Saudi women regarding cervical cancer, human papillomavirus (HPV) and corresponding vaccine. *Vaccine, 37*(3), 530-537.

Kakehongo, N. (2018). *Factors affecting cervical cancer screening among women of childbearing age, attending Intermediate Hospital Oshakati (IHO), Oshana region, Namibia: A case-control study*. http://hdl.handle.net/11070/2241

Kangmennaang, J., Thogarapalli, N., Mkandawire, P. & Luginaah, I. (2015). Investigating the disparities in cervical cancer screening among Namibian women. *Gynecol. Oncol., 138*(2),411-436.

Kashyap, N., Krishnan, N., Kaur, S. & Ghai, S. (2019). Risk factors of cervical cancer: A case control study. *Asia Pacific Journal of Oncology Nurs 6*(3), 308 -314. http://doi:10.4103/apjon.73 18..

Kearsley, G. (2010). *Andragogy: The theory into practice data base*. http://tip.psychology.org

Kei, R. M., M'Ndegwa, J. K., Ndwiga, T., & Masika, F. (2016). challenges of cervical cancer screening among women of reproductive age in Kisii Town, Kisii County, Kenya. *Science Journal of Public Health, 4,* 289 - 296. https:/doi: 10.11648/j.sjph.20160404.14

Khozaim, K., Orang's, E., & Christoffeersen-Deb, A. (2014). Successes and Challenges of establishing cervical cancer screening and treatment programme in Western Kenya. *Int. J. Gynecology Obstet* 124 -188.

Knowles, M. (1984). *Andragogy in action*. Jossey-Bass

Knowles, M., Holton E., & Swanson, R. (1998). The adult learner: The definite classic in adult education and human resources development. (4th ed.). Gulf Publishing Company.

Knowles, M.S. (1980). *The modern practice of adult education*. Follet.

Knox, G. (n.d.). *40 icebreakers for small groups*. https://www.insight.typepad.co.uk

Kobus, M. (2014). *First steps in research*. Van Schaik Publishers.

Kolb, D. A. (1984). *Experiential learning*. Prentice Hall. http://trgmcber.haygroup.com/Products/learningbibliography.htm.

Kolb, D.A., & Boyatzis, R. E. (1999). *Experiential learning theory: Previous research and new direction.* Weatherhead School of Management.

Kosecoff, J., Kanouse, D., & Rogers, W. (1987). *effects of national institutes of health consensus* development programme on physician practice. *Journal of the American Medical Association, 258,* 2708-2713.

Kothari, C. R. (2016). *Research methodology: Methods and techniques*. (3rd ed.). New Age International (p) Ltd. Publishers.

Leslea, P., Donna, F.L., Donna, C., & Rachel, W. (2013). *Screening for cervical cancer*. Google Scholar

Lim, J.N.W., & Ojo, A.A. (2017). Barriers to utilization of cervical cancer screening in sub-Sahara Africa: A systematic review. *European Journal of Cancer Care 26,* el2444, doi: 1111/ecc.12444.

LoBiondo-Wood, G., & Haber, J. (2013). *Nursing research: Methods and critical appraisal for evidence-based practice*. (8th ed.). Elsevier.

Low, E.L., Simon, A.E., Lyons, J., Romney-Alexander, D., & Waller J. (2012). What do British women know about cervical cancer symptoms and risk factors? *Eur. J. Cancer, 48,*3001 - 3018.

Lowrance, W.W. (2012). *Privacy, confidentiality, and health research*. Cambridge University Press.

Mabelele, M., Materu, J., Ng'ida, F.D., & Mahande, M. (2018). *Knowledge towards cervical cancer prevention and screening practices among women who attend reproductive and child health clinic at Magu district hospital, Lake Zone Tanzania: A cross sectional study*. https://doi.org/10.1186/s12885-018-4490-7

Macleod, S.A. (2017). *Kolb – learning style*. https://www.simplypsychlogy.org/learning-kold.hthl.

Macleod, S. (2013). *Kolb`s learning style*. www.simplypsychology.org/learning-kolb.html.

Major, T., Koyabe, B., Ntsayagae, E., Monare, B., Molwane, O., & Gabaitiri, L. (2018). Norms and beliefs related to cervical cancer screening amongst women aged 25 - 49 in Botswana: A pilot study. *Int. J. Afri Nurs Sci.*, *9*,141 -147. Doi: 10.1016/j.ijans.2018.11.001. Epub 2018Nove 5.

Makombe, G. (2017). An expose of the relationship between paradigm, method and design in research. *The Qualitative Report, 22*(12), 3363-3382. http://nsuworks.nova.edu/tqr/vol22/iss12/18

Makurirofa, L., Mangwiro, P., James, V., Milanzi, A., Mavu, J., Nyamuranga, M., & Kamtauni, S. (2019). *Women's knowledge, attitudes and practices relating to breast and cervical cancer in rural Zimbabwe: A cross sectional study in Mudzi District, Mashonaland East Province*. https://doi.org/10.1186/s12889-018-63335.

Maseko, F. C., Chirwa, M. L., & Muula, A. S. (2015). Health systems challenges in cervical cancer prevention programme in Malawi. *Glob Health Action, 8,* 262-82.

Merriam-Webster Collegiate Dictionary. (2019). https://www.merriam-webster.com.

Meyer, S.M., & Van Niekerk, S.E. (2008). *The five phases of the programme development.* Juta.

Ministry of Health and Social Services. (2012). *Republic of Namibia: Report on needs assessment: screening for reproductive system cancers*. Ministry of Health and Social Services.

Ministry of Health and Social Services. (2013). *Namibia Demographic Health Survey*. Republic of Namibia.

Ministry of Health and Social Services. (2014). *Health Information Report for 2008 – 2013.* Republic of Namibia.

Ministry of Health and Social Services. (2015/16). *Otjozondjupa Regional Report.* Republic of Namibia.

Ministry of Health and Social Services. (2016). *Republic of Namibia National guidelines on health services integration: Sexual and reproductive health and rights, HIV and other services*. Republic of Namibia.

Ministry of Health and Social Services. (2018). *Namibia cervical cancer prevention guidelines.* Republic of Namibia

Ministry of Health and Social Services. (2014). *Roadmap.* Republic of Namibia.

Ministry of Health and Strategic Plan for Cervical Cancer Prevention and Control in Uganda 2010 – 2014. (2015). *Ministry of Health and Strategic Plan for Cervical Cancer Prevention and Control in Uganda 2010 – 2014*. Ministry of Health.

Ministry of Medical Services National Cervical Cancer Prevention Programme in Kenya: Strategic Plan 2012-2015. (2016). *Ministry of Medical Services National Cervical Cancer Prevention Programme in Kenya: Strategic Plan 2012-2015. Nairobi, Kenya*. Ministry of Medical Services.

Momenimovahed, Z., & Salehiniya, H. (2017). Incidence, mortality and risk factors of cervical cancer in the world. *Biomedical Research and Therapy, 4*(12), 1795 - 1811. http://www.doi.org/10.15419/bmrat.v4i12.386

Moon, T.D., Silva-Matos, C., Cordoso, A., Baptista, A.J., Sidat, M., & Vermund, S.H. (2012). Implementation of cervical cancer screening using visual inspection with acetic acid in rural Mozambique: Successes and challenges using HIV care and treatment programme investments in Zambézia Province. *J. Int. AIDS Soc., 15*(2),17406.

Moore, Q.R. & Driver, N. (2014). *Knowledge of cervical cancer Risk factors among Educated Women in Lome' Togo*. http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/CN.

Morema, E. N., Atieli, H. E., Onyango, R. O., Omondi, J.H., & Ouma, C. (2014). *Determinants of cervical screening services uptake among 18 -49-year-old women seeking services at the Jaramogi Onginga Ondinga Teaching and referral Hospital, Kisumu, Kenya*. http:/www.biomedcentral.com/1472-6963/14/335.

Morris, B.J., & Hankins, C.A. (2017). Effect of male circumcision on risk of sexually transmitted infection and cervical cancer in women. *Lancet Global Health,* l5. 11, e105 - e1055.

Mothiba, T. M. (2012). *A training programme for cost centre management with a dual role at a tertiary hospital complex in the Limpopo Province*. http://content.healthaffairs.org/content/22/2/103.full.html.

Mouton, J. (2014). *Understanding Social Research*. Van Schaik.

Msyamboza, K.P., Dzamalala, C., Mdokwe, C., Kamiza, S., Lemerani, M., Dzowela, T., et al... (2016). Burden of cancer in Malawi: Common types, incidence and trends: national population-based cancer registry. *BMC Research Notes, 5*,1-49.

Mukama, T., & Ndejjo, R. (2017). *Women's knowledge and attitudes towards cervical cancer prevention: A cross sectional study in Eastern Uganda. https://bmcwomenshealth.biomedcentral.com/track/pdf/10.1186/s12905-017-0365-3?site=bmcwomenshealth.biomedcentral.com*

Mulenga, E. (2018). *An educational programme to empower mothers and caregivers on feeding practices of children under the age of 5 years in Oshikoto region, Namibia*. **URI:** http://hdl.handle.net/11070/2221

Mupepi, S.C., Sampselle, C.M. & Johnson, T.R.B. (2011). Knowledge, attitudes, and demographic factors influencing cervical cancer screening behaviour of Zimbabwean women. *Journal of Women's Health, 20* (6), 943-952.

Mwanahamuntu, M., Sahasrabuddhe, V V., Kapambwe, S K., Pfaendler K S., Chimbwesha, C., Mkumba, Gracilia., Mudenda, V., Hicks, M L., Vermund, S H., Stringer, J S A & Parham, G P. (2011). Advacing cervical cancer

prevention initiatives in rfesource –constrainted settings: Insights from the cervical cancer prevention programme in Zambia. *PLoS Med., 8*(5), e1001032. doi: 10.1371/journal.pmed.1001032.

Nakisige, C., Schwartz, M. & Ndira A. O. (2017). Cervical cancer screening and treatment in Uganda. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5331149/yyhhhhhhhh

Namibia. (2011). *Namibia national census.* Republic of Namibia.

Namibia. (2001). *Family planning policy and national policy on reproductive health.* Republic of Namibia.

Namibia. (2018). *National cervical cancer prevention guidelines*. Republic of Namibia.

Nangombe, J. P. (2016). *A quality improvement Training Programme for Health Professionals in the Ministry of Health and Social Services in Namibia*. Republic of Namibia.

Alter, B.P., Giri, N., Savage, S.A. & Rosenberg, P.S. (2018). *National Cancer Institute at the National Institute of Health*. *https: //doi.org/10.3324/haematol.2017.178111*

National Multisectoral Plan for Prevention and Control of Non – Communicable Diseases in Namibia 2017/18 - 2021/22.Ministry of Health and Social Services, Namibia.

Ncube, B., Bey, A., Knight, J., Bessler, P., & Jolly, P. E. (2015). Factors associated with the uptake of cervical cancer screening among women in Portland, Jamaica. *North America Journal of Medical Sciences, 7*(3), 104. *pmid:25839002 [PubMed/NCBI*

Ndejjo, R., Mukama, T., Musabyimana, A., & Musoke, D. (2016). Uptake of cervical cancer screening and associated factors among women in rural Uganda: A Cross sectional study. *PLoS One, 11*(2) https://doi.org/10.1371/journal.pone.0149696

NDHS. (2013). *Namibia Demographic and Health Survey*. Republic of Namibia.

Ndikom, C. M., & Ofi, B. A. (2012). Awareness, perceptions and factors affecting utilization of cervical cancer screening services among women in Ibadan, Nigeria: A qualitative study. *Research Report. Reproductive Health 9, 11. https://link.springer.com/article/10.1186/1742-4755-9-11*

Neshuku, H., & Amukugo, H. J. (2015). *Development of an Educational Programme to support registered nurses during clinical supervision of student nurses in medical and surgical wards in a training health facility, Oshana Region, Namibia.* https://repository.unam.edu.na/handle/11070/1487

Ngugi, C. W., Boga, H., Muigai, A. W. T., Wanzala, P., & Mbithi, J. N. (2012). Factors affecting uptake of cervical cancer early detection measures among women in Thika, Kenya. https://www.tandfonline.com//doi/full/10.1080/07399332.2011.646367

Nicholls, A., & Nicholls, S.H. (1978). *Developing a curriculum: A practical guide.* Allen & Unwin.

Nkwake, A. M. (2013). Working with assumptions in international development programme evaluation. *Springer Science and Business Media*. doi: 10.1007/978-1-4614-4797-97

Nwobodo, H., & Ba-Break, M. (2015). Analysis of the determinants of low cervical cancer screening uptake among Nigerian women. *Journal of Public Health in Africa, 6,*4-84.

Onwubere, C. H., & Esiri, M. (2012). *Foundations of communication research.* National open university of Nigeria. org/learning-kolb.html.org/learning-kolb.html.

Oxford Online Dictionary. (2019). http://www.oxforddictionaries.com/definitions/Knowledge.

Pandey, P., & Pandey, M. M. (2015). *Research methodology: Tools & techniques.* (1st ed.). Bridge Centre.

Parnham, G.P., Mwanahamuntu, M., & Hicks, M.L. (2014). *Screen-and-treat cervical cancer prevention programmes in resource-constrained environments*. African Centre of Excellence for Women's Cancer Control.

Pittalis, C., Panteli, E., Schouten, E. & Magongwa, I. (2020). Breast and cervical cancer screening services in Malawi: A systematic review. *BMC Cancer, 20, 1101*. https://doi.org/10.1186/s12885-020-07610-w

Poli, U. R., Bidinger, P. D., & Gowrishankar, S. (2015). Visual Inspection with Acetic Acid (VIA) screening programme: 7 years' experience in early detection of cervical cancer and pre-cancers in rural South India. *Indian Journal of Community Medicine, 40* (3), 203-207.

Polit, D. F., & Beck, C. T. (2017). *Nursing research: Generating and assessing evidence for nursing practice.* Lippincott Williams and Wilkins.

Polit, F.D., & Beck, T.C. (2012). Nursing research: Generating and assessing evidence for nursing practice. (9th ed.). Lippincott.

Polit, F.D., & Beck, T.C. (2018). *Nursing research*: *Generating and assessing evidence for nursing practice*. (9th ed.). Lippincott.

Pötter, R., Haie-Meder, C., Erik Van Limbergen, E., Isabelle Barillot, I., DeBrabandere, M., Dimopoulos, J., Dumas, I.,Erickson, B., Lang, L., Nulens, A., Petrow, P., Rownd, J. & Kirisits, C. (2006). Recommendations from gynaecological (GYN) GEC ESTRO working group (II): Concepts and terms in 3D image-based treatment planning in cervix cancer brachytherapy—3D dose volume parameters and aspects of 3D image-based anatomy, radiation physics, radiobiology.

https://www.sciencedirect.com/science/article/abs/pii/S0167814005005463

Ramathuba, D.U., Ngambi, D., Khoza, L.B. & Ramakuela, N.J. (2016). Knowledge, attitudes and practices regarding cervical cancer prevention at Thulamela Municipality of Vhembe District in Limpopo Province. *Afr. J. Prim. Health Caea Fam. Med. 8*(2),1002.

Ranabhat, S., Tiwar, M., Dhungana, G., & Shrestha, R. (2014). Association of knowledge, attitude, and demographic variables with cervical Pap smear practice in Nepal. *Asian Pac J Cancer Prev,15*(20),8905-10.doi:10.7314/APJCP.

Regoniel, P. (2015). *Conceptual framework: A step by step guide on how to make one*

https://simplyeducate.me/2015/01/05/conceptual-framework-guide.

Rosser, J. I., Njoroge, B., & Huchko, M. J. (2015). Changing knowledge, attitudes, and behaviors regarding cervical cancer screening: The effects of an educational intervention in rural Kenya. *Patient Education and Counselling, 98*(7), 884-889. 10.1016/j.pec. 03.017.

Roura, E., Travier, N., Waterboer, T., et al., (2016). The influence of hormonal factors on the risk of developing cervical cancer and pre-cancer: Results from the EPIC Cohort. *PLoS One, 11*(1), ce0147029.

Salkind, N. J. (2010). *Encyclopaedia of research design.* SAGE Publications, Inc.

Sankaranarayanan, R. (2014). Screening for cancer in low-and middle-income countries. *Ann Glb Health, 80*(5), 412-427.

Saslow, D., Solomon, D., Lawson, H. W., Maureen, K., Shalini, L.K., Joanna, C., Franscisco, A.R. G., Moriarty, A.T., Waxman, A.G. & Wibur, D.C. (2012). American cancer society, American society for colposcopy and cervical pathology, and American society for clinical pathology screening guidelines for the prevention and early detection of cervical cancer. *CA: A Cancer Journal for Clinicians, 62*(3),147–172. doi: 10.3322/caac.21139.

Sawadogo, B., Gitta, S., Rutebemberwa, E., & Meda, N. (2014). Knowledge and beliefs on cervical cancer and practices on cervical cancer screening among women aged 20 to 50 years in Ouagadougou, Burkina Faso. *Pan African Medical Journal, 18*(175,1-10.

Sayinzoga, F., Umulisa MC., Sibomana, H., Tenet, V., Baussano, I., & Clifford, GM. (2020). Human papillomavirus vaccine coverage in Rwanda: A population-

level analysis by birth cohort vaccine. *https://doi.org/10.1016/j.vaccine.2020.04.021*

Schwarz, R. (n.d.). *What is facilitation.* https://www.ica.uk.or.uk/

Shah, S. R., & Abdullah A. (2013). Research paradigms: Researchers' worldviews, theoretical frameworks and study designs. *Arab World English Journal, 4*(4), 252-264. https://pdfs.semanticscholar.org/bc4f/721cbff0e745116f3884bd5a27b605d172d3.pdf

Shiferaw, S., Addissie, A., Gizaw, M., Hirpa, S., Ayele, W., Getachew, S. et al., (2017). Knowledge about cervical cancer and barriers toward cervical cancer screening among HIV-positive women attending public health centers in Addis Ababa City, Ethiopia. *PMID, 29441700* doi: 10.1002/can4.1334.

Shretha, J., Saha, R., & Tripathi, N. (2013). *Knowledge, attitude and practice regarding cervical cancer screening amongst women visiting tertiary center in Kathandu, Nepal.* *Nepal Journal of Medical Sciences.*

Sravani, S. (2015). Advantages and disadvantages of working in a group. *www.wisestep.com/top-advantages-and*

Stanley, M. (2014). *HPV vaccination in boys and men*. Human Vaccines Immunother.

Stewart, B.W., & Wild, C.P. (2014). *World cancer report: The international agency for research on cancer*. WHO Press

Stutt, A. (2018). *Curriculum development and the 3 models*. www.cglrc.cgiar.org/icraf/toolkit/What_is_curriculum_development_.htm

Southern Africa Litigation Center. (2012). *Tackling cervical cancer: Improving access to cervical cancer services for women in Southern Africa*. http:www.arena>info.>annual report.

Suchman, E. (1967). *Evaluative research*. Russell Sage Foundation.

Sudenga, S. L., Rositch, A. F., Otieno, W.A., & Smith, J. S. (2013). Knowledge, attitudes and practices, and perceived risk of cervical cancer among Kenyan women: Brief report. *International Journal of Gynecol. Cancer, 23*(9), 895-925. doi.10.1097/IGC.0b03e3182e425c.

Swanson, R. A. (2013). *Theory building in applied disciplines*. Berret - Koehler Publishers.

Synman, L. C. (2013). *Prevention of cervical cancer – How long before we get it right?* htt://www.sajog.org.za/index.php/SAJOG/article/view/65/336 systematic review and meta-analysis. doi:10.1186/2046 -4053-2-35PMCID:PMC3681632.

Tadesse, S. K. (2015). *Socio – economic and cultural vulnerabilities to cervical cancer and challenges faced by patients attending care at Tikur Anbessa Hospital: A cross-sectional and qualitative study*. BMC Women's Health.

Teng, F.F., Mitchell, S.M., Sekikubo, M., Biryabarema, C., Byamugisha, J.K. & Steinberg, M. (2014). Understanding the role of embarrassment in gynaecological screening: a qualitative study from the ASPIRE cervical cancer screening project in Uganda. *BMJ Open, 4,* 4783 -4790.

Tonder, S. (2015). *Ethics in healthcare*. Lansdowne.

Touch, S., & Oh, J. K. (2018). Knowledge, attitudes and practices toward cervical cancer prevention among women in Kampong Speu Province, Cambodia. https://doi.org/10.1186/s12885-018-4198-8.

Twinomujuni, C., Nuwaha, F. & Babirye, J. N. (2015). Understanding the low level of cervical cancer screening in Masaka Uganda using the ASE model: A community – based survey. *PLoS one, 10(*6), e0128498.pmid:26030869 PubMed/NCBI

United Nations. (2010). *The millennium development goas report*. United Nations.

United Nations Population Fund. (2017). *9-year-old girl receive free HPV vaccinations to prevent cervical cancer*. *http://cambodia.unfpa.org/en/news/9-*

year-oldgirls-receive-free-hpv-vaccinations-prevet-cervicalcancer?page=1%2C1. University press uptake of cervical screening.

United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development.* United Nations.

Wang, M., Bolland, M., & Grey, A. (2015). Reporting of limitations of observational research. *Jama Intern Med., 175*,1571-1572. doi: 10.1001/jamainternmed. 2147.

Wellensiek, N., Moodley, M., Moodley, J., & Nkwanyana, N. (2012). *Knowledge of cervical cancer screening and use of cervical screening facilities among women from various socioeconomic backgrounds in Durban, Kwazulu Natal, South Africa*. PubMed.

Welman, C., Kruger, F., & Mitchell, B. (2010). *Research methodology*. (3rd ed.). Oxford University Press.

White, H. L., Mulambia, C., Sinkala, M., Mwanahamuntu, M. H. & Parham, G. P. (2012). Motivations and experiences of women who accessed see and treat cervical cancer prevention services in Zambia. *Journal of Psychosomatic Obstetrics and Gynecology 33,* 91 -98.

Williams, M., Kuffour, G., Ekuadzi, E., Yeboah, M., ELDuah, M. & Tuffour, P. (2013). Assessment of psychological barriers to cervical cancer screening among women in Kumasi, Ghana using a mixed methods approach. *African Health Sciences, 13,* 1054 -1060.

Williams, M.S. (2014). A qualitative assessment of the social cultural factors that influence cervical cancer screening behaviours and the health communication preferences of women in Kumasi, Ghana. *Journal of Cancer Education, 29*(3), 555–562. 10.1007/s13187-014-0611-4.

World Health Organisation. (2013). *Comprehensive cervical cancer prevention and control: A healthier future for girls and women. WHO guide note: Geneva*. *http://www.who.int/reproductivehealth/topics/cancers/en/*

World Health Organization/ICO. (2014; 2015). *Success factors in women's health and children's health: Mapping pathways to progress Ethiopia*. WHO.

World Health Organization/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre) (2017). *Information Centre on HPV and Cervical Cancer, Human Papillomavirus`and Related Cancers in Nigeria*. http://www.who.int/immunization/monitoring_surveillance/resources/PEI-tool/en/).

World Health Organisation. (2013). *Monitoring national cervical cancer prevention and control programmes: Quality control and quality assurance for visual inspection with acetic acid (VIA) – based programmes*. http://www.who.int/reproductivehealth/publications/cancers/9789241505260/en//

World Health Organisation. (2013). *WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention: technical Guidelines. Geneva.* precancerous lesions/en/

World Health Organisation. (2014). Control of the cervix uteri. *Bulletin of the World Health Organisation, 64*(4), 607-618.

World Health Organization. (2014). Human Papillomavirus vaccines: WHO position paper. *Weekly Epidemiol Rec., 89*(43), 465-92 http://www.who.int/wer/2014/wer8943. pdf

World Health Organisation. (2017). *Guide to early diagnosis. WHO Document Production Services, Genev*a. http://www.who/int/cancer/publications/cancer early diagnosis/en/.

World Health Organization/ICO. (2014). *Success factors in women's health and children's health: Mapping pathways to progress Ethiopia*. WHO.

World Health Organization. (2018). *Estimates of incidence and mortality of cervical cancer: A worldwide analysis*. WHO.

World Health Organization /ICO. (2019). *Information Centre on HPV and Cervical Cancer (HPV Information Centre). A Summary report on HPV and Cervical cancer statistics in South Africa*. http://www.who.int/hpvcentre

World Health Organization. (2020). *Annual estimation of cervical cancer cases and deaths in Namibia.* https://www.who.int/cancer/country-*profiles/NAM_2020.pdf?ua=1*

World Health Organization. (2020). *Global estimate of cervical cancer cases.* https://www.who.int/news-room/fsct-sheets/detail/cervical-cancer

Zhang, Z. F., Parkin, D. M., Yu, S. Z., Esteve, J., & Yang, X. Z. (2014). Risk factors for cancer of the cervix in a rural Chinese population. *International Journal of Cancer, 43,* 762-767.

Zhifei, H.E., Bishwajit, G., & Saya, S. (2019). Prevalence of alcohol and tobacco use among men and women in Namibia. *PMC, 6338963*

ANNEXURE A: ETHICAL CLEARANCE CERTIFICATE (UNIVERSITY OF NAMIBIA)

UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: SONPH/127/2016 **Date: 5 December, 2016**

This Ethical Clearance Certificate is issued by the University Of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

Title of Project: Knowledge, Attitude and Practice by Women in the Reproductive Age Regarding Cervical Cancer in Otjozondjupa Region: Development of the Educational Programme

Nature/Level of Project: Doctorate

Researcher: E. Anyolo

Student Number: 8709785

Faculty: School of Nursing and Public Health

Supervisors: Dr. H. Amukugo (Main) Dr. K. Amakali (Co)
Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.
(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.
(c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by UREC.
(d) The UREC retains the right to:
(i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected, request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.

Prof P. Odonkor: UREC Chairperson

Ms. P. Claassen: UREC Secretary

ANNEXURE B: APPROVAL LETTER TO CONDUCT THE STUDY FROM THE MOHSS

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 PERMANENT SECRETARY

Ref: 17/3/3
Enquiries: Ms. H. Nangombe

Date: 10 April 2017

Mr. Epafras Anyolo
University of Namibia
Namibia

Dear Mr. Anyolo

Re: Knowledge, Attitude and practice by women in the reproductive age regarding prevention, screening and treatment of cervical cancer in Otjozondjupa region: Development of the educational programme for women in the reproductive age

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.

Yours sincerely,

Andreas Mwoombola (Dr)
Permanent Secretary

ANNEXURE C: REQUEST LETTER FOR THE PERMISION TO CONDUCT THE STUDY (MoHSS)

REQUEST LETTER TO CONDUCT A RESEARCH STUDY

P.O. Box 24721
Windhoek
12 December 2016

The Permanent secretary
Ministry of Health and Social Services
Private Bag 13198
Windhoek

Dear Dr Moombola

Re: Request for permission to conduct a research on assessment of knowledge, attitude and practice by women in the reproductive age regarding cervical cancer in Otjozondjupa region: Development of educational programme.

I am a staff member of the University of Namibia (UNAM), as a lecturer in the Faculty of Health Science, School of Nursing, General Nursing Science Department. I am currently a part-time student pursuing studies towards Doctorate degree in Nursing Science at UNAM. It is a requirement that I have to conduct a research study as part of the fulfilment of the said degree.

The data from the Demographic Health Survey, (DHS) 2013 indicates that 23% of women of reproductive age had cervical cancer examination in Otjozondjupa region, while only 108 (0.29%) had cervical cancer examination in 2014 respectively (MoHSS, 2014). In Tsunkwe constituency, of Otjozondjupa region, there was no case of cervical cancer examination recorded (MoHSS, 2015/2016). Furthermore, 60% of women aged 15-49 nationally, who were interviewed revealed having heard of cervical cancer screening but only 25% had been screened for cervical cancer (DHS, 2014). These data indicates that the majority of women of reproductive age are not attending cervical cancer preventive services in Otjozondjupa region. Little is known if women of reproductive age in Otjozondjupa region have right knowledge, attitude and practices about cervical cancer. It is against this background that the researcher aims to assess the knowledge, attitude and practices (KAP) among women of reproductive age regarding cervical cancer in health centres and clinics in Otjozondjupa region.

The study title is "Knowledge, Attitude and Practice by women in the reproductive age regarding cervical cancer in Otjozondjupa region: Development of the educational programme". The aim of the study is to develop an educational program to increase knowledge, attitudes and practices of women of reproductive age regarding cervical cancer services. The data will be collected among women of reproductive age (15-49 years) at the health centres and clinics of Otjozondjupa region.

Based on the above, I am requesting permission to conduct a research study and collect data from health facilities in Otjozondjupa region. It is my hope that my application will receive your favourable consideration.

Attached please find the research proposal and other relevant documents for your attention.

Yours Sincerely,

Epafras Anyolo

Researcher, Cell phone number: 0811489844

ANNEXURE D: PARTICIPANT RESEARCH STUDY QUESTIONNAIRE

TITLE: THE DEVELOPMENT OF AN EDUCATIONAL PROGRAMME TO ENHANCE UTILIZATION OF CERVICAL CANCER SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN OTJOZONDJUPA REGION, NAMIBIA

Compiled by: Epafras Anyolo

Student No: 8709785

Course of study: PhD in Nursing Science

Institution: University of Namibia

Main supervisor: Dr Hans J Amukugo

Co – supervisor: Dr Kristofina Amakali

PARTICIPANT RESEARCH STUDY QUESTIONNAIRE

Instructions

Dear Participants,

Cervical cancer is a disease that affects women throughout the world. This questionnaire is aimed at assessing your knowledge, attitudes, and practices regarding cervical cancer. Please be assured that all your responses will be kept strictly confidential. This is an anonymous questionnaire which does not require your name or identity. Participation in this study is voluntary, and a refusal to participate will not impose any penalty.

Please answer the questions to the best of your ability and as truthfully as possible. Your responses will assist the researcher in developing an educational programme to

increase the knowledge, correct the attitudes and improve practices among women of reproductive age on cervical cancer. The investigator knows that there are no right or wrong answers in this study. What is of your interest is your own personal perspective. A researcher is available to help you filling the questionnaire if need be. Please indicate your responses for all the questions by marking **"x"** in the blocks that you feel are the most appropriate. In section B and part of section C, Likert Scale rating will be used to rate your responses as well as yes/no questions. Please read and consider the numbers for your responses on Likert Scale as follows**:** Strongly agree (1), Agree (2), Neutral (3), Disagree (4), strongly disagree (5) Do not Know (0)

By signing in the box above, you agree that you have read the above and agree to participate in this study voluntarily.

Thank you for participating

1. SECTION A: Sociodemographic data

1.1 Age (Please indicate with the "X" in the box you choose)

18 -19	
20 -24	
25 -29	
30 -34	
35 – 39	
40 -44	

45 -49	

1.2 Marital status Single: [ ] Married: [ ] Divorce: [ ] Widowed: [ ] Separated: [ ] Others ---- (please specify)

1.3 Educational level

Never attended school	
Primary education	
Secondary education	
Tertiary education	

1.3 Employment status

Student	
Housewife	
Employed	
Self-employed	
Unemployed	

1.4 Home language

English	
Herero	
Afrikaans	
Damara/Nama	
Oshiwambo	
Rukavango	
Tswana	

Silozi	
San language	
Other: specify	

1.5 Length of stay in the area

Less than 1 year	
1 – 2 years	
3 - 5 years	
6 years and above	

1.6 How many pregnancies do you have? (Parity)

0 births	
1 to 2 births	
3 or more births	

Objective: Assess the knowledge, attitude, and practice of women of the reproductive age regarding prevention, screening, and treatment of cervical cancer in Otjozondjupa region [Phase 1].

2. SECTION B: KNOWLEDGE REGARDING PREVENTION, SCREENING AND TREATMENT OF CERVICAL CANCER

2.1 General knowledge regarding the prevention of cervical cancer

2.1.1 General knowledge regarding the prevention of cervical cancer

(Rate your knowledge regarding general information about prevention of cervical cancer. Please place a tick under the number you choose).

Statements:	5	4	3	2	1	Do not know
2.1.1.1 There are usually no signs or symptoms of early cervical cancer, but it can be detected early with regular check-ups.						
2.1.1.2 Attend regular cervical cancer screening service (using Pap smear test) for early detection of precancerous cells, that suggest cervical cancer						
2.1.1.3 Avoid unprotected sexual intercourse to reduce chances of being infect with Human papilloma virus (HPV), that causes cervical cancer						
2.1.1.4 Avoid multiple pregnancy (more than 5 times pregnancies) because it is associated with cervical cancer						
2.1.1.5 Avoid multiple male sexual partners prevent sexual transmitted infections (STIs) including HPV that causes cervical cancer						
2.1.1.6 Avoid/quit cigarette smoking prevent cervical cancer						
2.1.1.7 Avoid early sexual intercourse at the young age until adulthood						
2.1.1.8 Avoid having sexual intercourse with uncircumcised partner						
2.1.1.9 Being vaccinated against Human Papillomavirus (HPV) prevents cervical cancer						
2.1.1.10 Vaccination of girls between 11- 12 years of age with HPV vaccine reduce the chances of developing cervical cancer						
2.1.1.11 Using of birth control pills for less than 5 years reduces chances of cervical cancer						

2.1.2 Knowledge regarding the factors (causes) that associated with cervical cancer

(Rate your knowledge regarding the factors that are associated with cervical cancer. Please place a tick under the number you choose)

Statements:	5	4	3	2	1	Do not know
2.1.2.1 Human papillomavirus (HPV) infection is the major risk factor for cervical cancer						
2.1.2.2 Smoking cigarettes increases the chances of getting cervical cancer						
2.1.2.3 Long –term oral use of birth control pills causes cervical cancer (for longer than 5 years)						
2.1.2.4 Being infected with Human Immune Virus (HIV), the virus that causes Acquired Immune Deficiency Syndrome (AIDS), increases the chances of getting cervical cancer						
2.1.2.5 Being sexually active at the young age (early sexual intercourse)						
2.1.2.6 Multiple pregnancy (more than 5 times pregnancies) is associated with cervical cancer						
2.1.2.7 Having unprotected sexual intercourse (without a condom) with multiple male sexual partners increase the chance of cervical cancer						
2.1.2.8 By having sexual intercourse with uncircumcised partner						
2.1.2. 9 Family history of cervical cancer increases the chance of cervical cancer						

2.1.3 Knowledge regarding the types of cervical cancer

(Rate your knowledge regarding the following statements regarding the types of cervical cancer. Please place a tick under the number you choose)

Statements:	5	4	3	2	1	Do not know
2.1.3.1 Squamous cells carcinoma is a type of cervical cancer						
2.1.3.2 Adenocarcinoma is a type of cervical cancer						

2.1.3.3 Metastatic cervical cancer (cancer that spread to other parts of the body) is cancer that has spread to other parts of the body						

2.1.4 Knowledge regarding the symptoms (what women may start complaining about) of cervical cancer

(Rate your knowledge regarding the following statements regarding the symptoms of cervical cancer. Please place a tick under the number you choose).

Statements:	5	4	3	2	1	Do not know
2.1.4.1Unusual heavy and longer vaginal bleeding is the signs suggestive of cervical screening						
2.1.4.2 Bleeding between regular menstrual periods are the signs suggestive of cervical screening						
2.1.4.3 Bleeding after having sexual intercourse						
2.1.4.4 Bleeding after douching (cleaning the vaginal canal with antiseptic medication)						
2.1.4.5 Bleeding after pelvic examination						
2.1.4.6 Bleeding after menopause (period after the women stopped seeing menstruation due to ageing).						
2.1.4.7 Constant pelvic pain not related to your menstrual cycle						
2.1.4.8 Heavy or unusual discharge that may be watery, thick, and possibly have a foul smelling						
2.1.4.9 Increased urinary frequency						
2.1.4.10 Painful intercourse						
2.1.4.11 Difficult urinating or defecating						

2.1.5 Knowledge regarding the sources of information on cervical cancer

(Rate your knowledge regarding the following statements on the source of information on cervical cancer. Please place a tick under the number you choose)

Statements:	5	4	3	2	1	Do not know
2.1.5.1 Health care workers provide enough, clear and understandable health information on cervical cancer						

2.1.5.2 Leaflets/brochures on cervical cancer are available in local languages						
2.1.5.3 Friends/relatives who visited health facility provided information on cervical cancer						
2.1.5.4 Health information on cervical cancer are available on mass media [e.g., radio, TV, newspapers]						

2.2 KNOWLEDGE REGARDING SCREENING OF CERVICAL CANCER

2.2.1 Availability of cervical cancer screening

(Rate your knowledge regarding the following statements regarding the availability of screening services. (Please place a tick under the number you choose).

Statements:	5	4	3	2	1	Do not know
2.2.1.1 Cervical cancer screening service is available at the local health centre/clinic						
2.2.1.2 Cervical cancer screening service is available at outreach point						
2.2.1.3 Cervical cancer screening service is available at the district hospital						

2.2.2 Indication of cervical cancer screening

(Rate your knowledge regarding the following statements regarding the screening for cervical cancer. (Please place a tick under the number you choose).

Statements:	5	4	3	2	1	Do not know
2.2.2.1 Unusual heavy and longer vaginal bleeding is the signs indicating the need for cervical screening						
2.2.2.2 Bleeding between regular menstrual periods are the signs indicating the need for cervical screening						
2.2.2.3 Vaginal bleeding and pelvic pain are the signs indicating of cervical screening						
2.2.2.4 Tests that examine the cervix (mouth of the womb) are used to detect precancerous lesions that suggestive cervical cancer						
2.2.2.5 Early detection of pre-cancerous cell is done by using Pap smear test (test use to determine whether cancer is developing in the cervix)						

2.2.2.6 Routine cervical cancer screening requires that HPV vaccinated women need to be screened once every three years						

2.3 KNOWLEDGE REGARDING TREATMENT OF CERVICAL CANCER

2.3.1 Types of treatment for cervical cancer

(Rate your knowledge regarding the following statements on cervical cancer. (Please place a tick under the number you choose).

Statements:	5	4	3	2	1	Do not know
2.3.1.1 Surgery or an operation to remove cancer tissues						
2.3.1.2 Chemotherapy or medications (tablets) that destroy cancer tissues						
2.3.1.3 Radiotherapy (x-ray treatment method) that burns cancer tissues						

3. SECTION C: ATTITUDE REGARDING PREVENTION, SCREENING AND TREATMENT OF CERVICAL CANCER

31 ATTITUDES REGARDING PREVENTION OF CERVICAL CANCER

3.1.1 Psycho-social influences on prevention of cervical cancer

(Rate your knowledge regarding the following statements on cervical cancer. Please place a tick under the number you choose).

Statements:	5	4	3	2	1	Do not know
3.1.1.1 Cervical cancer is real and dangerous						
3.1.1.2 Feeling at risk of cervical cancer						
3.1.1.3 Will go to the health facility to see the doctor/nurse						

3.2 ATTITUDE REGARDING SCREENING OF CERVICAL CANCER

3.2.1 Psycho-social influences on screening of cervical cancer

(Rate your knowledge regarding the following statements on cervical cancer. Please place a tick under the number you choose)

Statements:	5	4	3	2	1	Do not know

3.1.2.1 Will consult a family member before deciding to screen for cervical cancer						
3.1.2.2 Will discuss with the spouse before deciding to screen for cervical cancer						
3.1.2.3 Fear of being told positive cervical cancer result						
3.1.2.4 Fear and shame of going through the examination procedure						
3.1.2.5 Lack of time to go for cervical cancer screening because of other responsibilities.						

3.2.2 Cultural beliefs on screening of cervical cancer

(Rate your knowledge regarding the following statements on cervical cancer. (Please place a tick under the number you choose).

Statements:	5	4	3	2	1	Do not know
3.2.2.1 Afraid of being screened by known health care provider						
3.2.2.2 Shame to be screened by male health service provider						
3.2.2.3 Shame to be screened by a youth health service provider						
3.2.2.4 The procedure is too intrusive (disruption or announce)						
3.2.2.5 Shame to be associated with cervical cancer disease						

3.2.3 Factors that influence cervical cancer screening

(Rate your knowledge regarding the following statements on cervical cancer. Please place a tick under the number you choose)

Statements:	5	4	3	2	1	Do not know
3.3.1 Feeling shy to go for screening						
3.3.2 Fear to hear the test results						
3.3.3 Fear of being embarrassed						
3.3.4 Feeling not at risk because not sexually active						
3.3.6 Do not suffer of any symptoms						
3.3.7 Not aware of availability of screening services						

3.2.4 Are you willing to get Pap smear test?

Yes	
No	

3.2.5 Where would you prefer to have Pap smear test?

3.2.5.1 Local Primary health care clinic	
3.2.5.2 Health centre	
3.2.5.3 District hospital	
3.2.5.4 Private clinic	
3.2.5.5 No preferences	

3.2.6 Economic factors that influences cervical cancer

Rate your knowledge regarding the following statements on cervical cancer.

(Please place a tick under the number you choose)

Statements	5	4	3	2	1	Do not know
3.2.6.1 Distance is less than 1 KM from home to the health facility						
3.2.6.2 Distance is between 1 - 5 KM from home to the health facility						
3.2.6.3 Distance is between 5-10 KM from home to the health facility						
3.2.6.4 Distance is more than 10 KM from home to the health facility						
3.2.6.5 There is lack of transport from home to the facility						
3.2.6.5 Transport cost is not affordable						

3.3 ATTITUDE REGARDING S TREATMENT OF CERVICAL CANCER

Rate your knowledge regarding the following statements on cervical cancer.

(Please place a tick under the number you choose)

Statement:	5	4	3	2	1	Do not know
3.3.1 The chance of recovery (prognosis) is better when cervical cancer detected early						

4. SECTION D: PRACTICES REGARDING PREVENTION, SCREENING AND TREATMENT OF CERVICAL CANCER

4.1 PRACTICES REGARDING S PREVENTION OF CERVICAL CANCER

4.1.1 Have you ever been vaccinated with HPV vaccine?

Yes	
No	

4.1.2 Did you smoke in the last 6 months prior to the study?

Yes	
No	

4.1.3 Do you have a steady sexual partner?

Yes	
No	

4.1.4 If your answer is Yes in question 4.1.3, is your partner circumcised?

Yes	
No	

4.1.5 If your answer is No in question 4.1.4, why is he not circumcised? ----------

4.1.6 Have you been using oral contraceptives for > 5 years?

Yes	
No	

4.1.7 If your answer is yes in question 4.1.6, for how long have you been using contraceptives?

4.1.7.1 Less than two years	
4.1.7.2 Less than 5 years	
4.1.7.3 More than 5 years	

4.2 PRACTICES REGARDING S SCREENING OF CERVICAL CANCER

4.2.1 Uptake of cervical cancer screening (Pap smear test)

(Please place a tick under the box (s) you choose)

4.2.1.1 Once in lifetime	
4.2.1.2 Annually	
4.2.1.3 Once every two years	
4.2.1.4 Once every three years	
4.2.1.5 Never	

4.3 PRACTICES REGARDING S TREATMENT OF CERVICAL CANCER

(Rate your knowledge regarding the following statements on cervical cancer.

Please place a tick under the number you choose)

Statement:	5	4	3	2	1	Do not know
4.3.1 Cervical cancer is curable (healing) when detected early						

THANK YOU VERY MUCH FOR PARTICIPATING IN THIS STUDY

ANNEXURE E: CONSENT FOR PARTICIPATION IN THE STUDY

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

ANNEX 5

TITLE OF THE RESEARCH PROJECT: THE DEVELOPMENT OF EDUCATIONAL PROGRAMME TO ENHANCE THE UTILIZATION OF CERVICAL CANCER SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN OTJOZONDJUPA REGION, NAMIBIA.

REFERENCE NUMBER: 8709785

PRINCIPAL INVESTIGATOR: Mr Epafras Anyolo

ADDRESS: P.O. Box 24721, Windhoek

CONTACT NUMBER**:** +264 811 489844

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is entirely voluntary, and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Research Ethics Committee at The University of Namibia and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and Namibian National Research Ethics Guidelines.

1. What is this research study all about?

   You have been asked to participate in this study to help us to determine your knowledge, attitudes and practices regarding screening, prevention, and treatment for cervical cancer in Otjozondjupa region.

   I am conducting this study in fulfilment of the requirements for the doctoral degree in nursing science. The study aims to develop educational programme to empower women of reproductive regarding screening, prevention, and treatment of cervical cancer in Otjozondjupa region. The study will be conducted in the selected Primary Health Care (PHC) and clinics in Otjwarongo, Okahandja, Grootfontein and Okakarara districts. You are requested to engage in a confidential discussion between yourself and the researcher and you are expected to answer as honestly as you can.

   This project is aiming to determine the level of knowledge, attitudes and practices regarding screening, prevention, and treatment of cervical cancer among women of reproductive age in Otjozondjupa region. The research outcome will inform the development of an educational programme to empower women of reproductive age regarding cervical cancer.

   The researcher will conduct an information session with each participant who choose to take part in the study voluntary. The purpose of the session is to inform the participants that their names will not be recorded on the questionnaire to ensure

anonymity, but codes will be assigned to each participant, and that information provided will be treated as confidential. Consent will be obtained from the participants who are willing to part take in the interview. The researcher will issue the self –administered questionnaire to the participants as well as conducting one-one interview for those participants who do not know how to read and write. The interview will be conducted at the PHC and clinics during working hours. Women who will come at the clinic for any other services will be approached to take part in the study. The interview would last for about 30 – 40 minutes.

The study sample size is 381 participants, and they are proportionately distributed per selected facilities in the districts. The researcher will use randomization process to recruit the participants in the study until the sample for each site is attained.

There will be absolutely no use of medication whatsoever for this project.

2. Why have you been invited to participate?

You are invited to participate in this study because the researcher trusts that your information about knowledge, attitudes and practices regarding screening, prevention and treatment on cervical cancer could help to empower women to increase knowledge which would facilitate positive attributes towards screening, prevention and treatment of cervical cancer by up taking cervical screening services. The information you provide could guide the Ministry of health and social's policies and guidelines in the provision of healthcare services to increase knowledge, attitudes and practices regarding screening, prevention, and treatment of cervical cancer.

3. What will your responsibilities be?

Should you agree to participate, your responsibility is to answer the questions truthfully to the best of your ability. You will be given a structured self –

administered questionnaire with closed – ended and open – ended questions to answer and you are requested to place it in the box provided upon completion. Feel free to ask for clarity if you do not understand the questions or should you find that questions are not clearly stated. You are also free to ask the researcher to help you complete the questionnaire for you by answering the questions. You are not required to write down your real names on the questionnaire to ensure anonymity in the study.

On the day of your visit to the health facility for any other services, upon being attended to for what you came for and/or before being attend, you will be approached by the researcher to explain the purpose of the study and asks you for voluntary participation in the study. The duration will be 30 – 40 minutes to complete the questionnaire.

4. Will you benefit from taking part in this research?

You will have no direct personal benefits from participating in this study. However, your participation would aid the development of educational programme to empower women with knowledge, positive attributes and practices regarding screening, prevention, and treatment for cervical cancer in Otjozondjupa region.

5. Are there in risks involved in your taking part in this research?

This study will not involve any physical harm but might involve minor risk of psychological discomfort. Some potential risks may include exhaustion and emotional discomfort from answering sensitive questions - should you encounter such risk during the interview, kindly inform the researcher so that it is immediately addressed and or minimised.

6. If you do not agree to take part, what alternatives do you have?

   Participation to the study is voluntary and there will be no repercussions or penalty should you choose not to participate in the study. Should you agree to part take, you have the right and choice to withdraw from the study at any time without giving a reason nor without any penalty or blame or prejudice. There will be no treatment provided.

7. Who will have access to your medical records? (Where applicable)

   There will be no medical records to be collected from you. Information collected will be treated as confidential and protected. You will be identified by codes and no information will be linked to any other participant or health care worker. If the information is used in a thesis or publication, your identity will remain anonymous. No information provided during the course of the study will be revealed or made available to any person other than the supervisors of the study.

8. What will happen in the unlikely event of some form injury occurring as a direct result of your taking part in this research study?

   There is no anticipated risk of injury to be arising as a direct result of your taking part in this study and no pharmaceutical agents are involved in this study. However, respondents will be referred to social workers and/or psychologist for counselling, should any emotional or psychological harm occur.

9. Will you be paid to take part in this study and are there any costs involved?

There is no compensation for your participation in this study.

10 Is there anything else that you should know or do?

a) *You should inform your family practitioner or usual doctor that you are taking part in a research study. (Include if applicable)*

b) *You should also inform your medical insurance company that you are participating in a research study. (Include if applicable)*

c) *You can contact Dr Dr Hans Amukugo/Mr Epafras Anyolo at tel +264 811 493 928/+264 811489844 if you have any further queries or encounter any problems.*

d) *You can contact the Centre for Research and Publications at* +264 061 2063061; **pclaassen@unam.na** *if you have any concerns or complaints that have not been adequately addressed by the investigator.*

e) *You will receive a copy of this information and consent form for your own records.*

Declaration by participant

By signing below, I ……..……. agree to take part in

a research study entitled *(insert title of study).*

I declare that:

a) I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.

b) I have had a chance to ask questions and all my questions have been adequately answered.

c) I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

d) I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

e) I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…..…….. on (*date*) ……...……..

2005.

.....

Signature of participant Signature of witness

Declaration by investigator

I *(name)* declare that:

- I explained the information in this document to ……
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use a interpreter. (*If a interpreter is used then the interpreter must sign the declaration below.*

Signed at (*place*) .....…..…… on (*date*) ……...……..2005.

..... **.....**

Signature of investigator Signature of witness

Declaration by interpreter

I *(name)*declare that:

a) I assisted the investigator (*name*) ……. to explain the information in this document to (*name of participant*) ……..…….. using the language medium of (Oshiwambo, Oshiherero, Afrikaans, etc.)

ANNEXURE F: APPROVAL LETTER TO CONDUCT THE STUDY FROM THE REGIONAL DIRECTOR: OTJOZONDJUPA REGION

From: Maria Kavezembi [mailto:Maria.Kavezembi@mhss.gov.na]
Sent: 25 July 2017 04:03 PM
To: Anyolo, Epafras J
Subject: Re: RESEARCH PROPOSAL TO CONDUCT RESEARCH STUDY IN OTJOZONDJUPA REGION

Dear Mr Anyolo

Herewith a confirmation of the receipt of your proposal. I have forwarded it to the respective districts.
Kindly go ahead.

Best regards

Maria Kavezembi

ANNEXURE G: EVALUATION TOOLS FOR PROGRAMME IMPLEMENTATION

1.Daily evaluation tool on programme implementation (formative evaluation**)**

Dear Participant Please share your views on the implementation of this programme by answering the following questions
What did you learn in today `s training?
What challenges did you experience during topic presentations?
What didn`t you understand in today`s sessions?
Which session(s) was most useful to you and why?
What changes do you think needs to be made to perfect presentations?

2. Evaluation tool on the knowledge, attitudes, and practices of the participants on cervical cancer (summative evaluation)

a) Knowledge questions

Statement	1	2	3	4	5	Total
General information of CC well understood						
Pap smear test use to detect early precancerous lesions, that suggest cancer						
Cervical cancer is curable when detected early						
HPV infection and risk of development of CC						
Types of CC well understood						
Symptoms of CC well understood						
Factors associated with CC well understood						
Factors that influence women for not seeking cervical screening services well understood						
Prevention methods of CC well understood						
Types of treatment of CC well understood						

b) Attitudes questions

Statement	1	2	3	4	5	Total
Psycho – social influences of women on CC well understood						
Cultural believes that influences women for not seeking cervical screening well understood						
Economic factors that influence women for not accessing cervical screening services well understood						
Willingness to uptake cervical screening for early detect of CC						
Willingness to take young girls (9 -12 years) for HPV vaccination						

c) Practice questions

Statement	1	2	3	4	5	Total
Pap smear and VIA are methods used to detect cervical lesions that suggest cervical cancer						
Early detection of cervical cancer ensures possible better treatment outcome						
Cervical cancer is curable						

1. Programme evaluation tool (summative evaluation)

Dear Participant Please share your views regarding the effectiveness of this programme by answering the following questions. Please circle the number you choose for your response. 0 = no, 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree and 5 = strongly agree	
Do you think that this training is important?	0 1 2 3 4 5
Do you think this training was helpful to you?	0 1 2 3 4 5
Do you think this training has achieved its objectives?	0 1 2 3 4 5
Do you think that this training has improved your knowledge?	0 1 2 3 4 5
Are you going to implement what you have learned from this training?	0 1 2 3 4 5

ANNEXURE H: TRAINING CURRICULUM FOR AN EDUCATIONAL PROGRAMME

TRAINING CURRICULUM FOR AN EDUCATIONAL PROGRAMME TO ENHANCE THE UTILIZATION OF CERVICAL CANCER SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN OTJOZONDJUPA REGION, NAMIBIA

Name of the programme: An educational programme to enhance the utilization of cervical cancer services among women of reproductive age in Otjozondjupa region, Namibia.

THE PURPOSE OF THE EDUCATIONAL PROGRAMME

The purpose of this educational programme was to enhance the knowledge and improve attitudes and practice of women of reproductive age on screening, prevention and treatment of cervical cancer.

Mode of training and duration: The training programme will be implemented in a form of a workshop that lasts for three days.

Objectives of the training programme

The following are the objectives of the programme and described as follows:

- To enhance the knowledge of women of reproductive age on the prevention, screening and treatment of cervical cancer in Otjozondjupa region'
- To enhance positive attitudes of women of reproductive age regarding prevention, screening, and treatment of cervical cancer in Otjozondjupa region

- To promote the uptake of cervical screening among women of reproductive age regarding prevention, screening, and treatment of cervical cancer in Otjozondjupa region.

Target population of the study

The target population will be women of reproductive age in Otjozondjupa region.

COURSE UNITS:

Unit 1

Aim: To enhance the knowledge of women of reproductive age on the prevention, screening, and treatment of cervical cancer

Objectives: By the end of this training session, participants will be able to:

- Define cervical cancer and cervical screening
- Describe preventive measures for cervical cancer
- Identify the types of cervical cancer
- Describe the symptoms that suggest cervical cancer
- Identify the appropriate sources of information on cervical cancer.
- Identify health facilities where cervical screening is available
- Describe the factors that are associated with the development of cervical cancer
- List the types of treatment for cervical cancer

Unit content:

Content	Teaching/learning methods	Theory applied
Knowledge regarding prevention, screening and treatment of cervical cancer in respect of: • Definition of cervical cancer • Preventive measures • Types of cervical cancer • Symptoms of cervical cancer and the source of information on cervical cancer. • Appropriate sources of information on cervical cancer • Screening for cervical cancer: the availability of cervical cancer screening services, indicators (factors that influences screening) of cervical cancer screening, • Factors that are associated with the development of cervical cancer • Treatment for cervical cancer: the types of treatment of cervical cancer.	• Lecture (using power point presentation) • • Group discussion (groups of three to four participants) and brainstorming	• Kolb's experiential learning theory (concrete experience) • • Knowles' theory of andragogy

Unit 2

Aim: To enhance positive attitudes of women of reproductive age regarding prevention, screening, and treatment of cervical cancer.

Objectives: By the end of this training session, participants will be able to:

- List the psycho-social influences on prevention and screening of cervical cancer
- Identify the cultural believes that impeded women to seek for cervical screening
- Describe the factors that influence women to seek for cervical screening,
- Describe economic factors that influence women participation in cervical screening

Unit content:

Content	Teaching/learning methods	Theory applied
Attitudes regarding prevention, screening, and treatment of cervical cancer in respect of: Attitude regarding prevention: • Psycho-social influences on prevention of cervical cancer Attitude regarding screening: • Psycho-social influences on screening of cervical cancer, • Cultural believes that influences women on the attempt to seek for cervical screening services,	• Lecture (using power point presentation) • Group discussion (groups of three to four participants) and brainstorming • Reporting in plenary/discussions	• Kolb's experiential learning theory (concrete experience, reflective observation) • Knowles' theory of andragogy

• Factors that influence women for not seeking cervical screening services, • Accessibility and affordability of screening and treatment services Attitude regarding treatment: • The benefits of earlier detection; and curability of CC		

Unit 3

Aim**:** To promote the uptake of cervical screening among women of reproductive age regarding prevention, screening, and treatment of cervical cancer.

Objectives: By the end of this training session, participants will be able to:

- Describe the benefits of HPV vaccination in the prevention of cervical cancer
- Describe the danger of smoking in relation to cervical cancer
- Describe the risk of having multiple sexual partners
- Describe the danger of usage of oral contraceptives for >5years.
- Describe VIA versus Pap smear test as methods for cervical screening.

Unit content

Content	Teaching/learning methods	Theory applied
• Definition of cervical screening • Earlier detection for curability • HPV vaccination • Smoking	• Lecture (using power point presentation) • Group discussion (groups of three to four participants) • Brainstorming	• Kolb's experiential learning theory (concrete experience, reflective observation, and abstract conceptualization)

• Sexual partner • Oral contraceptives • Uptake of screening • Pap smear test • VIA as preferred method	• Plenary discussions	• Knowles' theory of andragogy

Sources: The units of the educational programme are based on the dynamic /challenges identified in Phase 1 of the study (basis of the study: Chapter 7: Table 7.1; Chapter 4: Table 5.1).

Crosstabulation

			Age bracket							Total
			18 - 19	20 - 24	25 - 29	30 - 34	35 – 39	40 - 44	45 - 49	
Collapsed - Cervical cancer is real and dangerous	Agree	Count	11	17	34	37	44	34	25	202
		% within Collapsed - Cervical cancer is real and dangerous	5.4%	8.4%	16.8%	18.3%	21.8%	16.8%	12.4%	100.0%
	Disagree	Count	7	24	22	40	43	33	23	192
		% within Collapsed - Cervical cancer is real and dangerous	3.6%	12.5%	11.5%	20.8%	22.4%	17.2%	12.0%	100.0%
Total		Count	18	41	56	77	87	67	48	394
		% within Collapsed - Cervical cancer is real and dangerous	4.6%	10.4%	14.2%	19.5%	22.1%	17.0%	12.2%	100.0%

Collapsed - Cervical cancer is real and dangerous * Marital status Crosstab

			Marital status						Total
			Single	Married	Divorced	Widowed	Separated	Cohabiting	
Collapsed - Cervical cancer is real and dangerous	Agree	Count	112	58	1	3	5	17	196
		% within Collapsed - Cervical cancer is real and dangerous	57.1%	29.6%	0.5%	1.5%	2.6%	8.7%	100.0%
	Disagree	Count	113	51	2	0	4	21	191
		% within Collapsed - Cervical cancer is real and dangerous	59.2%	26.7%	1.0%	0.0%	2.1%	11.0%	100.0%
	Total	Count	225	109	3	3	9	38	387
		% within Collapsed - Cervical cancer is real and	58.10 %	28.20 %	0.80%	0.80%	2.30%	9.80%	100.00 %

		dangerous							

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	4.256[a]	5	.513	.553		
Likelihood Ratio	5.422	5	.367	.489		
Fisher's Exact Test	3.992			.584		
Linear-by-Linear Association	.046[b]	1	.830	.844	.428	.026
N of Valid Cases	387					

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 1.48.

b. The standardized statistic is .214.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	4.631[a]	6	.592	.596		
Likelihood Ratio	4.662	6	.588	.596		
Fisher's Exact Test	4.616			.598		
Linear-by-Linear Association	.027[b]	1	.871	.880	.447	.024
N of Valid Cases	394					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.77.

b. The standardized statistic is .163.

ANNEXURE I: PEARSON CROSS TABULATION AND

CHI-SQUARE TESTS

AGE OF RESPONDENTS

Collapsed - Cervical cancer is real and dangerous * Educational level

Crosstab

			Educational level				
			Not attended Sch	Primary	Secondary	Tertiary	Total
Collapsed - Cervical cancer is real and dangerous	Agree	Count	5	46	123	28	202
		% within Collapsed - Cervical cancer is real and dangerous	2.5%	22.8%	60.9%	13.9%	100.0%
	Disagree	Count	38	75	69	9	191
		% within Collapsed - Cervical cancer is real and dangerous	19.9%	39.3%	36.1%	4.7%	100.0%
Total		Count	43	121	192	37	393
		% within Collapsed - Cervical cancer is real and dangerous	10.9%	30.8%	48.9%	9.4%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	56.957[a]	3	.000	.000		
Likelihood Ratio	61.042	3	.000	.000		
Fisher's Exact Test	59.768			.000		
Linear-by-Linear Association	54.895[b]	1	.000	.000	.000	.000
N of Valid Cases	393					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.98.

b. The standardized statistic is -7.409.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	21.313[a]	4	.000	.000		
Likelihood Ratio	21.628	4	.000	.000		
Fisher's Exact Test	21.207			.000		
Linear-by-Linear Association	18.771[b]	1	.000	.000	.000	.000
N of Valid Cases	393					

Collapsed - Feeling at risk of cervical cancer * Age bracket

Crosstabulation

			Age bracket							
			18 -19	20 -24	25 -29	30 -34	35 – 39	40 -44	45 - 49	Total
Collapsed - Feeling at risk of cervical cancer	Agree	Count	3	6	14	23	18	18	15	97
		% within Collapsed - Feeling at risk of cervical cancer	3.1%	6.2%	14.4%	23.7%	18.6%	18.6%	15.5%	100.0%
	Disagree	Count	15	35	42	54	69	49	32	296
		% within Collapsed - Feeling at risk of cervical cancer	5.1%	11.8%	14.2%	18.2%	23.3%	16.6%	10.8%	100.0%
Total		Count	18	41	56	77	87	67	47	393
		% within Collapsed - Feeling at risk of cervical cancer	4.6%	10.4%	14.2%	19.6%	22.1%	17.0%	12.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	6.207[a]	6	.400	.403		
Likelihood Ratio	6.435	6	.376	.390		
Fisher's Exact Test	6.098			.411		
Linear-by-Linear Association	2.399[b]	1	.121	.122	.065	.008
N of Valid Cases	393					

Collapsed - Feeling at risk of cervical cancer * Marital status

Crosstabulation

			Marital status						
			Single	Married	Divorced	Widowed	Separated	Cohabiting	Total
Collapsed - Feeling at risk of cervical cancer	Agree	Count	54	31	2	1	5	3	96
		% within Collapsed - Feeling at risk of cervical cancer	56.3%	32.3%	2.1%	1.0%	5.2%	3.1%	100.0%
	Disagree	Count	170	78	1	2	4	35	290
		% within Collapsed - Feeling at risk of cervical cancer	58.6%	26.9%	0.3%	0.7%	1.4%	12.1%	100.0%
Total		Count	224	109	3	3	9	38	386
		% within Collapsed - Feeling at risk of cervical cancer	58.0%	28.2%	0.8%	0.8%	2.3%	9.8%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	14.129[a]	5	.015	.015		
Likelihood Ratio	14.431	5	.013	.015		

Fisher's Exact Test	14.675			.007		
Linear-by-Linear Association	1.139[b]	1	.286	.289	.152	
N of Valid Cases	386					

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .75.

b. The standardized statistic is 1.067.

Crosstabulation

			Educational level				
			Not attended Sch	Primary	Secondary	Tertiary	Total
Collapsed-Feelingatri	Agree	Count	3	21	56	17	97
		% within Collapsed - Feeling at risk of cervical cancer	3.1%	21.6%	57.7%	17.5%	100.0%
	Disagree	Count	40	100	135	20	295
		% within Collapsed - Feeling at risk of cervical cancer	13.6%	33.9%	45.8%	6.8%	100.0%

skofcervicalcancer						
Total	Count	43	121	191	37	392
	% within Collapsed - Feeling at risk of cervical cancer	11.0%	30.9%	48.7%	9.4%	100.0%

Collapsed - Feeling at risk of cervical cancer * Educational level

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	21.915[a]	3	.000	.000		
Likelihood Ratio	23.067	3	.000	.000		
Fisher's Exact Test	22.226			.000		

Linear-by-Linear Association	21.491[b]	1	.000	.000	.000	.000
N of Valid Cases	392					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.16.

b. The standardized statistic is -4.636.

Collapsed - Feeling at risk of cervical cancer * Employment status

Crosstabulation

			Employment status					
			Student	House wife	Employed	Self employed	Unemployed	Total
Collap	Agree	Count	5	5	49	5	33	97
		% within Collapsed - Feeling at risk of cervical cancer	5.2%	5.2%	50.5%	5.2%	34.0%	100.0%
	Disagree	Count	13	8	84	21	169	295

sed-Feeling at risk of cervical cancer	% within Collapsed - Feeling at risk of cervical cancer	4.4%	2.7%	28.5%	7.1%	57.3%	100.0%
Total	Count	18	13	133	26	202	392
	% within Collapsed - Feeling at risk of cervical cancer	4.6%	3.3%	33.9%	6.6%	51.5%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	19.948[a]	4	.001	.001		
Likelihood Ratio	19.687	4	.001	.001		
Fisher's Exact Test	19.854			.000		
Linear-by-Linear Association	14.303[b]	1	.000	.000	.000	.000
N of Valid Cases	392					

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.22.

b. The standardized statistic is 3.782.

Crosstabulation

		Age bracket							Total
		18 -19	20 -24	25 -29	30 -34	35 – 39	40 - 44	45 -49	
Agree	Count	14	29	37	51	69	46	37	283
	% within Collapsed - Shame to be screened by male health service provider	4.9%	10.2%	13.1%	18.0%	24.4 %	16.3 %	13.1%	100.0%
Disagree	Count	4	12	19	26	18	21	11	111
	% within Collapsed - Shame to be screened by male health service provider	3.6%	10.8%	17.1%	23.4%	16.2 %	18.9 %	9.9%	100.0%

Total	Count	18	41	56	77	87	67	48	394
	% within Collapsed - Shame to be screened by male health service provider	4.6%	10.4%	14.2%	19.5%	22.1 %	17.0 %	12.2%	100.0%

Collapsed - Shame to be screened by male health service provider * Age bracket

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	5.842[a]	6	.441	.445		
Likelihood Ratio	5.957	6	.428	.440		
Fisher's Exact Test	5.852			.440		
Linear-by-Linear Association	.520[b]	1	.471	.481	.246	.021
N of Valid Cases	394					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.07.

b. The standardized statistic is -.721.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	7.762[a]	5	.170	.160		
Likelihood Ratio	7.425	5	.191	.237		
Fisher's Exact Test	7.559			.148		
Linear-by-Linear Association	1.108[b]	1	.293	.308	.155	.016
N of Valid Cases	387					

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .84.

b. The standardized statistic is 1.053.

Collapsed - Shame to be screened by male health service provider * Marital status

Crosstabulation

			Marital status						Total
			Single	Married	Divorced	Widowed	Separated	Cohabiting	
Collapsed - Shame to be screened by male health service provider	Agree	Count	168	75	1	1	8	25	
		% within Collapsed - Shame to be screened by male health service provider	60.4%	27.0%	0.4%	0.4%	2.9%	9.0%	100.0%
	Disagree	Count	57	34	2	2	1	13	

	% within Collapsed - Shame to be screened by male health service provider	52.3%	31.2%	1.8%	1.8%	0.9%	11.9%	100.0%
Total	Count	225	109	3	3	9	38	
	% within Collapsed - Shame to be screen	58.1%	28.2%	0.8%	0.8%	2.3%	9.8%	100.0%

	ed by male health service provider						

Collapsed - Shame to be screened by male health service provider * Educational level

Crosstabulation

			Educational level				
			Not attended Sch	Primary	Secondary	Tertiary	Total
Collapsed - Shame to be screened by male health service provider	Agree	Count	28	95	132	27	282
		% within Collapsed - Shame to be screened by male health service provider	9.9%	33.7%	46.8%	9.6%	100.0%
	Disagree	Count	15	26	60	10	111

	% within Collapsed - Shame to be screened by male health service provider	13.5%	23.4%	54.1%	9.0%	100.0%
Total	Count	43	121	192	37	393
	% within Collapsed - Shame to be screened by male health service provider	10.9%	30.8%	48.9%	9.4%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	4.544[a]	3	.208	.212		
Likelihood Ratio	4.643	3	.200	.205		
Fisher's Exact Test	4.644			.199		
Linear-by-Linear Association	.078[b]	1	.780	.783	.418	
N of Valid Cases	393					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.45.

b. The standardized statistic is .279.

Crosstab

			Employment status					
			Student	House wife	Employed	Self employed	Unemployed	Total
Collapsed - Shame to be screened by male health service provider	Agree	Count	16	10	88	22	146	282
		% within Collapsed - Shame to be screened by male health service provider	5.7%	3.5%	31.2%	7.8%	51.8%	100.0%
	Disagree	Count	2	3	46	4	56	111
		% within Collapsed - Shame to be screened by male health service provider	1.8%	2.7%	41.4%	3.6%	50.5%	100.0%
Total		Count	18	13	134	26	202	393
		% within Collapsed - Shame to be screened by male health service provider	4.6%	3.3%	34.1%	6.6%	51.4%	100.0%

Collapsed - Shame to be screened by male health service provider * Employment status

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	7.374[a]	4	.117	.116		
Likelihood Ratio	8.073	4	.089	.101		
Fisher's Exact Test	7.065			.128		

Linear-by-Linear Association	.017[b]	1	.895	.925	.469	
N of Valid Cases	393					

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.67.

b. The standardized statistic is .131.

Crosstabulation

			Employment status					
			Student	House wife	Employed	Self employed	Unemployed	Total
Collapsed - Shame to be screened by male health service provider	Agree	Count	16	10	88	22	146	282
		% within Collapsed - Shame to be screened by male health service provider	5.7%	3.5%	31.2%	7.8%	51.8%	100.0%
	Disagree	Count	2	3	46	4	56	111
		% within Collapsed - Shame to be screened by male health service provider	1.8%	2.7%	41.4%	3.6%	50.5%	100.0%
Total		Count	18	13	134	26	202	393
		% within Collapsed - Shame to be screened by male health service provider	4.6%	3.3%	34.1%	6.6%	51.4%	100.0%

Collapsed - Shame to be screened by a youth health service provider * Age bracket

Crosstabulation

			Age bracket							Total
			18 -19	20 -24	25 -29	30 - 34	35 – 39	40 - 44	45 -49	
Collapsed - Shame to be screened by a youth health service provider	Agree	Count	8	10	15	18	24	13	15	
		% within Collapsed - Shame to be screened by a youth health service provider	7.8%	9.7%	14.6%	17.5 %	23.3 %	12.6 %	14. 6%	100.0%
	Disagree	Count	10	30	41	58	63	54	33	
		% within Collapsed - Shame to be screened by a youth health service provider	3.5%	10.4%	14.2%	20.1 %	21.8 %	18.7 %	11. 4%	100.0%
Total		Count	18	40	56	76	87	67	48	
		% within Collapsed - Shame to be screened by a youth health service provider	4.6%	10.2%	14.3%	19.4 %	22.2 %	17.1 %	12. 2%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	5.696[a]	6	.458	.462		
Likelihood Ratio	5.471	6	.485	.498		
Fisher's Exact Test	5.644			.464		
Linear-by-Linear Association	.472[b]	1	.492	.514	.257	
N of Valid Cases	392					

a. 1 cells (7.1%) have expected count less than 5. The minimum expected count is 4.73.

b. The standardized statistic is .687.

Collapsed - Shame to be screened by a youth health service provider * Marital status

Crosstabulation

			Marital status						
			Single	Married	Divorced	Widowed	Separated	Cohabiting	Total
Collapsed - Shame to be screened by a youth health service provider	Agree	Count	56	29	2	1	5	8	101
		% within Collapsed - Shame to be screened by a youth health service provider	55.4%	28.7%	2.0%	1.0%	5.0%	7.9%	100.0%
	Disagree	Count	167	80	1	2	4	30	284

	% within Collapsed - Shame to be screened by a youth health service provider	58.8%	28.2%	0.4%	0.7%	1.4%	10.6 %	100.0%
Total	Count	223	109	3	3	9	38	385
	% within Collapsed - Shame to be screened by a youth health service provider	57.9%	28.3%	0.8%	0.8%	2.3%	9.9%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	7.291[a]	5	.200	.183		
Likelihood Ratio	6.373	5	.272	.323		
Fisher's Exact Test	7.186			.169		
Linear-by-Linear Association	.098[b]	1	.755	.766	.386	.028
N of Valid Cases	385					

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .79.

b. The standardized statistic is -.312.

Collapsed - Shame to be screened by a youth health service provider * Educational level

Crosstabulation

			Educational level				Total
			Not attended Sch	Primary	Secondary	Tertiary	
Collapsed - Shame to be screened by a youth health service provider	Agree	Count	11	30	57	4	
		% within Collapsed - Shame to be screened by a youth health service provider	10.8%	29.4%	55.9%	3.9%	100.0%
	Disagree	Count	32	91	133	33	
		% within Collapsed - Shame to be screened by a youth health service provider	11.1%	31.5%	46.0%	11.4%	100.0%
Total		Count	43	121	190	37	
		% within Collapsed - Shame to be screened by a youth health service provider	11.0%	30.9%	48.6%	9.5%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	6.098[a]	3	.107	.107		
Likelihood Ratio	6.928	3	.074	.077		
Fisher's Exact Test	6.340			.094		
Linear-by-Linear Association	.269[b]	1	.604	.619	.326	.049
N of Valid Cases	391					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.65.

b. The standardized statistic is .519.

Collapsed - Shame to be screened by a youth health service provider * Employment status

Crosstabulation

			Employment status					
			Student	Housewife	Employed	Self employed	Unemployed	Total
Collapsed - Shame to be screened by a youth health service provider	Agree	Count	9	4	30	5	54	102
		% within Collapsed - Shame to be screened by a youth health service provider	8.8%	3.9%	29.4%	4.9%	52.9%	100.0%
	Disagree	Count	9	9	104	21	146	289

	% within Collapsed - Shame to be screened by a youth health service provider	3.1%	3.1%	36.0%	7.3%	50.5%	100.0%
Total	Count	18	13	134	26	200	391
	% within Collapsed - Shame to be screened by a youth health service provider	4.6%	3.3%	34.3%	6.6%	51.2%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	7.157[a]	4	.128	.125		
Likelihood Ratio	6.562	4	.161	.177		
Fisher's Exact Test	6.741			.143		
Linear-by-Linear Association	.510[b]	1	.475	.497	.252	.030
N of Valid Cases	391					

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.39.

b. The standardized statistic is .714.

Have you been screened for CC * Age brackets

Crosstabulation

			Age bracket						
			18 - 19	20 -24	25 -29	30 -34	35 – 39	40 - 44	45 - 49	Total
Have you been screened for CC	No	Count	15	37	43	51	52	42	23	
		% within Have you been screened for CC	5.7%	14.1%	16.3%	19.4%	19.8%	16.0 %	8.7%	100.0%
	Yes	Count	3	4	13	26	33	21	24	
		% within Have you been screened for CC	2.4%	3.2%	10.5%	21.0%	26.6%	16.9 %	19.4 %	100.0%
Total		Count	18	41	56	77	85	63	47	
		% within Have you been screened for CC	4.7%	10.6%	14.5%	19.9%	22.0%	16.3 %	12.1 %	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	23.069[a]	6	.001	.[b]		
Likelihood Ratio	24.950	6	.000	.[b]		
Fisher's Exact Test	.[b]			.[b]		

Linear-by-Linear Association	18.397[c]	1	.000	.000	.000	
N of Valid Cases	387					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.77.

b. Cannot be computed because there is insufficient memory.

c. The standardized statistic is 4.289.

Have you been screened for CC * Marital status

Crosstabulation

			Marital status						Total
			Single	Married	Divorced	Widowed	Separated	Cohabiting	
Have you been screened for CC	No	Count	158	63	1	0	4	31	
		% within Have you been screened for CC	61.5%	24.5%	0.4%	0.0%	1.6%	12.1%	100.0%
	Yes	Count	63	44	2	3	4	7	
		% within Have you been screened for CC	51.2%	35.8%	1.6%	2.4%	3.3%	5.7%	100.0%
Total		Count	221	107	3	3	8	38	
		% within Have you been screened for CC	58.2%	28.2%	0.8%	0.8%	2.1%	10.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	17.643[a]	5	.003	.002		
Likelihood Ratio	18.177	5	.003	.003		
Fisher's Exact Test	16.843			.002		
Linear-by-Linear Association	.056[b]	1	.813	.833	.425	
N of Valid Cases	380					

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .97.

b. The standardized statistic is -.237.

Crosstabulation

			Educational levels			
			Primary	Secondary	Tertiary	Total
Have you been screened for CC	No	Count	39	99	109	15	262
		% within Have you been screened for CC	14.9%	37.8%	41.6%	5.7%	100.0%
	Yes	Count	3	19	80	22	124
		% within Have you been screened for CC	2.4%	15.3%	64.5%	17.7%	100.0%

Total	Count	42	118	189	37	386
	% within Have you been screened for CC	10.9%	30.6%	49.0%	9.6%	100.0%

Have you been screened for CC * Educational levels

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	47.618[a]	3	.000	.000		
Likelihood Ratio	51.387	3	.000	.000		
Fisher's Exact Test	50.012			.000		
Linear-by-Linear Association	45.305[b]	1	.000	.000	.000	
N of Valid Cases	386					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.89.

b. The standardized statistic is 6.731.

Have you been screened for CC * Employment status

Crosstabulation

			Employment status					
			Student	House wife	Employed	Self employed	Unemployed	Total
Have you been screened for CC	No	Count	13	6	65	18	160	
		% within Have you been screened for CC	5.0%	2.3%	24.8%	6.9%	61.1%	100.0%
	Yes	Count	5	7	66	7	39	
		% within Have you been screened for CC	4.0%	5.6%	53.2%	5.6%	31.5%	100.0%
Total		Count	18	13	131	25	199	
		% within Have you been screened for CC	4.7%	3.4%	33.9%	6.5%	51.6%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	37.511[a]	4	.000	.000		
Likelihood Ratio	37.282	4	.000	.000		

Fisher's Exact Test	37.172			.000		
Linear-by-Linear Association	22.880[b]	1	.000	.000	.000	
N of Valid Cases	386					

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.18.

b. The standardized statistic is -4.783.

Collapsed - Cervical cancer is real and dangerous * Employment status

Crosstabulation

			Employment status					Total
			Student	Housewife	Employed	Self employed	Unemployed	
Collapsed - Cervical cancer is real and dangerous	Agree	Count	13	9	85	10	85	202
		% within Collapsed - Cervical cancer is real and dangerous	6.4%	4.5%	42.1%	5.0%	42.1%	100.0%
	Disagree	Count	5	4	49	16	117	191
		% within Collapsed - Cervical cancer is real and dangerous	2.6%	2.1%	25.7%	8.4%	61.3%	100.0%
Total		Count	18	13	134	26	202	393
		% within Collapsed - Cervical cancer is real and dangerous	4.6%	3.3%	34.1%	6.6%	51.4%	100.0%

ANNEXURE J: DESCRIPTIVE STATISTICS: MEAN AND Std DEVIATIONS

4.1 KNOWLEDGE REGARDING PREVENTION, SCREENING AND TREATMENT OF CERVICAL CANCER (CC)

4.1.1 Descriptive statistics on the general knowledge regarding preventive measures of cervical cancer

The study determined the mean and standard deviations of the variables on the knowledge regarding prevention of CC and is illustrated in (Table 4.1) below.

Table 1: Descriptive statistics on the general knowledge regarding preventive measures of cervical cancer

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
. ECC	390	0	5	.71	1.233
AEP	394	0	5	1.67	1.773
AIW	394	0	5	2.11	1.572
APM	394	0	5	1.86	1.616
ASP	394	0	5	1.95	1.519
ART	393	0	5	1.73	1.462
ASE	392	0	5	1.72	1.554
BVA	391	0	5	.32	1.118
VGV	392	0	4	.11	.541
UBP	392	0	5	1.30	1.211
HPI	391	0	5	.37	1.106

CCC	387	0	5	.42	1.224
CTN	393	0	5	2.37	1.841

Table 1 indicates that the highest mean is 2.37 (Abnormal cells suggesting cervical cancer can be detected early by using PAP Smear test [CTN] and the lowest is .11 (Vaccination of girls between 11- 12 years of age with HPV vaccine reduce the chances of developing cervical cancer [VGV]. This means that the responses to the statements were divergent and not all agreed with the statements. The highest standard deviation was 1.841 and the lowest was .541. This means that the knowledge level of respondents with regards to what are the preventive measure of CC were inadequate (low) as the majority of the respondents did not agree with the statements.

4.1.2 Descriptive statistics on the knowledge regarding the types of CC

The study determined the mean and standard deviations of variables regarding the types of CC as presented in (Table 4. 2) below.

Table 2: Descriptive statistics on the knowledge regarding the types of CC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SCC	388	0	2	.01	.102
ATC	388	0	2	.01	.102
MCC	387	0	5	.23	.853

Table 2 above indicates that the highest mean is .23 (Metastatic cervical cancer is cancer that has spread to other parts of the body [MCC]) and the lowest is 0.1

(Adenocarcinoma is a type of cervical cancer [ATC]. The highest standard deviation was .853 and lowest .102. This means that the responses to the statements were divergent, and the majority of the respondents did not agree with the statements. This reflects that the respondents have inadequate (low) knowledge regarding the types of CC.

4.1.3 Descriptive statistics on the knowledge regarding the symptoms of CC

The study determined the mean and standard deviations of variables regarding symptoms of CC and is presented in Table 4.3 below.

Table 3: Descriptive statistics on the knowledge regarding the symptoms of CC

Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
UVB	393	0	5	2.03	1.602
BMP	390	0	5	1.00	1.295
BSI	393	0	4	.59	.919
BAD	390	0	5	.64	1.037
BAP	390	0	5	.99	1.256
BAM	384	0	5	1.01	1.466
CPP	391	0	5	1.71	1.687
HUD	391	0	5	.70	1.052
IUF	393	0	5	.88	1.217
PI	393	0	5	.52	.869

Table 3 shows that the highest mean is 2.03 (Unusual heavy and longer vaginal bleeding [UVB]) and the lowest is .52 (Painful intercourse [PI]). This means that the responses to the statement were divergent and not all respondents agreed with the

statements. The highest Std. deviation was 1.687 and the lowest was .869. This indicates that the responses on the symptoms of cervical cancer were divergent. It means that the knowledge level of the respondents with regards to the symptoms of CC was inadequate (low) as the majority of respondents did not agree with the statements.

4.1.4 Descriptive statistics on the knowledge regarding the indications (factors associated) of CC screening

The study determined the mean and standard deviations of variables on the factors associated with CC and are presented in Table 4.4 below.

Table 4: Descriptive statistics on the knowledge regarding the indications of CC screening

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
HPV	387	0	5	.50	1.243
SCI	391	0	5	1.93	1.503
BCP	389	0	5	1.33	1.217
BIW	391	0	5	2.14	1.474
BSA	390	0	5	1.91	1.562
MPC	381	0	5	1.01	1.461
HUS	390	0	5	1.75	1.699
BSI	390	0	5	1.64	1.531
FHC	391	0	5	1.57	1.529

Table 4 above indicates that the highest mean is 2.14 (being infected with HIV, the virus that causes AIDS, increases the chances of getting cervical cancer [BIW] and the lowest is .50 (being infected with Human PapillomaVirus (HPV) is associated with cervical cancer [HPV]. The highest standard deviation was 1.699 and the lowest was 1.217. This means that the responses to the statements were divergent, and the majority of the respondents did not agree with the statements. This indicates that the knowledge regarding factors associated with CC among the respondents is low.

4.2 ATTITUDE REGARDING PREVENTION, SCREENING AND TREATMENT OF CERVICAL CANCER

4.2.1 Psycho-social influences on prevention of CC

The study determined the mean and standard deviations of variables regarding psycho-social influences on the prevention of CC and is illustrated in (Table 4.5) below.

Table 5: Descriptive Statistics on psycho-social influences on prevention of CC

	N	Minimum	Maximum	Mean	Std. Deviation
CCR	394	0	5	3.48	1.173
FRC	393	0	5	1.86	1.722
WHD	391	0	5	2.20	1.666

Table 5 above shows that the highest mean is 3.48 (Cervical cancer is real and dangerous [CCR]) and the lowest is 1.86 (feeling at risk of cervical cancer [FRC]). This means that the responses to the statement were divergent and not all the respondents agreed with the statements. The highest Std. deviation was 1.722 and the lowest was 1.173. It indicates that the responses on the psycho-social influence on prevention of CC were divergent. This finding reflects that the knowledge level of the respondents with regards to the psycho-social influence on prevention of CC was inadequate (low) as the majority of respondents did not agree with the statements.

4.2.2 Psycho-social influences on screening of CC

The study determined the mean and standard deviations of variables regarding psycho-social influences on screening of CC and is illustrated in Table 4.6 below.

Table 6: Descriptive Statistics on psycho-social influences on screening of CC

Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
WDC	384	0	5	.95	1.226
WSS	392	0	5	1.08	1.328
FBR	387	0	5	2.82	1.538
FEP	394	0	5	2.97	1.423
LSR	394	0	5	2.38	1.115

Table 6 shows that the highest mean is 2.97 (fear and shame of going through the examination procedure [FEP]) and the lowest is .95. (will consult a family member before deciding to go for cervical cancer screening (WDC]). This means that the responses to the statement were divergent and not all the respondents agreed with the statements. The highest Std. deviation was 1.538 and the lowest was 1.115. It indicates that the responses on the psycho-social influence on screening of CC were divergent. These findings reflect that the knowledge level of respondents with regards to the psycho-social influence on screening of CC was inadequate (low) as the majority of the respondents did not agree with the statements.

4.2.3 Cultural influences on screening of CC

The study determined descriptive statistics on the cultural beliefs on screening of CC and are presented in the Table 4.7 below.

Table 7: Descriptive statistics on the cultural beliefs on screening of CC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ABP	393	0	5	2.66	.953
SCD	394	0	5	2.81	.940
SMP	394	0	5	3.83	1.172
SYH	392	0	5	2.82	1.062
TPT	392	0	5	3.07	1.298

Table 7 above indicates that the highest means is 3.83 (Shame to be screened by male health care provider [SMP]) and the lowest is 2.66 (Afraid of being screened by known health care provider [ABP]). The highest standard deviation was 1.298 and the lowest .940. This means that the responses to the statements were divergent, and the majority of the respondents do not agree with the statements. This indicates that the majority of respondents have negative attitudes on the cultural beliefs regarding CC screening.

4.2.4 Factors that influence CC screening

The study determined descriptive statistics on the factors that influence CC screening and are presented in the Table 4.8 below.

Table 8: Descriptive statistics on factors that influence CC screening

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FSC	390	0	5	3.00	1.048
FHT	391	0	5	3.13	1.016
FBE	391	0	5	2.99	1.001
FRS	391	0	5	3.17	1.238
DSS	392	0	5	2.98	1.429
NSS	392	0	5	2.50	1.049

Table 8 above indicates that the highest mean is 3.17 (feeling not at risk because of not being sexual active [FRS] and the lowest is 2.50 (not aware of the availability of the screening services [NSS]. This means that the responses to the statements were convergent and some of the responses agreed with statements or were neutral. The highest standard deviation was 1.429 and the lowest was 1.001. The Std. deviation indicates that the responses were not far apart, thus revealing that the respondents possess average knowledge on the factors that influence CC screening among women.

4.2.5 Economic factors regarding influence on CC screening uptake

The study determined the mean and standard deviations on the variables regarding economic factors that influence CC screening uptake and are presented in the (Table 4.9) below.

Table 9: Descriptive statistics on the economic factors that influences CC screening uptake

Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
TCA	116	1	5	4.34	.874
DHF	146	3	5	4.04	.742
DHH	90	2	5	3.98	.703
DMT	42	3	5	4.40	.544
TTF	84	1	5	4.17	.709

Table 9 above indicates that the highest means is 4.40 (there is lack of transport from home to the facility [DMT]) and the lowest is 3.98 (distance is between 5 – 10KM from home to the health facility [DHH]). The highest standard deviation was .874 and the lowest was .544. This means that the responses to the statements were convergent, and the majority of the respondents agreed with the statements. This indicates that the majority of the respondents have challenges of accessing CC screening services in their areas.

ANNEXURE K: PEARSON CORRALATIONS

PEARSON CORRELATIONS

		General knowledge on prevention	Factors associated with cervical cancer	Level attitudes due to psychosocial influences	Overall attitudes regarding cervical cancer	Level of Attitude regarding cultural influences	Level of Knowledge on availability of cancer services	Level of knowledge on treatment of Cervical Cancer	Level of knowledge on prevention of Cervical cancer	Level of knowledge on Symptoms of Cervical Cancer	Level of knowledge on types of Cancer
General knowledge on prevention	Pearson Correlation	1									
	Sig. (2-tailed)										
	N	380									
Factors associated with cervical cancer	Pearson Correlation	.675**	1								
	Sig. (2-tailed)	.000									
	N	362	373								
Level attitudes due to psychosocial influences	Pearson Correlation	.235**	.211**	1							
	Sig. (2-tailed)	.000	.000								
	N	362	359	375							
Overall attitudes regarding cervical cancer	Pearson Correlation	.114*	.173**	.407**	1						
	Sig. (2-tailed)	.031	.001	.000							
	N	357	355	370	370						
Level of Attitude regarding	Pearson Correlation	.105*	.108*	.114*	-.021	1					
	Sig. (2-tailed)	.043	.038	.028	.688						

cultural influences	N	375	369	370	370	389					
Level of Knowledge on availability of cancer services	Pearson Correlation	.509**	.379**	.158**	.050	.084	1				
	Sig. (2-tailed)	.000	.000	.002	.337	.101					
	N	377	371	372	367	386	391				
Level of knowledge on treatment of Cervical Cancer	Pearson Correlation	.300**	.295**	.313**	.131*	.148**	.265**	1			
	Sig. (2-tailed)	.000	.000	.000	.012	.004	.000				
	N	377	369	371	366	385	387	390			
Level of knowledge on prevention of Cervical cancer	Pearson Correlation	.726**	.599**	.160**	.048	.126*	.516**	.332**	1		
	Sig. (2-tailed)	.000	.000	.002	.365	.014	.000	.000			
	N	376	363	367	362	379	381	381	384		
Level of knowledge on Symptoms of Cervical Cancer	Pearson Correlation	.425**	.398**	.238**	.119*	.088	.413**	.244**	.407**	1	
	Sig. (2-tailed)	.000	.000	.000	.026	.092	.000	.000	.000		
	N	360	353	354	349	367	369	368	362	372	
	N	375	368	368	363	382	384	383	377	366	

ANNEXURE L: CONFIRMATION LETTER

ACET Consultancy
Anenyasha Communication, Editing and Training
Box 50453 Bachbrecht, Windhoek, Namibia
Cell: +264814218613
Email: mlambons@yahoo.co.uk / nelsonmlambo@icloud.com

29 November 2022

To whom it may concern

LANGUAGE EDITING – EPAFRAS ANYOLO

This letter serves to confirm that a DOCTOR OF PHILOSOPHY IN NURSING SCIENCE thesis titled **THE DEVELOPMENT OF AN EDUCATIONAL PROGRAMME TO ENHANCE THE UTILISATION OF CERVICAL CANCER SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN THE OTJOZONDJUPA REGION, NAMIBIA** by EPAFRAS ANYOLO was submitted to me for language editing.

The thesis was professionally edited and track changes and suggestions were made in the document. The research content or the author's intentions were not altered during the editing process and the author has the authority to accept or reject my suggestions.

Yours faithfully

DR NELSON MLAMBO
PhD in English
M.A. in Intercultural Communication
M.A. in English
B. A. Special Honours in English – First class
B. A. English & Linguistics