

AN EDUCATIONAL PROGRAMME TO SUPPORT PRIMARY HEALTH CARE
PROVIDERS REGARDING THE MANAGEMENT OF EMERGENCY CONTRACEPTIVES
FOR ADOLESCENTS IN OHANGWENA REGION, NAMIBIA

A DISSERTATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR
DOCTOR OF PHILOSOPHY IN PUBLIC HEALTH

OF

THE UNIVERSITY OF NAMIBIA

BY

LOIDE AMBUGA NGHIFIKWA

9205160

OCTOBER 2023

Main Supervisor: Prof. Käthe Hofnie-//Hoëbeb (University of Namibia)

Co-Supervisor: Dr Kristofina Amakali (University of Namibia)

ABSTRACT

Family planning (FP) could be called one of the most crucial decisions in a woman, young adult, and lately in an adolescent's life. Emergency contraceptive refers to the strategies of birth control (FP) to prevent unwanted pregnancies after unprotected sexual intercourse (WHO, 2021). On a daily basis, healthcare facilities offer free services for emergency contraceptives (ECs) to women of childbearing age including adolescents and young people to prevent unwanted pregnancies. However, the impact of such services is minimal, and adolescent pregnancies remain a public health concern in Namibia. The Ohangwena region in Namibia is among the regions with the highest adolescent pregnancies. Therefore, the aim of this study was to assess the knowledge, attitudes and practices of Primary Health Care (PHC) providers regarding the management of ECs among adolescents in order to develop an educational programme for PHC providers.

The objectives of the study were: to assess the knowledge, attitudes and practices of PHC providers regarding the management of emergency contraceptives for adolescents; determine the factors related PHC providers' knowledge, attitudes and practices of ECs by PHC providers for adolescents; to develop a conceptual framework as the foundation for an educational programme; to develop an educational programme to support PHC providers regarding the management of ECs for adolescents; to implement the educational programme; and to evaluate the educational programme.

The study adopted a quantitative approach. In this study, a descriptive cross-sectional study design was used in this study. The study was conducted in four phases. The first step was to conduct a situational analysis that assessed the knowledge, attitudes and practices of PHC providers regarding the management of ECs among adolescents as well as determine the factors related to PHC providers' knowledge, attitudes and practices of ECs by PHC for adolescents. To collect data, a self-administered questionnaire was used, and a multi-stage stratified sampling method was used to select PHC providers from various health care facilities. A total of ninety-three PHC providers completed the self-

administered questionnaire with a response rate of 100%. The collected data were entered into the statistical package SPSS version 26. Descriptive and inferential data analysis methods were used to analyse the data.

In total, 79% of PHC providers had heard of emergency contraceptives (ECs). However, only 66% of the PHC providers know that combined pills are types of ECs methods, while only 14% correctly identified copper IUD as a method of ECs.

In identifying those that are eligible for ECs use, a majority of respondents (76%) named women who had unprotected sex and only 12% identified adolescents as appropriate candidates for using ECs. Rape situations (79%) were the most frequently cited reason for EC prescriptions, followed by condom breakage (61%) and (16%) in case of missed contraceptive pills. Almost 64% of the respondents knew about the effective time to use ECs. The majority (78.3%) of the respondents knew that ECs are used in preventing unwanted pregnancies. The analytical findings revealed that the standardised direct (unmediated) effect of Negative Attitudes on Positive Attitudes was -0.452 ($p < 0.01$), which implies that a nurse with a negative attitude is likely to have a high misconception attitude and a low positive attitude towards EC. The study found that only 15.2% of the participants were trained in both FP and ECs, and this lack of training in FP and ECs can have a negative impact on ECs practices. As evidenced by less than 50% of participants reportedly providing ECs to clients, the practice of ECs was found to be poor. There is a significant relationship between demographic variables such as age ($p=0.00$), professional qualification ($p=0.00$), and work experience ($p=0.02$) and PHC providers' knowledge, attitudes, and practices.

The study revealed a deficit in the knowledge, misconceptions, negative attitude and poor practice of ECs by the PHC providers, which may be barriers to accessing ECs by adolescents. These findings have negative consequences for adolescents' usage of ECs. As a result, educational interventions should be provided to PHC providers on ECs the knowledge, demystification of misconceptions and for-correction of negative attitudes towards EC services.

Based on Dickoff, James, and Wiedenbach's survey list, the second phase addressed the conceptual framework to guide the development of an educational programme to support PHC providers in the management of ECs for adolescents. The third phase focused on developing an educational programme to assist PHC providers, guided by the Nicholls Cyclic Curriculum Development Model. The fourth stage dealt with programme implementation and evaluation. Knowles' Andragogy model and Kolb's experiential learning theory guided this phase. The educational programme was evaluated during and after its implementation. The findings indicated that the education programme was useful and supportive.

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LIST OF ABBREVIATIONS AND ACRONYMS

WHO:	World Health Organisation
EC:	Emergency Contraception
ECs:	Emergency Contraceptives
ECPs:	Emergency Contraceptive Pills
IUCD:	Intra-uterine Contraceptive Device
USA:	United States of America
FDA:	Food and Drugs Administration
CIUD:	Copper Intra Uterine Device
UNFPA:	United Population Fund
NPC:	National Planning Commission
NDHS:	National Demographic Health Survey
MOHSS:	Ministry of Health and Social Services
PHC:	Primary Health Care
ANC:	Antenatal care
EMIS:	Education Management Information System
ECs:	Emergency contraceptives
MVA:	Missing Value Analysis
EFA:	Exploratory Factor Analysis
CFA:	Confirmatory Factor Analysis
UNICEF:	United Nations Children's Fund
SRH:	Sexual and Reproductive Health
SSA:	Sub-Sahara Africa
POPs:	Progestin-only Pills

COCs:	Combined Oral Contraceptive Pills
LNG:	Levonorgestrel
NAPPA:	Namibia Planned Parenthood Association
ACA:	Affordable Care Act
OTC:	Over-the-Counter
NGO:	Non-Governmental Organisation
ESA:	Eastern and Southern African
US:	United States
ECP:	Emergency Contraceptive Pills
ICCPR:	International Convention on Civil and Political rights
CEDAW:	Convention on the Elimination of all Forms of Discrimination against Women
ICPD:	International Conference on Population and Development
ICESCR:	International Covenant on Economic, Social and Cultural Rights
FP:	Family Planning
ICEC:	International Consortium for Emergency Contraceptive
IPPF:	International Parenthood Federation
PATH:	Program for Appropriate Technology in Health
SADC:	Southern Africa Democratic Counties
MGECW:	Ministry of Gender and Child Welfare
SRHR:	Sexual Reproductive Health Rights
SRH:	Sexual Reproductive Health
CRC:	Convention on the Rights of the Child
ICESCR:	International Covenant on Economic, Social and Cultural Rights
MOGEF:	Ministry of Gender Equality and Child Welfare

UPA: Ulipristal Acetate
STI: Sexually Transmitted Infection
ARV: Anti-Retroviral
UPA: Ulipristal Acetate
PPO: Planned Parenthood Organisation
HIV: Human Immunodeficiency Virus

ACKNOWLEDGEMENTS

First and foremost, I thank my Lord for protecting me and providing me with the strength and courage to persevere throughout the course. My heartfelt thanks go to Prof. Käthe Hofnie-//Hoebes and Dr Kristofina Amakali of the University of Namibia for their expertise, support, guidance, and encouragement throughout the course.

I'd also like to thank Prof. Hans Justus Amukugo, who has been a true colleague and professional mentor to me. Thank you, Prof. Hans Justus Amukugo, for your invaluable assistance, dedication, and wise counsel throughout my academic career. Because of your encouragement and support, I was able to gather the courage to embark on this journey. No matter the situation, you were always the calming and supportive voice of reason, and your response to issues was always: "no problem". May God richly bless you.

To my immediate supervisor, Dr L. Pinehas, I appreciate your open-door policy and willingness to listen. Thank you for your incredible candour in providing me with guidance and support. I appreciate your consistent and steadfast support, as well as your assistance when I needed it the most. You are an amazing mother to all of us at Oshakati Campus. God bless you.

Furthermore, my research would not have been possible without the encouragement of my colleagues from the School of Nursing and Public Health, Oshakati Campus, who provided me with words of encouragement when I was tired and unwilling to continue. Your encouragement provided me with the fuel I needed to finish this study. Thank you so much for your encouragement and support, colleagues.

I am grateful to the Ministry of Health and Social Services for allowing me to conduct my research at the Ohangwena Regional Health Care facilities, as well as the PHC providers for their willingness to participate in the study and provide me with useful information.

I would like to express my gratitude to my sisters (Niilonga, Teopolina, and Hifikepunye) and my brother Erasmus Ambuga for their long-standing support and encouragement in completing this study.

Finally, I want to express my gratitude to my wonderful and loving husband, Mr Julius Natangwe Nghifikwa, for his patience and understanding. I also acknowledge my two sons, James Tulipohamba and Junias Ndahangetate Nghifikwa, and my daughter, Aina Iyaloo Nghifikwa, who always asked me, "Mummy, you are always in the office?" My granddaughter, Elen Nyeeovange, and my three daughters, Saima, Bergita, and Selma, I appreciate you for taking over domestic duties and responsibilities on my behalf when I was busy with my studies.


DEDICATION

This study is dedicated to my late father, Lamek Ndinoshisho Ambuga (May His Soul Rest in Peace) and my lovely mother, Aina Nekango Ndeshuuva Tomas; my beloved husband, Julius Natangwe Nghifikwa, my two sons, James Tulipohamba and Junias Ndahangetate Nghifikwa, and my two queens, Aina Iyaloo Nghifikwa and Selma Kaangala Matheus, and my granddaughter Elen Nyeovange Ndeunyema. Allow this work to inspire you to do even better in the future.

DECLARATION

I, Loide Nghifikwa, hereby declare that the study titled: “An educational programme to support Primary Health Care Providers in the Oshana region of Namibia in the management of emergency contraceptives” is an accurate reflection of my own research work. This work has not been submitted to any other institution of higher learning for a degree. Without the prior permission of the author or the University of Namibia, no part of this dissertation may be reproduced, stored in any retrieval system, or transmitted in any form, mechanical, electronic, photocopying, recording, or otherwise.

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Date October 2023

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1. INTRODUCTION OF THE STUDY

Family planning which includes deciding when to bare children, the spacing and number of children could be one of the most crucial practices in a woman, young adult, and lately in an adolescent's life. However, when it comes to adolescents engaging in sexual activities, there are different remedies available for the prevention of unwanted pregnancy. According to Wado et al. (2019), at least 21 million unintended pregnancies occur each year among adolescent girls aged 15 to 19 years in the developing world, with approximately 12 million of them giving birth. According to WHO (2018) each year, an estimated three million unsafe abortions occur globally among girls aged 15 to 19 years, contributing significantly to long-term health issues and maternal deaths. Meanwhile Grnvik and Sandy (2018) urges that complications during pregnancy and childbirth are the leading cause of death for girls aged 15 to 19 worldwide. In comparison to women aged 20 to 24 years of age however, adolescent mothers are more likely to develop eclampsia, puerperal endometritis, and systemic infections, while their babies are more likely to have low birth weight, preterm delivery, and severe neonatal conditions (WHO, 2018). Emergency contraceptive (EC) refers to the strategies of birth control that may be accustomed to prevent unwanted pregnancies after unprotected sexual

intercourse (WHO, 2021). To date, globally, ECs has been an effective unwanted-pregnancy prevention strategy used not only by adults but also among adolescents.

Currently, the two most common types of ECs are: 1. The “hormonal contraceptive” pills which are called ‘Emergency contraceptive’ pills (ECPs), and 2. The “non-hormonal contraceptive” called the ‘Intrauterine Contraceptive device’ (IUCD), (Profile, 2019). The hormonal EC pill however, contains high levels of hormones found in basic oral hormonal contraceptives (Haeger et al., 2018). Due to the fact that the efficacy of emergency contraception decreases significantly with time, the contraception should be made use of as soon as possible after intercourse (WHO, 2016). Scholars such as Mohammed et al., (2019) informs that ECs are highly effective and can prevent up to ninety five percent (95%) of unwanted pregnancies if used within five days. However, they are more effective the earlier they are used after the act of unprotected sexual intercourse. ECs is thus used within the first seventy-two (72) to one hundred and twenty (120) hours following unprotected sex (Rokicki & Merten, 2018).

EC pills work by delaying or inhibiting ovulation, whereas the Copper Intra Uterine Device (IUCD) works by causing chemical changes in the sperm and ovum, thereby preventing fertilisation. The utilisation of ECs however, should not interrupt nor harm the established pregnancy (Panda et al., 2021). Thus, ECs are important as young girls and adolescents are provided with an opportunity to prevent pregnancy. Ajayi et al. (2021) avers that ECs also prevent the psychological consequences of unwanted pregnancies.

Therefore, it is vital that ECs are widely available, and included in all family planning programmes.

A variety of reasons have been advanced to justify the need for ECs. Sani et al. (2018) avers that, for starters, many women have difficulties using their traditional methods of contraception. Furthermore, Saini et al., (2018) states that women who use the rhythm or calendar method with any miscalculation of the safe days for the abstinence period are a good example. Meanwhile the withdrawal method may also occur too late, Saini et al., (2018) argues that condom users may experience breakage or slippage, and the diaphragm or cervical cap may shift out of position. Moreover, forfeiting or inconsistently taking the 'pill' may lead to the ineffectiveness of the contraceptive method. On the other hand, there may be unique cases such as women who may have engaged in an unplanned and unprotected sexual activity, as in the case of rape, or by coercion. To be clear, ECs are indicated for women who do not use regular methods of contraception, either because they are afraid of the side effects or because they are unaware of their availability. But, according to Saini et al., (2018) adolescents are particularly suited for ECs due to their sexual behaviour and as they frequently do not plan their first intercourse or have infrequent intercourse while using no contraceptive methods.

Nevertheless, the advantages of access to ECs are one of the critical elements in reducing unwanted pregnancies among the adolescents (Soper & Di Meglio, 2020; Jindal et al., 2020). Despite ECs being included in national reproductive health programmes in many countries, they still remain an under-utilised option of pregnancy prevention for adolescent clients, because of judgement on the acceptability for the use of ECs by

adolescents (Monteiro et al., 2022). Yet, Potasse and Yaya, 2021; Todd and Black (2020) indicate that low levels of knowledge, social or cultural taboos, financial constraints, legal restrictions and challenges related to health care systems, such as the management of ECs by PHC providers, and medical clinic hours are some of the documented barriers to accessing ECs.

Health care providers serve as both health educators and service providers; however, a number of barriers such as health care providers' knowledge of attitudes towards and practices regarding ECs, prevent adolescents and young women from having access to ECs (Mohammed et al., 2019). As a result, Mohammed et al., (2019) claim that many adolescents and young women are hesitant to seek EC services due to health care providers' negative perceptions and attitudes toward ECs.

Subsequently, Shakya et al. (2020) argue that for ECs to be effective, PHC providers that administer them need to have the essential knowledge, display the right attitude, and practice with extreme professionalism by serving the teenage girls who seek EC services with respect and in confidence. On the other side, culture and religious beliefs, in addition to knowledge seem to influence health care providers' attitudes toward the prescription of ECs for adolescents. For example, health care providers in Ghana reported a favourable attitude towards ECs, but many of them believe that ECs encourage promiscuity and that it is morally wrong for adolescents to use ECs (Mohammed et al., 2019). In Namibia, Ohangwena region presents thus far the highest number of teenage pregnancies. Thus, this study aimed at assessing PHC providers' knowledge, attitudes, and practices regarding the management of ECs for adolescents in order to develop an educational programme to

support primary health care providers in the management of ECs for adolescents in the Ohangwena region of Namibia.

1.2. BACKGROUND TO THE STUDY

Every year, more than 120 million couples experience unmet needs for contraception, and 80 million women have unintended pregnancies, 45 million of which result in abortion. This is primarily due to unsafe sex, which is the second leading cause of disability and death in the world's poorest communities (Demissie et al., 2020).

Globally, ECs were prompted by adult women and adolescents who continued to have unwanted pregnancies at high rates in countries such as the United States of America. Approximately 45% of all pregnancies are either unintended or mistimed (Rafie et al., 2017). Contraceptive mishaps include condom breakage, missed pills, incorrect patch or vaginal ring application timing, contraceptive non-use, forced intercourse, and other circumstances (Rafie et al., 2017).

The Food and Drug Administration (FDA) first approved emergency contraception in the United States of America (USA) in 1999, and it has since been marketed in many countries (Sakurai, 2019). In USA, there are numerous ECs options and the latter were approved as an over-the-counter drug in 2006. Thus, the American College of Obstetrics and Gynaecology has recommended that adolescents use the Intra Uterine Device as an emergency contraceptive (Sharma et al., 2021). Although the Copper Intra Uterine Device

(CIUD) can be used as an emergency contraceptive, its use among adolescents in the United States is still limited. Adolescents have limited knowledge of Intra Uterine Devices (IUDs), and access to IUDs is limited despite their effectiveness; overall, IUDs are not widely used as an emergency contraceptive in the United States (Sharma et al., 2021).

Unwanted pregnancies have been an issue to many countries worldwide. India being the world's second most populous country, implemented ECs in response to the rising number of unplanned pregnancies. Approximately 78% of pregnancies are unplanned, with nearly 25% being unwanted (Davis et al., 2020). shockingly, nearly 11 million abortions are performed yearly with 6.7 million being induced and 4 million occurring spontaneously. Abortions have been legal in India since 1971 for specific reasons still approximately 10 to 11 illegal abortions occur for every legal abortion (Davis et al., 2020). Unwanted and unintended pregnancies have an impact on the reproductive health of young women (Davis et al., 2020). Emergency contraceptive pills (ECPs) were introduced in India under the Family Welfare Programme in 2003, and were later declared an over-the-counter drug in 2005, with no age restrictions (Sharma, 2017). Nonetheless, India, in comparison to developed countries, their awareness of the emergency contraception is low (Davis et al., 2020). Furthermore, despite the availability of ECs, it is underutilised in India due to a lack of awareness (Davis et al., 2020).

In other parts of the world, according to UNFPA, which advocates for the use of emergency contraception to prevent unwanted pregnancies among young women and girls, in Peru, an estimated four girls under the age of 15 give birth (Borràs & Ivarez Ivarez, 2018). emergency contraception was first introduced in Nepal in 2004 as part of a social

marketing program. Nonetheless, various barriers exist to a young woman's access to emergency contraception. The knowledge and perceptions of healthcare providers, the emergency contraception distribution system, legal and social barriers, and cost are among these barriers. In Nepal, one in every five births (21%) is unwanted, one in every seven (14%) is mistimed, and 58% of women die as a result of pregnancy complications. The underlying factors contributing to premarital sex and pregnancies are early menarche and late marriage, and these factors contribute to the need for emergency contraception as a way to prevent unwanted pregnancies (Shakya et al., 2020).

Similarly, adolescent pregnancy, sexual violence, and forced motherhood continue to be major health and human rights issues in Peru, turning girls from low-income families into drop school dropouts due to a lack of access to emergency contraception. This reveals the need for ECs. Ten (10) to twenty (20) percent of adolescents in Nepal engage in premarital sex, with only 9% using contraception (Shakya et al., 2020).

Unwanted, unplanned adolescent pregnancy also pose a threat to the African continent as well. Unintended pregnancies are common in Ghana; approximately 16% of women aged 20 to 24 become pregnant, with the majority of these pregnancies being unwanted (Rokicki & Merten, 2018). Furthermore, approximately 14% of women aged 15 to 19 have begun childbearing (Rokicki & Merten, 2018). Thus, highlighting the necessity of ECs. However, emergency contraception in Ghana is available without a medical prescription at pharmacies and family planning clinics (Mohammed et al., 2019). Still, despite its availability, ECs use among adolescents is low, and many healthcare providers believe that ECs promotes promiscuous sexual behaviour and that using ECs is morally

wrong (Mohammed et al., 2019). As a result, detailed information and practical knowledge of ECs usage should be provided to healthcare providers in order to improve EC knowledge among adolescents.

In Nigeria, according to the National Population Commission (NPC) [Nigeria] and ICF, (2019), 19% of teenage girls aged 15 to 19 have started having children: 14% have given birth, and 4% are pregnant with their first child. Consequently, teenage pregnancy is a major public health concern due to the increased morbidity and mortality for both the mother and the child (National Population Commission (NPC) [Nigeria] & ICF, 2019). However, Sieverding et al. (2018) discovered that the provision of ECs to adolescents is low due to providers' bias due to personal beliefs, which may affect the quality of care in the emergency contraceptive provision among adolescents. The aforesaid beliefs may be related to the appropriateness of specific methods (IUCD) for a given population, in this case, adolescents (Sieverding et al., 2018).

In Namibia, 19% of women aged 15 to 19 have started having children. This represents a 4% increase in teen pregnancies in Namibia since the 2006-07 NDHS (15% increase) (The Namibia Ministry of Health and Social Services – MOHSS - and ICF International et al., 2014). The proportion of teenagers who have had a live birth rises rapidly with age, from 3% at age 15 to 27% at age 19. Rural teenagers and those with a primary education are more likely than their urban and better-educated peers to begin childbearing earlier. According to the same survey, Ohangwena had the highest number of adolescent pregnancies in the Northwest region (22.7%), followed by Oshikoto (13.2%), Omusati

(11.1%), and Oshana (9.0%). (NDHS, 2014). The Ohangwena Ministry of Basic Education and Culture Management Information System (EMIS) report for 2017 to December 2020 indicates that a total of 1912 Adolescent girls became pregnant, and 1440 (75%) dropped out of school due to pregnancy, with only 472 (25%) returning to school (Ministry of Education, 2020).

Abortion is illegal in Namibia, and determining the abortion prevalence rate, mortality rate related to abortion/unsafe abortion among adolescents is challenging. Sometimes clients do backstreet abortions, which is illegal, and clients can be afraid to report themselves to healthcare facilities (Ministry of Health and Social Services, 2018). Moreover, the data from the Ministry of Health and Social Services on abortion states that although abortion is illegal, statistics from the hospital reveals that abortion does take place, however there are no specific statistics on illegal abortion among adolescents as a result of unwanted pregnancy nationally (Ministry of Health and Social Services, 2018). In the latest Namibia Demographic Health Survey of 2014, eight (8) per cent of maternal deaths occurred among young girls between 15 and 19 years, which might be due to complications caused by abortions. However, the 2022 national statistics provided by the Namibia's Ministry of Safety and Security indicated that 63 illegal abortions were reported between 2019 and 2021 for all reproductive age groups (Nakale, 2022).

Although ECs are widely available in many countries, its use varies by country, and it is generally underutilized globally. Research on the knowledge and use of emergency contraception amongst adolescents reveal that there is a need for awareness creation.

A cross-sectional study, for example, was conducted among college students in Tamil Nadu, India, and 183 (24%) of 758 students had heard of ECs (Davis et al., 2020). In another cross-sectional institutional-based study to assess the prevalence of ECs use and associated factors among female college students in northwest Ethiopia, 33% had used an EC after unprotected sex, and only 45.4% had good knowledge of ECs (Demissie et al., 2020).

Only 20 (28.6%) of female students at Dangila Hidase High in Ethiopia had used emergency contraception, according to an institution-based cross-sectional study (Mamuye et al., 2021). In a cross-sectional study involving 330 male undergraduates from three tertiary institutions in Ibadan, Nigeria, approximately 55.2% of the participants were sexually active, with 33.9% currently using EC (Ogunbode & Agboola, 2020). Only 4.4% of female secondary school students in Namibia's Oshana region had heard of and used emergency contraception, according to a survey on their knowledge, attitudes, and practices regarding emergency contraception (Magesa, 2014).

There is also a lack of knowledge and misinformation about ECs among healthcare professionals, which impedes the dissemination of EC-related information to patients. In another study, 63.1% of medical students in Turkey did not know the definition of ECs, and 85.6% did not know the most effective method of EC (Asut et al., 2018). Moreover, in a survey done among young doctors in India on their knowledge and awareness of ECs, it was found that about 100% believe that ECs promote irresponsible behaviour in young people, and 53% believed that ECs would increase the incidences of STIs due to the non-use of condoms (Panda et al., 2021).

In a study of pre-service providers on ECs in Ghana, 55.5% did not know when to use IUD as emergency contraceptive, 54.4% said that EC usage promoted promiscuity, and only 25.65% had ever used EC (Mohammed et al., 2019).

In addition, a survey was conducted among obstetrics and gynaecology doctors and nurses in public hospitals and clinics in Pietermaritzburg, KwaZulu-Natal Province, South Africa. Only 39.6% of those polled were aware that ECPs prevent ovulation. Seventy-six (76) percent believed that using ECs could lead to high-risk sexual behaviour, increased risk of HIV transmission, and non-use of other forms of contraception. Only 7.8% saw patients seeking EC frequently, 5.6% issued it frequently, and 23.5% educated patients about it frequently (Sibanda & Titus, 2017). There is no research done in Namibia on healthcare providers' knowledge, attitude, and practice regarding ECs among adolescents.

The Ministry of Health and Social Services is the primary provider of contraception in Namibia. The combined oral contraceptive (COC) pill, the copper intra-uterine contraceptive device (Cu-IUCD), and progesterone-only pills are all forms of EC (POPs). However, ECs appear to be underutilised. Adolescents' early and unintended pregnancies negatively impact their educational and professional development (Maemeko et al., 2018). Thus, reduced unintended pregnancies may lead to fewer unsafe abortions, and lowering maternal mortality rates (Ouedraogo et al., 2021). Nevertheless, healthcare professionals have a responsibility to counsel and offer their patients knowledge on all the forms of contraception, including ECs. Therefore, the current study sought to assess PHC providers' knowledge, attitudes, and practices regarding the management of EC among adolescents in the Ohangwena region of Namibia.

1.3. DESCRIPTION OF THE STUDY AREA

The study was conducted in Namibia; Ohangwena Region due to the high number of adolescent pregnancies in Namibia's northwest regions, Ohangwena Region being the highest. Ohangwena is located in northern Namibia and shares borders with Angola, Oshana region, Omusati region, and Kavango West region. Ohangwena has a land area of 10 582 square kilometres and is Namibia's third most populous region, with an estimated population of 263 785 people, 90% of whom live in rural areas. According to the Ohangwena Health Directorate Annual report (2018), 47 481 adolescents may need ECs. The Ohangwena Regional Health Directorate consists of three district hospitals, two health centres, thirty-four clinics, and one hundred and forty-four fixed outreach points. All the health facilities in the region offer free family planning (FP) services, including ECs. This means that EC services are available to adolescents in the region to prevent unwanted pregnancies.

The present research was carried out at all public PHC care facilities in the Ohangwena region. PHC facilities are the primary location where EC services are provided. EC is one of the PHC services provided to adolescents and young women by PHC providers to prevent unwanted pregnancies on a daily basis at each healthcare facility in the Ohangwena Region. The Ohangwena region is depicted in Figure 1.1 of the Namibia Map.

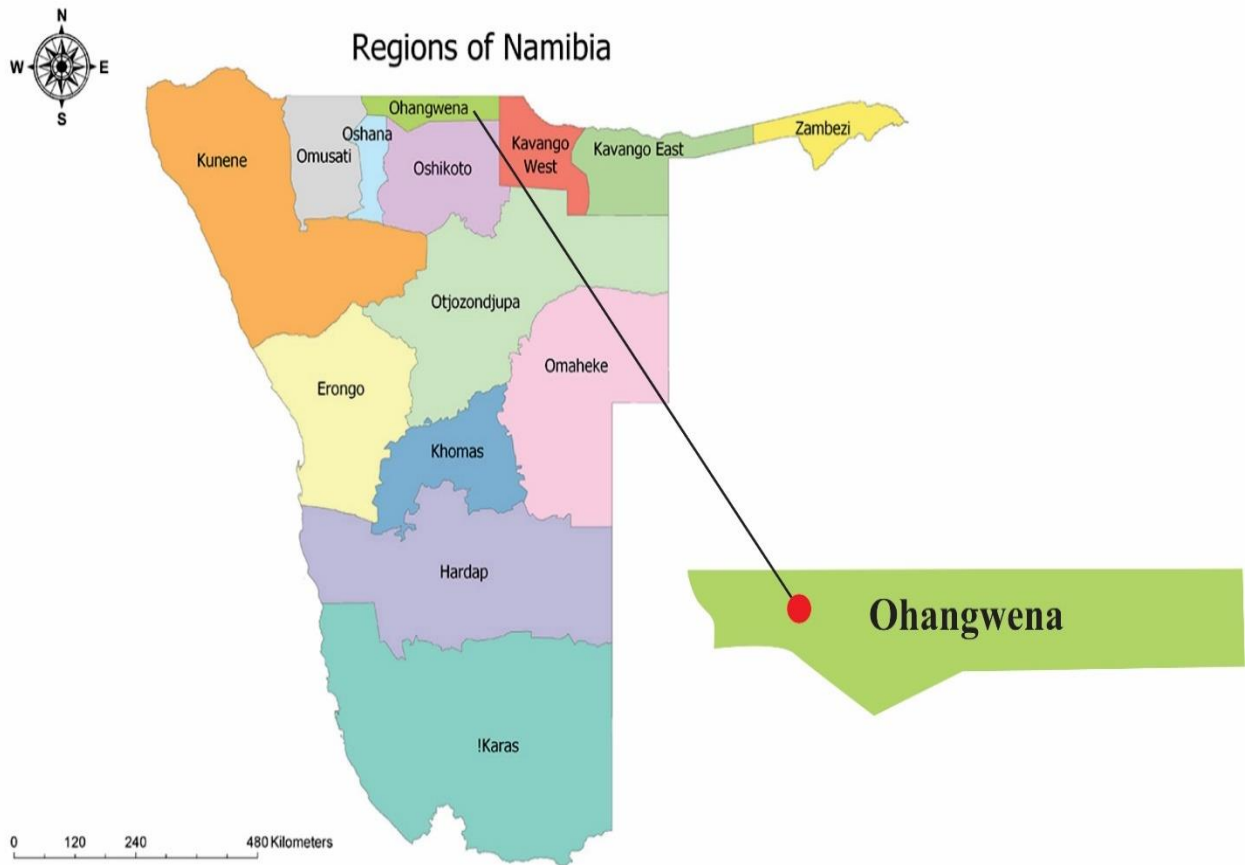


Figure 1. 1 The Ohangwena Region is depicted on a map of Namibia

This study was carried out in all of the 28 public PHC facilities in the Ohangwena region that were sampled and they are: Odibo Health centre, Endola Health Care Centre, Ongha health care centre, Okongo PHC, Omboloka Clinic, Olukula Clinic, Ekoka Clinic, Eenhana Clinic, Ongula Yanetanga Clinic, Epinga Clinic, Onangolo Clinic, Oshikunde Clinic, Onambutu Clinic, Epembe Clinic, Engela PHC Clinic, Omungwelume Clinic, Hamukoto Wakapa Clinic, Ohangwena Clinic, Okatope Clinic, Edundja Clinic,

Onekwaya Clinic, Ohalushu Clinic, Onamukalo Clinic, Ohaukelo Clinic, Okambebe Clinic, Ongenga Clinic, Eudafano Clinic and Ondobe Clinic as indicated in figure 1.2

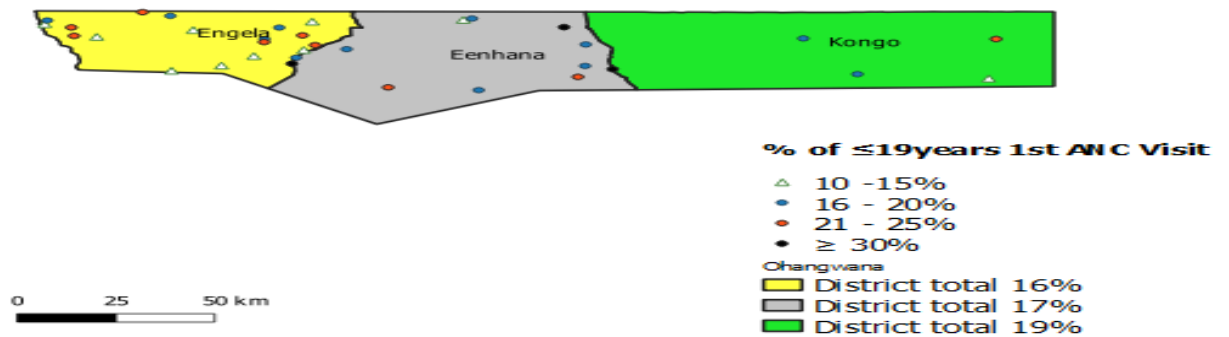


Figure 1. 2 Spot map of Ohangwena Region depicting the proportion of 19 years and under, antenatal care visit (ANC) first visits by health districts and health facilities in 2021.

The report of the Ministry of Health and Social Services about the first Antenatal Care visits in the Ohangwena region in 2021 shows that out of 13,465. The age group of 19 years and below accounted for 18% of all first ANC visits. The first ANC visit for adolescents ranged between 16% and 19% per district.

1.4. STATEMENT OF THE PROBLEM

Adolescent's pregnancies is often unplanned and therefore unwanted (Ajayi et al., 2021). Pregnant adolescents' experiences are multi-dimensional, ranging from physical, psycho-social and economic (Kotoh et al., 2022). However, when sexually active, if adolescents have access to ECs, they would prevent unwanted pregnancies and all socio-economic consequences (Pandey et al., 2019). The study was necessitated by the report of high rate of adolescent's pregnancies in Ohangwena region.

Ohangwena region recorded a high number of adolescent pregnancies in the northwest region since 2014 with 22.7%, followed by Oshikoto (13.2%), Omusati (11.1%) and Oshana (9.0%) (The Namibia Ministry of Health and Social Services - [MoHSS] - and ICF International et al., 2014).

In 2017, the Ministry of Basic Education and Culture, Ohangwena region, has reported alarming cases of adolescents pregnancies as follows: about 435 adolescents fell pregnant of which 433 (99%) dropped out of school due to pregnancies; in 2018, about 475 adolescents fell pregnant, of which 393 (82%) dropped out of school due to pregnancies; in 2019 about 262 adolescents fell pregnant of which 230 (88%) dropped out of school due to the pregnancies. Similarly, about 287 adolescents fell pregnant in 2020 of which 271 (94%) dropped out of school due to pregnancies, while in 2021, almost 453 (71%) of adolescents dropped out of school due to pregnancies (Ministry of Education, 2020). The magnitude of unwanted pregnancies among adolescent school girls is evidenced by the high number of girls dropping out of schools in Ohangwena region due to pregnancies which could have been prevented if adolescents could have used emergency contraceptive.

In Namibia, abortion is considered illegal, therefore, no data is available about abortions rate among adolescents due to unplanned pregnancies at Ohangwena Regional Health Directorate. Neither are the data available on pregnancies related complication due to illegal abortions, nor mortality due to illegal abortion emanating from unwanted pregnancies. Therefore, statistics of illegal abortion rates among adolescents in the Ohangwena region due to unplanned pregnancies is not available at the Ohangwena

Regional Health Directorate (MoHSS, 2018). Thus, the majority of those who carry out illegal abortions might be doing it in secrecy. However, the latest national statistics by the Ministry of Safety and Security indicated that 63 illegal abortions of all reproductive age groups were reported between the year 2019 and 2021 respectively (Nakale, 2022).

In view of the above reports, Ohangwena region was purposively selected as a study context. As a community health nurse, the researcher observed, with concern, that PHC providers do not provide adequate EC services to adolescents. Inadequate EC services to adolescents could be a contributing factor to the low uptake among the adolescents. Lack of EC service to adolescents could be attributed to a lack of knowledge, negative attitude and poor practice among PHC providers regarding the management of ECs. For the health care providers to play a critical role as expected of them, they require sufficient knowledge and a positive attitude towards the use of ECs among adolescents in order to prevent unwanted pregnancies. However, little is known about the knowledge, attitude and practices of PHC providers regarding the management of ECs for adolescents in the Ohangwena region.

The above background prompted the current researcher to conduct the present study in order to assess the knowledge, attitude and practices of PHC providers in Ohangwena region regarding the management of ECs for adolescents and to develop an educational programme that supports the PHC providers regarding the management of ECs for adolescents.

1.5. PURPOSE OF THE STUDY

The purpose of this study was to assess the knowledge, attitudes and practices of Primary Health Care providers regarding the management of ECs among adolescents in order to develop an educational programme to support the PHC providers regarding the management of ECs among adolescents.

1.6. OBJECTIVES OF THE STUDY

The objectives of this study were to:

- Assess the knowledge, attitudes and practices of PHC providers regarding the management of ECs for adolescents [Phase1];
- Determine the factors associated with the knowledge, attitude and practice of ECs [Phase1];
- Develop a conceptual framework that forms the basis of an educational programme [Phase 2];
- Develop an educational programme to support PHC providers regarding the management of ECs for adolescents [Phase3]; and
- Implement and evaluate the educational programme to support PHC providers regarding the management of EC for adolescents [Phase 4].

1.7.SIGNIFICANCE OF THE STUDY

The findings to this study can provide comprehensive insight regarding the challenges faced by PHC providers, their knowledge, attitude, and practice in the management of ECs for adolescents, as well as the quality of EC services provided to adolescents in the

Ohangwena region. The educational programme was developed to assist PHC providers with emergency contraceptive management, and those who participated in the educational training programme should be able to improve emergency contraceptive service for adolescents, potentially contributing to a reduction in high rate of unintended pregnancies among adolescents. This particular study helps to provide answers to questions pertaining to adolescent's pregnancies and maybe prick health leaders to react towards the amelioration of some of their health strategies concerning reproductive health especially adolescent health in rural areas of Ohangwena region. Moreover, it would also go a long way to convince national and international partners to continue to largely invest in the reproductive health section. This can stand as a pillar to help adolescents to adopt responsible behaviours regarding adolescent pregnancy especially at individual, community and health systems levels. Furthermore, policymakers at the Ministry of Health and Social Services may find the findings of this study useful in informing ongoing EC policy formulation and review, as well as in reference to in-service training and staff development for EC services. Finally, the study is expected to add to the existing body of knowledge of the Ministry of education, and the public health profession while also informing future EC research.

1.8. PARADIGMATIC PERSPECTIVE/ASSUMPTIONS

A paradigm is a collection of logically connected concepts and propositions that provide theoretical perspectives on a topic and frequently guide the research approach (Dawadi et al., 2021). The questionnaire as well as the collection, analysis, and interpretation of quantitative data were used in this study, which was conducted within a positivist

paradigm. A questionnaire was used in this study to assess PHC providers' knowledge, attitudes, and practices regarding the management of EC services for adolescents as a method of preventing unwanted pregnancies. Positivism was adopted in this study because the researcher relied on scientific evidence with regards to management of ECs by PHC providers as a method to prevent unwanted pregnancies.

1.8.1. Philosophical assumptions

The philosophical assumption uses abstract ideas and beliefs that inform the researcher (Creswell and Creswell, 2018a). The philosophical assumptions are important because, when made explicit, they reveal the assumptions that researchers have about their research, leading to choices that are applied to the research's purpose, design, methodology, and methods, as well as data analyses and interpretation (Creswell and Creswell, 2018a). The following philosophical assumptions were used in this study: ontology, epistemology, axiology, methodology, and rhetorical assumptions. The philosophical assumptions influenced the logic used throughout this study, as detailed in the following sessions.

1.8.1.1. Ontology

Ontological assumptions according to Creswell and Creswell, (2018a) concern what constitutes reality and its characteristics. The information obtained from participants shows that the reality is multifaceted (Creswell & Creswell, 2018a). It is a philosophical belief system concerning the nature of social reality - what can be known and how it can be known (Creswell and Poth, 2018). In this study, the reality was discovered based on

the assessment of knowledge, attitudes and practices of PHC providers regarding the management of ECs service for adolescents. This was achieved through a self-administered questionnaire with the study respondents, namely, the PHC providers in the Ohangwena region, to understand the reality of ECs service provision for adolescents as a method to prevent unwanted pregnancies.

1.8.1.2. Epistemology

Epistemology is concerned with the acquisition of knowledge and the relationship between the researcher and the researched. It makes an attempt to answer the question about the relationship between the researcher and the subject of study Neuman, (2020). In the epistemological assumptions, the researchers try to get as close to the respondents being studied as possible in the (Creswell & Poth, 2018). Subjective evidence is gathered from participants in order for the researcher to close the gap between himself/herself and the subject being studied (Neuman, 2020). In this study, knowledge was gathered by reviewing relevant research articles on the following topics: knowledge on the factors that are associated with teenage pregnancies, potential factors affecting the use of ECs by adolescents, healthcare providers' knowledge, attitude and practice of EC management, the regulatory landscape regarding the approval and usage of EC, history of FP in Namibia, ECs methods available in Namibia and mitigating approaches to facilitate access to EC as illustrated in Chapter two. Furthermore, the knowledge was gained through the use of a questionnaire that assessed the knowledge, attitudes and practices of PHC providers regarding the management of ECs as a method to prevent unwanted pregnancies among adolescents.

1.8.1.3. Axiology

Axiology is concerned with the role of values in research and the various perspectives employed (Creswell & Poth, 2018). The axiology assumption attempts to address the researcher's ethical and moral behaviours, as well as how these values influence the research question and design.

After obtaining ethical approval from the University of Namibia and the Ministry of Health and Social Services, the researcher adhered to ethical guidelines to assess the knowledge, attitudes and practices of PHC providers regarding the management of ECs as a method to prevent unwanted pregnancies among adolescents. Basic ethical principles of respect for a person (informed consent, right to withdraw, privacy, anonymity and confidentiality), non-maleficence, beneficence and justice were observed during the course of the study.

Prior to administering the questionnaire, informed consent was obtained. The participants were informed about the study's purpose, data collection method, approval from the University of Namibia and the Ministry of Health and Social Services, and approval from the Ohangwena Regional Health Management.

Each participant signed a consent form in which they were informed about their voluntary participation and the right to withdraw from the study at any time. Participants were informed that there would be no monetary compensation for their participation in the study, and that their participation was entirely voluntary. Similarly, the researcher

informed the participants that no harm or risk was likely as a result of their participation in the study, and that they would not be subjected to physical or psychological harm as a result of their participation.

Since emergency contraception is a sensitive topic and the information is confidential, the right to privacy, confidentiality, and anonymity was preserved. The researcher explained that the questionnaire information would be kept private and that only the researcher and her supervisors would have access to the data collected. In the same vein, participants were informed that information would not be linked to individual names or their personal identities.

Values are important in interpreting the results for positivist assumptions. The researcher avoided influencing the study results by remaining neutral on the knowledge of ECs as a method of preventing unwanted pregnancies among adolescents. Maintaining a neutral position allowed the researcher to avoid bias, which could have influenced the study's findings. Furthermore, the researcher upheld ethical values throughout the research process by being objective in data collection, data analysis, and results interpretation.

1.8.1.4. Methodology

The methodological assumption refers to the process of conducting research, including selecting the appropriate approach, instrument, data collection methods, and data analysis (Brink et al., 2018). Every study requires a methodological assumption because the quality

of research findings is determined by the methodological procedure used by the researcher.

In this study, a positivism paradigm was employed in which a quantitative data collection instrument (a questionnaire) was used to assess the knowledge, attitudes and practices of PHC providers regarding the management of ECs for adolescents as a method to prevent unwanted pregnancies. Positivism holds the view that scientific methods, tools and procedures used in the research study offer the best epistemological framework for the investigation of the phenomenon, in this case, ECs as a method to prevent unwanted pregnancies (Brink et al., 2018).

The descriptive cross-sectional study design was used to assess and describe PHC providers' knowledge, attitudes, and practices regarding the management of ECs, as well as to determine the factors associated with the KAP of ECs as a method to prevent unwanted pregnancies among adolescents.

1.8.1.5. Rhetoric

Rhetoric is concerned with the language used and documented by the researcher during the research process (Creswell & Plano Clark, 2018). The rhetorical assumption is significant because the rhetorical structure of a research paper allows the researcher to persuade the reader whether the researcher's dissertation on ECs as a method to prevent unwanted pregnancies is worth reading. Formal language was used in this study during the design of the questionnaire, data entry, data analysis, and presentation of the study

findings. Formal language was used in this study during the questionnaire design, data entry, data analysis, and presentation of the study findings

The questionnaire used to assess PHC providers' knowledge, attitude, and practices regarding the management of ECs as a method of preventing unwanted pregnancies among adolescents was written in formal language. Similarly, formal language was used during data entry, data analysis and the presentation of the study findings on the management of ECs by PHC providers and ECs as a method to prevent unwanted pregnancies.

In terms of quantitative data analysis and results interpretation, the statistician who analysed the study's data followed the procedure used by the researcher. The research report was also edited to ensure that the findings, interpretations, recommendations, and conclusions were consistent with the data and methods used during the research process.

1.9 THEORETICAL FOUNDATIONS OF THE STUDY

A theoretical foundation is essential in research because it guides the researcher through the research process. The theoretical foundation includes theories and models that help the researcher comprehend the problem under investigation. Five theories were used during various stages of this study. Theories such as Wiedenbach's (1968) Practice theory (1968), Knowles' model on andragogy, Nicholls's Cyclic Curriculum Development

Model (1978), Kolb's Experiential Learning Theory, as well as Meyer and Van Niekerk (2008), are described as follows:

1.9.1 Dickoff, James and Wiedenbach (1968) Practice Orientated theory

The Practice-Oriented Theory prescribes the activities needed to achieve the goals and to anticipate the outcomes of intervention (Dickoff et al., 1968). This theory was used to conceptualise the study's findings. In this study, schematic concepts for expressing ideas, explaining a theory, and drawing conclusions were identified. Dickoff et al. (1968)'s survey list was considered. It comprises of six questions that must be considered.

The six questions are: who performs an activity; who receives an activity; in what context is an activity performed; what is the procedure of the activity; what are the motivating factors? What is the endpoint, also known as the activity's terminus?

The agent in this study was the researcher who carried out the activity of developing an educational program for PHC providers on the management of ECs, and the recipients of the activity were primary healthcare providers. The context of the activity bares that it was carried out in health care facilities in the Ohangwena region, the procedure activity was the development and implementation of the educational programme to support PHC providers on the management of EC among the adolescents. The challenges faced by PHC providers in the management of EC, as described in the findings, motivated the development of the educational programme. The activity's goal was to achieve the agent's goals after carrying out an activity, which is an educational program to help PHC

providers provide quality EC to adolescents. This study's conceptual framework is described in detail in Chapter five.

1.9.2 Kolb's theory of experiential learning

Kolb's theory of experimental learning is a theory that focuses on learning, which is the process whereby knowledge is created through the transformation of experience (Kolb & Kolb, 2017). This theory guided the researcher in implementing the educational programme that assisted PHC providers in managing ECs as a method for the prevention of unwanted pregnancies in adolescents. Kolb's experiential learning cycle consists of four stages that and were adopted during the implementation of the education programme that assisted PHC providers in managing ECs as a method to prevent unwanted pregnancies in adolescents: (i) concrete experience, in which one can interpret an experience in managing ECs on adolescents, (ii) observing objectively or by doing, reflective observation, whereby a person reflects on their previous experiences on how they used to handle clients(adolescents) in need of ECs, (iii) abstract conceptualisation, which implies learning from experience by having a deeper understanding of information about ECs when used on adolescents, and (iv) active experimentation, in which a person actively experiments in managing ECs method on adolescents. The experiential learning cycle is discussed in Chapter 7 of this study. Kolb's model operates on two levels: 1. a four-stage cycle and 2. a four-type learning style definition.

1.9.3 Knowles' adult learning theory

Adult learning theory developed by Knowles provides insights into how adults learn, which can help instructors to be more effective in their practice as well as more responsive to the needs of the learners they serve. Knowles's Adult learning (Knowles, 1984) model also guided the researcher in the implementation of an educational programme for PHC providers to learn the KAP for managing ECs for adolescents as a method of preventing unwanted pregnancies. Knowles identified five assumptions that distinguish adult learning from that of children (Knowles, 1984). These assumptions include: (i) recognising learning needs because adults want to know why they need to learn something before they begin learning; (ii) adults are responsible for their own decisions; (iii) they are self-directed; (iv) they have experience and knowledge to learn; and (v) adult learners are ready to learn.

Adult learners, according to Knowles, need to understand why they are learning new things, which should help them to cope effectively in life situations. As a result, they are motivated to learn what they believe will help them perform the task in real-world situations. In the context of this study adult learners are PHC providers who already have some knowledge and experience in the provision of contraception services and are willing to learn and gain more knowledge on the provision of EC services as a preventative method for unwanted pregnancies.

The acquisition of knowledge of EC services would enable PHC providers to provide EC information to the community and adolescents. The revelation could assist the latter in making informed decisions in terms of preventing unwanted pregnancies.

These assumptions were applied in developing and implementing the educational programme that was aimed at supporting the PHC providers regarding the management of ECs for adolescents. In the context of training, the facilitator sought to convince PHC providers to participate in the training by emphasising the benefits of acquiring current knowledge and new skills regarding ECs provision so that they could incorporate the current knowledge and new skills into their everyday ECs practices.

Further on Knowles adult theory (1984) elaborates that once PHC providers recognised the importance of acquiring current knowledge and new skills in ECs, they would be eager to learn and actively participated in discussions about ECs management for adolescents during the training. Adults, unlike children, prefer to take responsibility for their own learning through active participation rather than being directed or lectured. Hence, PHC providers are mature and use their experience as a resource, they should be involved in planning and evaluating their learning activities. However, adult learners are self-directed and learn what they believe will be useful in their personal lives.

During this educational programme, the reasons for specific activities, and the various methods used were explained to the participants, who were evaluated based on their

learning activities to determine whether the objectives were met. Chapter five of this study describes Knowles' andragogy model.

1.9.4 Cyclic curriculum development model of Nicholls (1972)

Nicholls's Cyclic curriculum development model is a model that emphasises the cyclical nature of curriculum development which is a continuous process (Adirika, 2020). The educational program that assisted PHC providers in the management of ECs for adolescents was developed using Nicholls' Cyclic curriculum development model. The cyclic curriculum development model, according to Nicholls and Nicholls (1978), constitutes five components. The steps that were adopted in the development of an educational programme for PHC providers to facilitate the appropriate management of ECs for adolescents are as follows:

Step one: *situational analysis* which refers to the research. This was conducted in the first phase, where areas of concern were identified through the study findings.

Step two: *choosing objectives*; the objectives of the educational programme for PHC providers to facilitate the appropriate management of ECs for adolescents were chosen based on the findings of the situational analysis, as outlined in Section 7.2.2 of Chapter seven.

Step three: *content selection and organisation*; the educational program for PHC providers to help with the appropriate management of ECs in adolescents was chosen and

organised based on the findings and objectives (the content is discussed later on in Chapter seven).

Step four: *method selection*; the methods or strategies used to facilitate appropriate management of ECs for adolescents during the educational program implementation for PHC providers were chosen based on the content and objectives to be covered. The methods used are also discussed in Chapter seven.

Step five: *assessing learning*; following the completion of the educational program's activities, an evaluation of learning was carried out to determine whether the objectives were met. In Chapter seven of this study, the cyclic curriculum development theory is presented. These are the steps adopted in developing an educational programme to support PHC providers regarding the management of ECs among adolescents in the Ohangwena region.

1.9.5 Meyer and van Niekerk (2008)

The five phases of program development by Meyer and Van Niekerk (2008) were modified to support the development of the educational program that supports PHC providers in the management of emergency contraception for adolescents, as illustrated in figure 1.5.

The five phases laid the groundwork for the goal of the study by facilitating comprehension of the research process and information flow. The preliminary phase was the first step in submitting the documentation for approval; thus, it was regarded as the introduction of the situation analysis in this study. The phases are: Phase 1: Situation analysis, Phase 2: Conceptual framework, Phase 3: Educational programme development, and Phase 4: Educational programme implementation and Phase 5: educational programme evaluation. The programme development process steps of Meyer and Van Niekerk's (2008) are shown in Table 1.2. Chapter six goes over the phases in greater detail. The five phases of program development by Meyer and Van Niekerk (2008) were modified to support the development of the educational program that supports PHC providers in the management of ECs for adolescents, as illustrated in *Table 1.1*.

Table 1.1 Modified phases of programme development according to Meyer and Van Niekerk (2008)

<i>PHASES</i>	<i>OBJECTIVES</i>
<i>Phase 1: Situational analysis</i>	<p>Objective 1: Assessment of the knowledge, attitudes and practices of PHC providers regarding the management of EC for adolescents in the Ohangwena region</p> <p>Objective 2: Determine the factors associated with the knowledge, attitudes and practices of EC</p>
Phase 2: Develop a conceptual framework	Objective 3: Develop a conceptual framework that guides the study
Phase 3: Development of the educational programme	Objective 4: Development of an educational programme that supports PHC providers regarding the management of EC for adolescents

Phase 4: The implementation and evaluation of the educational programme

Objective 5: The implementation and evaluation of an educational programme that supports PHC providers regarding the management of EC for adolescents

1.10 RESEARCH DESIGN AND METHODS

A quantitative approach was used in this study as shown in table 1.2. To achieve the objectives to this study, a descriptive cross-sectional study design was used. To obtain measurable data with two or more variables, data were collected from multiple cases and at a single point in time. The data was gathered at public healthcare facilities in the Ohangwena region. Meyer and Van Niekerk's research was divided into five phases (2008). The five phases are 1. situational analysis, 2. conceptual framework development, 3. educational programme development, and 4. educational programme implementation and 5. educational programme evaluation.

1.10.1 Phase 1: Situation analysis

The first phase involved a situation analysis in which data was collected from PHC providers in order to assess their knowledge, attitudes, and practices regarding the management of ECs in adolescents. This phase addressed the study's first two objectives. The first goal was to assess PHC providers' knowledge, attitudes, and practices regarding the management of ECs on adolescents.

A quantitative paradigm was thus used to achieve this particular goal. A descriptive cross-sectional study design was employed; all districts, health centres, clinics, and PHC providers were selected through a stratified multi-stage sampling method and ninety- three (93) PHC providers participated. A self-administered questionnaire was used to collect data from the study participants. The questionnaire was divided into four sections: section one (1) covers the respondents' demographic variables, section two (2) covers the knowledge variables, section three (3) covers the attitude variables, and section four (2) covers the practice variables. The collected data were entered into the statistical package SPSS AMOS version 26 and a descriptive analysis was performed. The data was then rearranged, manipulated, transformed into an easy to understand form and interpreted. As a result, descriptive information was generated.

The study's second objective was to determine the factors associated with the knowledge, attitudes and practices of ECs. The inferential analysis started with data preparation and screening that involved missing value analysis (MVA) in SPSS and normality tests using skewness and kurtosis. The correlational design also involved the use of Exploratory Factor Analysis (EFA) in SPSS statistics version 26, which was used for dimension reduction through a factor structure or matrix. The analysis also involved tests for adequacy, convergent validity, discriminant validity and reliability. The factor structure matrices for each section of the questionnaire were then exported to SPSS AMOS for the Confirmatory Factor Analysis (CFA). The CFA was used within the model testing correlation design to address the association objectives. In SPSS AMOS version 26, the

analysis plugins were used to check model fitness, validity, and reliability. Detailed information on the methodology is contained in chapter three (3).

1.10.2 Phase 2: Conceptual framework

The practice-oriented theory and constructs of Dickoff, James, and Wiedenbach (1968) were used to guide the conceptual framework's development of this study; “agent”, “recipient”, “dynamic”, “procedure”, and “terminus”. This stage is covered in greater depth in Chapter five (5). The researcher (facilitator) was the “agent” in this study, and the “recipients” were PHC providers (nurses) who provided EC services to adolescents. The procedure aided in the creation of an educational program to assist PHC in the management of ECs on adolescents. The context is the PHC facilities (clinics and healthcare centres) where EC management was implemented. The “dynamics” were the day-to-day challenges that PHC providers faced when managing ECs. The “terminus” was the result of the implementation of an educational program to assist PHC providers in managing ECs as a solution to the challenges that PHC providers face in managing ECs. The framework served as the foundation for the educational program that aided PHC providers in the Ohangwena region in managing ECs. This stage is covered in greater depth in Chapter five (5).

1.10.3 Phase 3: Development of the educational programme

The educational programme that supported the PHC providers regarding the management of EC for adolescents was developed according to the model of Nicholls and Nicholls (1978). The findings of the situational analysis formed the basis for the

creation of an educational program. This model according to Nicholls & Nicholls (1978) includes five (5) activities: 1. Conducting a situational analysis, 2. Choosing objectives, 3. Choosing and organizing content, 4. Choosing and organizing teaching methods, and 5. Assessing learning. Chapter six (6) elaborates this in greater depth.

1.10.4 Phase 4: Implementation and evaluation of the educational programme

This phase covered the programme implementation and evaluation that supported the PHC providers regarding the management of ECs for adolescents. This phase consists of part one (1) and part two (2). Part one (1) was the implementation of the educational programme. The programme implementation and evaluation were developed using Kolb's experiential learning cycle (1984) and Knowles' model of andragogy theory (1984). This is explained in more detail in Chapter seven. Part two involved the evaluation the educational programme and in order accomplish this pre- and post-tests were given to workshop participants. The test questions were chosen in accordance with the objectives to be achieved. Every day, participants were given the opportunity to evaluate the programme's implementation. This phase of the programme implementation and evaluation is covered in Chapter seven (7).

1.11 DEFINITION OF KEY WORDS

The key words are derived from the title "*An educational programme to support the Primary Health Care Providers regarding the management of ECs for adolescents in Ohangwena Region, Namibia*" and they are described as follows:

1.11.1 Emergency contraceptives (ECs)

Emergency contraceptives (ECs) are methods of contraception that can be used to prevent unwanted pregnancy within the first five days prior to unprotected sexual contact (Jiménez-Iglesias et al., 2018). They are meant to be used after unprotected intercourse, contraceptive failure or misuse (such as forgotten pills or condom breakage or slippage), rape, or coerced unprotected sex. It is called EC or "*the morning after*" pill (World Health Organisation, 2018). In this study, ECs refers to contraceptive methods used to prevent unwanted pregnancy among adolescents in an emergency within a few hours of unprotected sexual intercourse.

1.11.2 Educational Programme

The educational programme is defined as educational activities aimed at developing the knowledge, skills, moral values, and understanding required in all aspects of life as opposed to knowledge and skills relating to a specific field of activity (Krishnamurthi, 2021). In this study, an educational program was developed to assist PHC providers in managing the provision of EC services to adolescents in the Ohangwena region.

1.11.3 Support

Support is defined as the provision of advice or information that can be used to solve a specific problem (Wong et al., 2018). After identifying the challenges in the management

of ECs among adolescents, this study defines support as providing information or instruction through educational training to PHC providers who provide ECs in the Ohangwena region.

1.11.4 PHC providers

Primary health care is the first point of contact between individuals, families, and the community and the health system, bringing health care as close to where people live and work as possible (WHO & UNICEF, 2018). A PHC provider is a healthcare practitioner who provides care such as health education, nutrition promotion, maternal and child health care, immunisations against major diseases, appropriate treatment of common diseases and injuries, the provision of essential drugs, and the provision of FP and EC services to clients at the first point of contact in order to prevent unwanted pregnancies. PHC providers in this study are registered nurses, enrolled nurses, and doctors who provided EC services to adolescents in the Ohangwena region to prevent unwanted pregnancies.

1.11.5 Emergency contraceptives management

Emergency contraceptives are contraception methods that can be used to prevent an unwanted pregnancy within the first five days of unprotected sexual contact (Jiménez-Iglesias et al., 2018). They are meant to be used after unprotected intercourse, contraceptive failure or misuse (such as forgotten pills or condom breakage or slippage), rape, or coerced unprotected sex. It is called EC or "the morning after" pill (World Health

Organisation, 2018). In this study, ECs management is the provision of EC services by the PHC providers to adolescents at healthcare facilities in the Ohangwena region to prevent unwanted pregnancies.

1.11.6 Adolescents

Adolescence is defined by the World Health Organization (WHO) as a period of life ranging from 10 to 19 years old that marks the transition from dependent childhood to independent adulthood. Adolescents range in age from 10 to 19 years (Hadush et al., 2021). In this study adolescents are young girls aged 10 to 19 who are receiving health care services in the Ohangwena region and are potential candidates for emergency contraception.

1.11.7 Knowledge

Knowledge is defined as the acquisition of information, understanding, or skills through experience or education (Bedassa, 2019). Knowledge in this study refers to the PHC provider's awareness of the existence of ECs, the type of ECs, the time for effective use, the mechanism of action of ECs, the appropriate candidates for use, and the indication for use.

1.11.8 Attitude

Attitude refers to the study subject's opinions, outlooks, values, position, and intention regarding the use of EC methods (Bedassa, 2019). For the purposes of this study, study subjects who had concerns and negative opinions about ECs and responded negatively to the attitude items were considered to have a negative attitude towards ECs, whereas those who had a positive outlook and concerns about ECs and responded positively to the attitude questions were considered to have a positive attitude toward EC.

If participants agreed that all primary health care providers should be aware of ECs and should be able to prescribe it, they too were considered to have a positive attitude. The use of ECs is less expensive than abortions, and adolescents should be counselled on contraception before becoming sexually active. Participants were scored negatively if they agreed that ECs are only used by commercial sex workers, do not prescribe ECs due to religious beliefs, or do not prescribe EC due to cultural beliefs.

Participants were assessed for misconceptions if they agreed that the easy accessibility of ECs increases risky sexual behaviour, that providing ECs to unmarried adolescents promotes sexual promiscuity, that telling a sexually active unmarried adolescent to abstain when they ask for ECs is preferable over giving them the ECs, and those who were afraid of prescribing ECs due to potential side effects. The Likert scale was used to assess respondents' attitudes towards ECs methods by circling the number that best described them.

1.11.9 Practice

Practice is defined as the repeated performance or systematic exercise of a skill or proficiency. It can also refer to a method, procedure, process, or rule that is used in a specific field or profession (Tegegne, 2019). For this study, the participants were assessed if they had ever been trained in FP and ECs, the availability of ECs at health care facilities, and if they had ever provided ECs to clients, prescribed ECs to adolescents, the methods of ECs prescribed, and the information given to clients concerning ECs.

1.12 OUTLINE OF THE CHAPTERS

This thesis is structured in nine chapters as follows:

Chapter one: Introduction and background of the study

This chapter introduces the topic, provides the context for the study, and outlines the research problem, study purpose, and objectives. The chapter further on introduces the study's significance, provides a brief introduction to the pragmatic perspectives of the study, as well as the theoretical foundation of the study, and concludes with key word definitions and the chapter layout for the research report.

Chapter two: Literature review

This chapter provides a thorough examination of the consulted literature sources on the subject. The review focuses on the introduction and background of the ECs before providing an overview of the ECs globally, in Africa, and in Namibia. The chapter also discusses the potential factors influencing the use of emergency contraception among

adolescents, health care providers' knowledge, attitude, and practice of emergency contraception, and the regulatory landscape surrounding the approval and use of emergency contraception.

Furthermore, the chapter concludes with a discussion of ECs in Namibia, target groups for ECs, beneficial effects of ECs, unfavourable effects of ECs, emergency contraceptive accessibility in Namibia, barriers to accessing ECs in Namibia, and mitigating approaches to ease access to ECs.

Chapter three: Research methodology

The chapter describes the study's design and methods for carrying it out. It describes the situational analysis, which includes the approaches and methodology (quantitative). This chapter also covers the research design, population, sampling and sample size, research instrument, pilot study, data collection and analysis, reliability and validity, study limitations, and ethical considerations.

Other study phases discussed include the development of a conceptual framework (Phase 2), the development of an educational program (Phase 3), the implementation of the educational program, and the evaluation of the educational program (Phase 4). The chapter concludes with a discussion of the ethical considerations that were used throughout the research process.

Chapter four: Results and discussion of the findings

This chapter discusses quantitative data analysis and interpretation. The chapter begins with a presentation of the demographic characteristics of the study's respondents. This study also includes a discussion of the findings regarding PHC providers' knowledge, attitude, and practice regarding the management of ECs in adolescents.

Furthermore, the chapter discusses quantitative data analysis using descriptive statistics, the relationship between demographic variables (independent variables) and knowledge, attitude, and practice (dependent variables), and the relationship between knowledge, attitude, and practice. The results are presented in tables, and figures in this chapter. Finally, the chapter concludes with quantitative results interpretations combined with the identification of challenges.

This study also includes a discussion of the findings regarding PHC providers' knowledge, attitude, and practice regarding the management of ECs in adolescents. Furthermore, the chapter discusses the results of quantitative data analysis using descriptive statistics, as well as the relationship between demographic variables (independent variables) and knowledge, attitude, and practice (dependent variables). Finally, the chapter concludes with a discussion of quantitative results as well as identifying challenges.

Chapter five: Conceptual framework

This chapter discusses the conceptual framework of the study; Dickoff et al (1968) 's Practice theory as it is applied in this phase to conceptualize the situational analysis outcomes. The six-survey list, “agent”, “recipient”, “context”, “procedure”, “dynamics”, and the “terminus” proposed by Dickoff et al. (1968) to realize the study's end product or terminus are also discussed.

Chapter six: Development of the educational programme to support PHC providers in the provision of ECs.

Based on the findings of the situational analysis, the chapter focuses on developing an educational program to assist PHC providers in managing ECs for adolescents. The Nicholls and Nicholls (1978) cyclic curriculum development model, which was used in developing an educational program, is discussed here. This model includes five activities: conducting a situational analysis, choosing objectives, choosing and organising content, choosing and organising teaching methods, and evaluating learning (Nicholls & Nicholls, 1978). The program had a goal, objectives, structure, content, and approaches or teaching strategies, all of which are covered in this chapter.

Chapter seven: Implementation and evaluation of the educational programme

This chapter highlights the educational programme's implementation and evaluation and explains how it will support PHC providers in the management of ECs for adolescents.

Part one (1) and Part two (2) of this phase were separated. Part one (1) involves implementing an educational program using Kolb's experiential learning cycle (1984) and Knowles' andragogy model (1984), both of which were used in the implementation of an educational program. Kolb's experiential learning cycle was used, with four stages: 1. Exploring activity, 2. Assimilation of new experiences, 3. In-depth understanding of experience, and 4. Application of what was learned. Knowles' model entails the following steps: 1. The establishment of a conducive learning environment, 2. The identification of learning needs, 3. The consideration of prior experience, 4. The establishment of clear objectives, and 5. Evaluation (Knowles, 1980).

The second section is an evaluation of the educational programme. Pre- and post-tests, as well as daily evaluations of program implementation, were given to workshop participants in order to assess the usefulness and impact of the programme discussed here.

Chapter eight: Conclusion, limitations, recommendations of the study and contributions to the body of knowledge

The study's findings are presented in this final chapter. This chapter describes the study's purpose and draws conclusions based on the study's various phases. The study's contributions to the body of knowledge are identified, as are the study's limitations. Finally, this chapter provides recommendations for practice, education, future research, and general recommendations.

1.13 CHAPTER SUMMARY

This chapter provided a general introduction to the study, a problem statement, and the study's objectives and significance. It also presented the study's paradigmatic perspectives, outlined the theories used in the study, and defined concepts. The following chapter contains a review of the relevant literature, while table 1.2 below summarises the study's research design.

Table 1.2 The research design

Phases	Objectives	Methodology
Phase 1: Situational analysis	Objective1: Assessment of the knowledge, attitude and practice of PHC providers regarding the management of ECs for adolescents in Ohangwena region	<p>A descriptive cross-sectional study design was used in this study. Ninety-three (93) PHC providers purposively sampled took part in this study. A self-administered questionnaire was used to collect data. SPSS version 26 was used to capture the collected data.</p> <p>Stage 1: Descriptive data analysis method was used in this study. Validity was ensured through the content, construct and face validity. Reliability was ensured through pilot testing and the Cronbach alpha test. Challenges were identified and interpreted</p> <p>Stage 2: The inferential analysis started with data preparation and screening that involved missing value analysis (MVA) in SPSS and normality tests using skewness and kurtosis. The correlational design also involved the use of Exploratory Factor Analysis (EFA) in SPSS statistics version 26, which was used for dimension reduction through a factor structure or matrix. The analysis also involved tests for adequacy, convergent validity, discriminant- validity and reliability. The factor structure matrices for each section of the questionnaire were then exported to SPSS AMOS for the Confirmatory Factor Analysis (CFA). The</p>

CFA was used within the model testing correlation design to address the association objectives. The analysis relied on plugins for model fitness, validity, and reliability checks in SPSS version 26. The challenges were identified and interpreted

	Objective 2: To determine the factors associated with knowledge, attitude and practice of EC	Determine the factors associated with knowledge, attitude and practice of EC.
Phase 3: Development of educational programme	Objective 3: Develop an educational programme that supports PHC providers regarding the management of ECs for adolescents	The Nicholls Cyclic (1978) curriculum development model guided the development of the educational programme.
Phase 4: The implementation and evaluation of the educational programme	Objective 4: Implement and evaluate an educational programme that supports PHC providers regarding the management of ECs for adolescents	<p>Part One: The implementation of the educational programme in the form of a workshop was guided by two theories: Kolb's experiential learning cycle and Knowles' model of andragogy.</p> <p>Part two: The evaluation of the educational programme that supports PHC providers regarding the management of ECs for adolescents using pre, post-test and daily evaluation of the educational programme</p>

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter provided an overview of the research. This chapter is a review of the literature on emergency contraception. A literature review is a method of identifying, evaluating, and interpreting the existing body of recorded work produced by other researchers that is systematic, explicit, and reproducible (Dawidowicz, 2016). Reviewing literature provides a researcher with an understanding of what is currently known about the topic under consideration for the current study, as well as the awareness that the researcher is contributing to the existing body of knowledge.

In this study, the researcher acknowledges the work of other scholars and evaluates recorded works in order to identify and interpret relevant existing knowledge. The primary goal of this chapter is to provide an accurate representation of the available knowledge and research-based theories on the knowledge, attitudes, and practices of primary health care workers in the provision of emergency contraception to adolescent girls, with a focus on the Ohangwena region.

This chapter lays the groundwork for a discussion of the various authors' perspectives on the research topic and includes relevant analyses. In this study, the researcher acknowledges the work of other scholars and thoroughly evaluates recorded works in order to identify and interpret relevant existing knowledge. This chapter serves as the

foundation for a discussion of the various authors' perspectives on the research topic and presents relevant analyses.

Literature was completed by identifying key words in titles and employing various search strategies utilising a Boolean operator (AND, NOT, OR) search using identifying key words such as knowledge on ECs or the morning-after pills, attitude towards emergency contraceptive morning after pills and the practice of emergency contraceptive morning after pills, health care providers or nursing personnel or health care providers/health care worker. The researcher used the following database: Science Direct, PubMed, Medline, SCOPUS, JOSTOR and Google scholar and also reviewed electronic academic databases like the database of African theses and dissertations, Open thesis, Centre for research libraries, Directory of Open Access Journals, as well as consulting hardcover books from the University of Namibia Library. The researcher chose these databases because they contain publications relevant to the research objectives.

The reviewed literature includes an overview of teenage pregnancy factors that are associated with teenage pregnancy, perspectives (overview) on the use of emergency contraception in general, potential factors influencing the use of emergency contraception among adolescents, adolescent factors associated with the use of ECs, health care providers' knowledge, attitudes, and practices on ECs, and the regulatory landscape regarding the application of ECs.

2.2 OVERVIEW OF TEENAGE PREGNANCY

This section provides an overview of adolescent pregnancy worldwide, as well as in Sub-Saharan Africa and Namibia. The following is an overview of teenage pregnancies.

2.2.1 Worldwide

Adolescents pregnancies continue to be a major challenge in developing and developing countries, and improving adolescents' reproductive health is a global priority. In the developing world, at least 21 million unintended pregnancies occur each year among adolescent girls aged 15 to 19 years (Wado et al., 2019). Furthermore, Zhang et al., (2020) avers that complications during pregnancy and childbirth are the leading causes of death for girls aged 15 to 19 worldwide, and 3.9 million of the estimated 5.6 million abortions performed each year among adolescent girls aged 15 to 19, are unsafe, contributing to maternal mortality, morbidity, and long-term health problems (Franjic, 2018).

2.2.2 Africa and Sub-Saharan Africa

Adolescent pregnancy is a significant public health issue, particularly in Africa (Ahinkorah et al., 2021). The overall prevalence of adolescent pregnancy in Africa is 18.8% (Kassa et al., 2018), with East Africa having the highest prevalence (21.5%) and Northern Africa having the lowest (9.2%) (Kassa et al., 2018). Risk factors for adolescent pregnancy includes; rural residence, never married, not attending school, no maternal education, no father's education, and a lack of parent-to-adolescent communication on

sexual and reproductive health (SRH) issues. As a result, interventions aimed at reducing adolescent pregnancy are critical (Kassa et al., 2018).

An estimated 45% of pregnancies among young women aged 15-19 years in Sub-Saharan Africa (SSA) result in unintended births, unsafe abortions, and miscarriages (Ahinkorah et al., 2021). Adolescent girls and young women under the age of 25 account for nearly half of all unsafe abortion cases in Sub-Saharan Africa (Ahinkorah et al., 2021). Adolescent pregnancy, both planned and unplanned, is associated with a number of negative health, educational, social, and economic outcomes. Childbirth is dangerous for adolescent girls, and research shows that pregnancy-related conditions are the second leading cause of death in developing countries (Wado et al., 2019). Adolescent pregnancy also disrupts young women's education, jeopardizing their future economic opportunities, including job market opportunities (Wado et al., 2019). According to Marvin-Dowle et al., (2018), the consequences of adolescent childbearing extend to the health of their infants, with evidence of increased perinatal mortality and low birth weight among babies born to mothers under the age of twenty.

2.2.3 Namibia

Namibia is one of the countries facing a major problem with adolescent pregnancy (Indongo, 2020). In Namibia, 19% of adolescents have started having children. This represents a 4% to 15% increase in adolescent pregnancy (The Namibia Ministry of Health and Social Services -MOHSS- and ICF International et al., 2014). The proportion of

teenagers who have given birth increases rapidly with age, rising from 3% to 27% between the ages of 15 and 19. Unwanted pregnancies primarily affect teenagers from rural areas and those with only a primary education.

The Ohangwena region had the highest number of adolescent pregnancies in the northwest region, with 22.7%, according to the last Namibia Demographic Health Survey, followed by Oshikoto (13.2%), Omusati (11.1%), and Oshana (9.0%) (The Namibia Ministry of Health and Social Services -MOHSS- and ICF International et al., 2014). According to the Ministry of Education, 1 542 girls dropped out of school in 2019 due to adolescent pregnancy, accounting for 23.3% of all recorded dropout cases among girls in the country (Ministry of Education, 2020). Ohangwena, Omusati, and Kavango East were the most affected regions, with 20.2%, 15%, and 12.5%, respectively (Ministry of Education, 2020). Pregnancy and childbirth complications are the leading causes of death in developing countries, including Namibia (Ministry of health and Social Services Report, 2020). Contraception use among young people aged 15-19 in Namibia is relatively low at 24%, while teenage pregnancy remains high at 19%.

2.3 FACTORS THAT ARE ASSOCIATED WITH TEENAGE PREGNANCIES

The following are the factors associated with adolescents' pregnancies as the age at which the adolescent had sex; being married; poverty; never used a contraceptive before; previously used a contraceptive; education level; early sexual initiation; exposure to media; and place of residence. These are explained as follows:

2.3.1 Age of the adolescent

Based on Donatus et al., (2018), the age of the adolescents at their first pregnancy is a significant factor in teenage pregnancies. The odds of adolescent pregnancy were higher among older teenagers which could be because as adolescents get older, they have more exposure to sex and their chances of marrying at that prime age and having children increase. Furthermore, older teenagers are more likely to separate from their parents and begin living independently, which may lead to risky sexual behaviours, including unwanted pregnancies. Furthermore, teenagers who marry older men frequently have less influence over sexual intercourse, childbearing, and contraception decisions (Agyemang et al., 2019).

2.3.2 Being married

Abebe et al. (2020) conducted a study to identify the determinants of teenage pregnancy, and they discovered that being married is an independent predictor of teenage pregnancy. When compared to single teenagers, married teenagers were more likely to have a teenage pregnancy. This could be because married teenagers become sexually active without knowledge of and access to FP and ECs, increasing their chances of becoming pregnant. Marriage may also force teenagers to discontinue their education, forego future opportunities for economic independence, limit the adolescent's decision-making power, and prevent them from negotiating safer sex. Because they are unable to negotiate safer sex if they lack decision-making power, they may become pregnant unintentionally.

2.3.3 Poverty

Poverty is another factor that contributes to teen pregnancy (Worku et al., 2021). Adolescent girls from wealthy households had a lower risk of teenage pregnancy than adolescents from low-income families. This could be because adolescent girls from low-income families are more likely to be exposed to early marriage and sexual initiation, and they cannot afford reproductive health services and contraception. Adolescents from low-income families are also more likely to have unintended pregnancies, owing to poverty and lower expectations of future economic success. This may also be justified because young people from lower socioeconomic backgrounds may engage in transactional sex as an economic survival strategy, leading to pregnancy at a younger age.

Another reason according to Manzi et al., (2018) is that parents fail to provide basic needs for their children and instead leave them to fend for themselves. Some parents force their young girls into forced marriages in order for them to survive, or they encourage them to engage in sexual activities in order for the family to survive. Some sexual relationships among teenagers are motivated by money rather than love; family poverty is strongly linked to unsafe sexual behaviours among teenagers.

2.3.4 Contraceptive nonusers

The prevalence of factors associated with adolescent pregnancy was associated with contraceptive nonusers. Contraceptive nonusers were nearly eleven times more likely to

become pregnant than contraceptive users (Habitu et al., 2018). It has been demonstrated that as the proportion of contraceptive nonusers increases, so does the proportion of pregnancy (Habitu et al., 2018). This could be due to a lack of contraceptive awareness and use, which is common and results in unplanned and unwanted pregnancies.

2.3.5 Previously used contraceptive

Adolescent girls who used contraception had a higher risk of pregnancy (Worku et al., 2021). This could be due to contraceptive failure, insufficient contraceptive counselling, awareness, and use skills, resulting in unplanned and unwanted pregnancies.

2.3.6 Educational level

A study conducted by Indongo (2020) in Namibia discovered that the educational level of adolescents has a significant influence on teenage pregnancies. Teenagers with a primary education have children at a younger age than those with a higher education. This could be due to a lack knowledge about how to prevent pregnancy and how to use ECs. Most prevention efforts do not reach these teenagers, leaving them without the necessary skills and information to make responsible sexual behaviour decisions (Birhanu et al., 2019). Adolescent girls with secondary or higher education had a lower risk of becoming pregnant early in life (Wado et al., 2019). This could be because education increases economic and decision-making power, as well as economic independence, leading to a delay in marriage and a decrease in fertility.

2.3.7 Early sexual initiation

Early sexual initiation increases the likelihood of early pregnancy (Birhanu et al., 2019). This could be due to a lack of contraception use and knowledge about how to prevent pregnancy before maturity. The majority of prevention efforts do not reach these teenagers, leaving them without the necessary skills and information to make responsible decisions about their sexual behaviours.

2.3.8 Exposure to media

Surprisingly, adolescent girls who were exposed to media had a lower chance of becoming pregnant, while those who were never exposed to media had a higher chance of becoming pregnant. This may be justified by adolescents' exposure to various forms of mass media, which may encourage them to use maternal health services such as youth reproductive services and FP services (Kassa et al., 2018a). Mass media exposure also increases awareness and understanding, as well as changes in attitudes, social expectations, and behaviours, all of which can have a positive impact on public health.

2.3.9 Place of residence

Teenagers in rural areas were four times more likely to become pregnant than those in urban areas (Habitue et al., 2018). This could be because rural teenagers are less educated and have limited access to contraception. Furthermore, rural communities encourage people to have children more than educated people who mostly live in urban areas.

2.3.10 Parental marital status

The prevalence of adolescent pregnancies was related to parental marital status. Teenagers from divorced parents were nearly twice as likely as adolescents from married parents to have a teenage pregnancy (Habitu et al., 2018). This could be due to divorced parents having less parental control than married parents. These factors contribute to increased early sexual debuts and risky sexual behaviours among adolescents from divorced families, exposing them to teenage pregnancies.

2.3.11 Lack of communication with parents on emergency contraceptive

A significant predictor of teenage pregnancy was also a lack of communication with parents about emergency contraception issues (Moges et al., 2018). Teenagers who did not discuss contraception with their parents were more likely to become pregnant than their peers. The reason could be that parents believe that their children are too young to discuss contraception (Abdulai et al., 2020). Reproductive health issues and topics are considered taboo, and some parents were unsure how to communicate, believing that teenagers had sufficient knowledge. Communication between parents and adolescents may allow parents to address some of their adolescents' challenges, which may help the adolescents postpone sexual activities and, by extension, pregnancy (Yakubu & Salisu, 2018).

Quite a few studies in Namibia on the family-related factors associated with adolescent pregnancy were carried out. However, a study conducted in other African countries discovered that a lack of parental education and parent-to-adolescent communication on sexual and reproductive health are some of the factors contributing to teenage pregnancies (Kassa et al., 2018b).

2.3.12 Communities with poor wealth status

Teenagers living in communities with a higher proportion of poverty had a higher risk of pregnancy than those living in communities with a lower proportion of poverty (Wado et al., 2019). This could be because teenagers in low-income communities have limited access to education and sexual and reproductive health services, such as FP and EC. They also face the issue of early marriage, school dropout, and dangerous work, such as commercial sex work. All of these factors make teenagers vulnerable to teen pregnancy.

2.3.13 Lower contraception use rate within the community

The community's lower contraception use rate significantly increases the likelihood of teenage pregnancies. Because the community has a lower proportion of contraceptive users, adolescents in that community may not receive enough information on how and when to use FP and ECs. Furthermore, they have less information about how to obtain FP and EC services from health facilities (Alemu et al., 2020). There have been few studies

in Namibia on the community-related factors associated with teenage pregnancy; however, a study conducted in Ethiopia by Kefale et al., (2020) discovered that teenagers who lived in communities with a higher proportion of poverty had a higher risk of experiencing teenage pregnancy than teenagers who lived in communities with lower proportion of poverty.

2.4 PERSPECTIVES (OVERVIEW) ON THE USE OF EMERGENCY CONTRACEPTION IN GENERAL

The overview of ECs examines the history of ECs in Africa and Namibia. The following is an overview of ECs.

2.4.1 Worldwide

The origins of modern ECs can be traced back to the 1920s, when a high dose of ovarian oestrogen was discovered to interfere with pregnancy in mammals. This method was first used by a veterinarian to prevent unwanted pregnancies in horses and dogs. Evidence remained until 1960, when doctors in the Netherlands gave a 13-year-old rape victim a high dose of oestrogen. Though this was found to be effective, there were numerous negative side effects (Seetharaman et al., 2016). The Yuzpe regimen, which consisted of a combined hormone-regimen (100µg ethnyl estradiol and 1mg norgestrel two doses 12 hours apart) that replaced the high dose of EC methods, was introduced in 1970. (Seetharaman et al., 2016).

Consequently, the Yuzpe regimen was used to replace a high dose of oestrogen because it presented fewer side effects. Simultaneously, oestrogen-free research was initiated, primarily in Latin America (Seetharaman et al., 2016). The Yuzpe regimen, which was popular until the turn of the century, has been surpassed by the LGN EC product due to its greater efficacy and fewer side effects. The Copper intrauterine device was introduced around 1970 as the only non-hormonal method of ECs. Ulipristal acetate (UPA), a selective progesterone receptor modulator, was approved as an EC in the United Kingdom in 2009 and in the United States in 2010 (Seetharaman et al., 2016).

2.4.2 Africa

Adolescent pregnancy continues to be a major issue in both developed and developing countries. Scholars revealed that an estimated 21 million pregnancies occur among adolescent girls aged 15 to 19 years in developing countries each year, with nearly half (49%) being unintended (Wado et al., 2019). This results in approximately 16 million births and over 3.2 million abortions each year. An estimated 45% of pregnancies among young women aged 15 to 19 in Sub-Saharan Africa (SSA) are unintended, resulting in unintended births, unsafe abortions, and miscarriages (Wado et al., 2019). Adolescent girls and young women under the age of 25 account for nearly half of all unsafe abortions in Sub-Saharan Africa (Wado et al., 2019). Emergency contraceptive use is an essential strategy for preventing unwanted pregnancies. Despite the availability of ECs, unwanted

pregnancies continue to increase in Sub-Saharan Africa. The review below looks at an overview of EC in Africa in countries such as Ethiopia and Namibia.

In Ethiopia, ECs are classified into two categories. The first category includes ECP such as progestin-only pills (POPs) and combined oral contraceptive pills (COCPs) (COCs). The second category includes intrauterine devices (IUCDs), which are therapeutically effective if inserted within seven days of unprotected sexual intercourse.

Ethiopia was the first country to implement ECs in 1997. Ethiopia's Ministry of Health made ECs available for free in public in 2004. ECs are not part of FP methods in Ethiopia, but they are used as an emergency contraceptive by women when they encounter various situations that predispose them to unwanted pregnancies (Fikre et al., 2020). Even though emergency contraception is not widely used in Ethiopia, it can reduce the risk of unintended pregnancy by 75 to 99% if used within three days of sexual contact. (Fikre et al., 2020). In Ghana, EC was introduced in 2000, but it was only in 2014 that the media started advertising them. The publication was sponsored by a project that has now ended. Therefore, there is a need to make ECs available by advertising them in many countries for clients to use them (Osei -Tutu, 2019).

2.4.3 Namibia

The use of emergency contraception is an important strategy for preventing unwanted pregnancies. Despite the availability of ECs, unintended pregnancies continue to rise in Namibia. In Namibia, the Ministry of Health and Social Service officially introduced the

emergency contraceptive in 2012 to prevent unwanted pregnancies (The Ministry of Health and Social Services, Namibia, 2019). Emergency contraceptive methods are not widely used in Namibia, but there are several methods that are recommended for use as an emergency contraceptive (The Ministry of Health and Social Services, Namibia, 2019). There are two common types of ECs, namely the “hormonal” and “non-hormonal” methods of ECs. The hormonal EC methods (oral methods) are ECPs, while the non-hormonal EC method is a copper-bearing intrauterine device (CIUD). The oral method, such as levonorgestrel (LNG) pills, ulipristal acetate (UPA), the Yuzpe regimen, and copper-bearing intrauterine devices (CIUD), is the most commonly used (The Ministry of Health and Social Services Namibia, 2019).

2.5 POTENTIAL FACTORS AFFECTING THE USE OF EMERGENCY CONTRACEPTION AMONG ADOLESCENTS

Factors associated with adolescent pregnancy are known as factors contributing to adolescent pregnancy, whereas potential factors affecting the use of emergency contraception are potentially contributing to adolescent emergency contraception use.

The following potential factors influencing the use of ECs were identified in the literature. Adolescent and reproductive health-trained health care providers, a lack of privacy and confidentiality, poor parental communication with adolescents on sexual and reproductive health issues, a lack of evidence-based research on emergency contraception, and the law governing the use of emergency contraception among adolescents, poor implementation

of the policy regarding emergency contraception usage, rape among the adolescents, lack of public awareness campaigns for ECs, social and cultural factors, religious factors, misconceptions about emergency contraception, adolescents' access to health care facilities, a limited range of ECs methods (out of stock), adolescents' lack of awareness and insufficient knowledge about ECs, and poor implementation of sexual education in schools. These are explained as follows:

2.5.1 A lack of health care providers who are trained in adolescent and reproductive health.

Ezenwaka et al. (2020) conducted a study in Southern East Nigeria to investigate factors limiting the use of contraception services among adolescents and discovered that insufficient staff skilled in adolescent sexual and reproductive health is one of the potential factors affecting the use of ECs. This means that the few health care providers who have the necessary skills are burdened with additional responsibilities, which increases their workload and fosters unfriendly attitudes toward patients. Providers who have not received reproductive health training may be unfamiliar with all EC methods, such as the IUD. As a result, clients who could have benefited from ECs are denied access if they meet such providers, contributing to the low uptake of ECs.

Training health care providers to screen and counsel clients about emergency contraception aids in the successful introduction and use of the ECs method. Scholars reveals that ECs are reliable methods of preventing pregnancy following unprotected

sexual contact. However, EC has received little attention as a contraceptive option for preventing unwanted pregnancies (Asut et al., 2018). According to Mohammed et al. (2019), the limited attention paid to EC is the reason why information regarding screening and counselling of EC clients is not included in many health providers training programs.

Provider training can help ensure the quality of services provided by ECs. Pre-service training, as part of the curriculum in university schools of medicine and pharmacy, can ensure the long-term sustainability of EC provider training. Some medical students who were assessed reported a lack of knowledge about ECs, and the study recommended training because EC knowledge and awareness were insufficient (Asut et al., 2018).

The Namibia Planned Parenthood Association (NAPPA) is heavily involved in the implementation of FP services in the community, including EC services. The organization has raised awareness about FP services, including EC services, and has provided information, education, and counselling (Namibia Ministry of Health and Social Services, 2001). NAPPA's establishment has supplemented FP, including EC activities provided by the Ministry of Health and Social Services, particularly in communities. This organisation is supported to ensure its survival. The government mobilises adequate financial resources for the FP program, including the EC program, through the Ministry of Health and Social Services. In addition, the Ministry of Health and Social Services mobilises community support and support from private organisations and donor agencies to fund the FP programme (Namibia Ministry of Health and Social Services, 2001). In Namibia, there is limited information on the funding for the training of health care providers on ECs, which

could contribute to the low uptake of ECs because health care workers were not trained to provide ECs.

2.5.2 Lack of privacy and confidentiality

Consultation with providers and clients is an important first step in implementing adolescent sexual and reproductive health services. This is necessary to protect the privacy and confidentiality of the information provided. According to Ezenwaka et al. (2020), a lack of privacy and confidentiality between adolescents and health providers is a major barrier to accessing and using contraceptive services. Furthermore, when privacy and confidentiality are not ensured, it leads to a lack of self-confidence and trust in health workers, which affects the rate of EC utilisation.

2.5.3 Lack of parental communication with adolescents on sexual and reproductive health matters

Lack of communication with parents about emergency contraception issues was another major predictor of low EC uptake (Moges et al., 2018). There is a "culture of silence" among parents when it comes to discussing sexual and reproductive health issues with their children, including EC. Some parents are uneducated about adolescent sexuality and do not understand why they should discuss it with their children. Other parents have negative perceptions and attitudes toward adolescents receiving sexual education as well

as contraceptive information and services. As a result, they avoid having these discussions.

Teenagers who did not discuss contraception with their parents were more likely to become pregnant than their peers. The reason for this could be that some parents believe that their teenagers are too young to discuss contraception (Abdulai et al., 2020). Some people believe that discussing reproductive health issues is taboo, that parents don't know what to say, and that teenagers know enough. Communication between parents and adolescents may allow parents to address their adolescents' challenges and assist adolescents in delaying sexual encounters and, thus, pregnancy (Yakubu & Salisu, 2018). There have been few studies in Namibia on the family-related factors associated with adolescent pregnancy. A study conducted in other African countries, on the other hand, discovered that lack of parental education and lack of parent-to-adolescent communication on sexual and reproductive health are some of the factors contributing to teenage pregnancies (Kassa et al., 2018b).

2.5.4 Lack of evidence-based research on emergency contraception

There is no evidence-based research to assess and understand the major barriers to EC service provision among adolescents. Evidence-based research can assist providers in identifying gaps and effectively and efficiently filling them. Nine (9) studies reported societal barriers, which were divided into two sub-themes: the social consequences of contraceptive use and social norms. Divorce, accusations of witchcraft, stigma, the label

of being promiscuous, disapproval of contraceptive use by friends and colleagues, as well as family and the larger society, societal prohibition of discussions on issues concerning emergency contraception, and contraception being considered an issue for females only were the specific societal barriers to contraceptive use (Bain et al., 2021).

Seven of the studies reported health system-based barriers, which included five subthemes: lack of privacy and confidentiality at health facilities, negative attitude of health professionals, long waiting times, poor communication between health professionals and young people, and physical inaccessibility of buildings by people with disabilities. The most frequently reported sub-theme was the negative attitude of health professionals, which included being treated disrespectfully, being denied contraceptive services entirely, being denied contraceptive education, and discrimination (Bain et al., 2021). Limited studies were conducted in Namibia as evidence-based research on EC service provision among adolescents, which might be a possible reason to identify the challenges regarding EC service provision among adolescents and understand the major barriers contributing to the low uptake of EC.

2.5.5 Law regarding the use of emergency contraception among adolescents

Swan (2021) discovered that policy changes are relevant to contraceptive availability and accommodation in the United States because they affect when, where, and how people can physically access emergency contraceptive care.

Several countries have made efforts to improve adolescent access to and use of EC. Plan B One-Step emergency contraception was approved for over-the-counter sale in the United States in 2013. (Swan, 2021). Plan B One-step's protection expired in April 2016, allowing the over-the-counter sale of all emergency contraception regardless of age. These policy changes are significant in terms of contraceptive availability and accommodation because they affect when, where, and how people can physically access emergency contraceptive care (Swan, 2021).

Swan is popular in the United States (2021) Changes in policy can also have a significant impact on emergency contraception affordability by influencing the cost of health care as well as people's access to health insurance and other financial resources. The Affordable Care Act (ACA) is a US healthcare reform law that established a new healthcare marketplace and required coverage of preventive services, resulting in increased access to health insurance and lower contraception costs (Chait & Glied, 2018). Similar legislation in other countries may improve access to the European Union.

According to studies, barriers to access to emergency contraception within pharmacies include age restrictions and pharmacists' ability to dispense EC without a physician's prescription (Haeger et al., 2018). The high cost of emergency contraception creates financial barriers, particularly for younger patients who may not be able to afford them (Josephine Ascensio, 2017). Out-of-pocket costs for Ella (Ulipristal acetate) emergency contraceptive tablets, for example, ranged widely, ranging from \$2.59 to \$1200.99, with a median cost of \$50 (Haeger et al., 2018). Despite the fact that ECs are now available without prescription, systematic barriers to access to emergency contraception remain.

The law regarding the use of contraception among adolescents is still not clearly understood in Namibia since there has been no review of the FP policy since its introduction in 1995 to accommodate current information, including ECs, thereby contributing to the low uptake of ECs. Namibia's FP policy is outdated and does not talk much about ECs. This might contribute to the low uptake of ECs among adolescents due to the absence of the law regarding the use of emergency contraception among adolescents.

2.5.6 Poor implementation of policy regarding emergency contraception use around rape among the adolescents

Victims of sexual violence may also become pregnant unintentionally. Adolescents who have been sexually abused require emotional, psychological, and medical attention. To reduce the risk of pregnancy, medical services for post-rape care should include ECs (Thompson et al., 2018). Unfortunately, EC is not widely available, despite the increased risk of pregnancy. As a matter of human rights and public health, emergency contraception should be readily available in emergency care facilities. Although some governments and providers restrict ECs access based on age, ECs are safe and effective for females of all ages. However, all female survivors of rape, including adolescents, can and should be offered emergency contraception if they believe they are at risk of pregnancy (Thompson et al., 2018).

Barriers to ECs for survivors of sexual violence persist in many settings, such as EC not being routinely counselled or provided. The country's legal and regulatory framework for EC access can either facilitate or obstruct EC access. In some countries such as the United States, EC is legally sold, purchased, or made available. However, some countries continue to lack dedicated EC products. Even in countries where a product is registered, EC is far from being mainstreamed because EC pills are not on the Essential Medicine list, many countries require women to obtain a prescription before accessing EC, and some countries lack standardised protocols for the care of sexual violence survivors. There are also some additional barriers, such as requiring a rape survivor to first report to the police or to take a pregnancy test before receiving EC.

According to Namibian policies on the Combating of Rape Act 8 of 2000, the state must provide treatment to rape survivors regardless of age if they are considered to be at risk of becoming pregnant. This step contributes to Namibia's obligations under the SADC Protocol on Gender and Development, which requires member states to provide survivors of sexual offenses with testing, treatment, and care, including access to emergency contraception as a means of reducing unwanted pregnancies (Namibia Ministry of Gender Equality and Child Welfare, 2012). However, sometimes this law might be wrongly interpreted, and the provision of treatment such as emergency contraception for survivors of sexual offences may not be provided, and this might contribute to the low uptake of EC among adolescents.

2.5.7 Lack of public awareness campaigns about emergency contraceptives

Creating demand for EC and gaining community support are critical steps in preparing for its inclusion in a large-scale FP program. For an EC program to be effective, potential clients, including adolescents, must be aware of the option, understand when EC is appropriate, and know where to obtain ECs when it is required (Awopegba et al., 2021). EC advocates can help to create broad awareness and support for the method, which will lead to client demand, by educating the community about emergency contraception and involving all stakeholders in planning for EC introduction. Following the International Conference on Population and Development, development partners and governments implemented programs to increase women's knowledge and use of contraceptives EC (Awopegba et al., 2021).

NAPPA is one of the NGOs in Namibia that is heavily involved in the implementation of FP, including EC services in the community. The organisation has raised public awareness about FP, including EC, and has provided information, education, and counseling services. NAPPA's establishment has supplemented FP, including EC activities provided by the Ministry of Health and Social Services, particularly in communities (Namibia Ministry of Health and Social Services, 2001).

2.5.8 Social and cultural factors

Adolescent emergency contraceptive use was perceived to be linked to societal norms regarding early contraceptive use. One community leader stated in a study by Ezenwaka et al. (2020) that the use of ECs among adolescents is unacceptable in the community because it prevents pregnancy and reduces population size. Adolescents face barriers to using emergency contraception due to community beliefs (Ezenwaka et al., 2020). Sexual activity and the use of emergency contraception among unmarried adolescents is considered a cultural taboo.

As a result, adolescent emergency contraception is not discussed or tolerated. Adolescents who engage in premarital sex face social exclusion and stigma, which contributes significantly to the underutilization of reproductive health services, including EC services and teenage pregnancies (Ezenwaka et al., 2020). This intolerance causes adolescents who require emergency contraception to hide for fear of being recognised while seeking information and services, lowering EC uptake. According to some studies, adolescents are concerned about being judged when seeking services, including EC services (Garney et al., 2021). Community dialogue and focus group discussions with parents and other community members may be beneficial in deconstructing societal norms and misconceptions about adolescent sexuality and access to EC. This intolerance causes adolescents who require EC to hide for fear of being identified while seeking information and EC services.

2.5.9 Religious factors

Pre-marital sexual intercourse sinful (Ezenwaka et al., 2020), and adolescents are culturally obligated to refrain from sexual intercourse until marriage. Various religions advocate for total sexual abstinence among unmarried people and consider pre-marital sexual intercourse to be immoral; as a result, emergency contraception for adolescents is not discussed or tolerated. The society also believes that exposing adolescents to emergency contraception would encourage promiscuity and that early contraceptive knowledge suggests virtue erosion (Ezenwaka et al., 2020). These standards may lead to the exclusion and stigmatization of adolescents in need of EC services. In communities with strong substantial restrictions through cultural norms on premarital sex, this prevents adolescents from seeking EC services because of fear of exposure, shame and embarrassment (Subedi et al., 2018). This might contribute to the low uptake of EC among adolescents.

Namibia, like the rest of Southern Africa, is a Christian country, and many people oppose premarital sexual relations (Turner, 2021). Some Christians oppose the use of modern contraception, including ECs, because it is considered a "killing the child" sin. Religion influences adolescents' contraceptive needs and decision-making, including ECs. Churches such as the Catholic Church appeared to be against the use of modern contraception. This may contribute to adolescents' low EC uptake (Turner, 2021).

2.5.10 Misconceptions about the emergence of contraception

According to one study, adolescents had several misconceptions about EC pills because they were heavily influenced by the opinions of family and friends (Dombola et al., 2021). Furthermore, adolescents expressed their views on how the use of emergency contraceptive during adolescence affects future fertility in girls. There is a widespread belief that using emergency contraception during adolescence reduces one's fertility prospects (Mbachu et al., 2021). Adolescents believe that some girls who use emergency contraception will be unable to conceive when they marry and have children (Mbachu et al., 2021).

Many adolescents believe that ECs should not be used because it causes abortion or serious consequences such as cancer, infertility, and foetal malformations, revealing a significant level of ignorance and low adherence to EC use (Monteiro et al., 2020). There was no research done in Namibia on the myths and misconceptions surrounding the use of emergency contraception. However, a study conducted in other African countries such as Kenya discovered that myths and misconceptions about the use of emergency contraception are some of the barriers to adolescents accessing ECs (Mwaisaka et al., 2020). Negative attitudes towards the use of ECs are a significant barrier to receiving ECs in a timely manner, contributing to ECs low uptake. Adolescents who have negative attitudes toward EC use are more likely to become pregnant unintentionally. According to popular belief, ECs do not protect against sexually transmitted infections, but rather encourages promiscuity (Dombola et al., 2021).

2.5.11 Financial barriers

According to one study, adolescents living in rural areas face transportation challenges when traveling to and from clinics, and the distance from the clinic also prevents adolescents from accessing EC services (Ajayi et al., 2021). This could be because the majority of adolescents are unemployed and cannot afford transportation. Distances can demotivate adolescents from using EC services, which is a major contributor to adolescents' low ECs uptake. Another factor contributing to the low uptake of ECs among adolescents is the lack of access to ECs at pharmacies (Jambrina et al., 2021). ECs at private pharmacies is not offered free of charge, and is expensive. Unemployed adolescents cannot afford to purchase ECs at private pharmacies. Furthermore, the service hours and location of the service were perceived as some of the barriers to obtaining EC services by adolescents, contributing to the low ECs uptake (Subedi et al., 2018)

2.5.12 Judgments and the attitude of health care providers

The issue of healthcare providers contribution to the uptake of EC by adolescents was discussed by many scholars worldwide. Based on Silumbwe et al (2018), adolescents generally believe that the unfriendly and judgmental attitudes of some healthcare providers discourage them from seeking contraceptive services from health facilities. Thus, the low uptake of ECs was influenced by health care providers' attitudes such as yelling, scolding, refusal and denial of EC services. Moreover, providers' negative attitude is the primary impediment to their EC access and use of services. As a result, adolescents

are hesitant to use contraceptive services and are uncomfortable disclosing their contraceptive needs to some health professionals.

2.5.12 Limited range of emergency contraceptive methods and stock out

Stock-outs of EC methods, as well as the lack of ECs in some facilities, had a negative impact on ECs utilization among adolescents. This implies that adolescents could not access such services in times of need. Furthermore, some healthcare facilities were unable to provide ECs because some health personnel had not received the necessary training (Silumbwe et al., 2018).

2.5.13 Adolescents' lack of awareness and insufficient knowledge about EC

Researchers have indicated that to achieve the public health benefits of ECs uptake, potential users must be well versed in all the information regarding ECs methods. Specifically, adolescents must know that ECs are easily accessed, as well as their effectiveness and safety to use. A study by Sahu et al, (2019) found that inadequate knowledge about EC was a big contributing factor on the low uptake of ECs in Nepal. To a certain degree, literacy and socioeconomic status contributed to low uptake of EC. The study suggests that creating sustainable awareness of ECs and their use may prevent unwanted pregnancies among adolescents (Sahu et al., 2019).

Nonetheless, some researchers argue that the sources of information play a significant role in adolescent EC use. According to a study conducted by Busery and Sisay (2016) among secondary students in Nigeria, the EC information they received from their teachers, print media, and radio or television was considered inaccurate. Busery and Sisay (2016) further assert that the students perceived the information they got from health care providers as more reliable.

Comparably, Babatunde et al. (2016) in a study conducted among public secondary schools in Ilorin in Nigeria, expostulated that the use of ECs awareness was low, and this contributed to their low EC uptake, which in the end resulted in unwanted pregnancies.

According to a study conducted in Ethiopia among first-year students at one of the universities, their ECs knowledge was low, and even those who had heard about ECs through print media, radio, or television did not know the time limit for emergency pills or IUD usage (Lata & Nursing, 2019).

Similarly, Saini et al. (2018) found that emergency contraception knowledge was moderate among college students in Tamil Nadu, India, and that they mostly had a negative attitude toward the ECs. Hailemariam et al. (2015) argue that adolescents with correct information about EC are likely to use it to prevent unwanted pregnancies. Thus, once adolescents are familiar with ECs use and benefits, its uptake is likely to go up.

To bolster this argument, a study conducted among first-year medical students at the International University of Nicosia in Canada on their knowledge and perception of FP

and emergency contraception revealed that their knowledge and awareness were insufficient, which contributed to the students' low uptake of EC while remaining vulnerable to unwanted pregnancies (Asut et al., 2018).

In Namibia, the most recent Demographic Health Survey (NDHS) in 2014 revealed a positive trend in adolescent girls' awareness of modern contraception usage at 53%, while it was reported to be 43% in rural areas. This could be one of the factors contributing to the high number of unwanted pregnancies in rural communities like Ohangwena.

The report further highlights that the use of contraceptive methods is lowest in Omusati at 37% and 39% in Ohangwena (MOHSS, ICF International & Namibia Statistics Agency, 2014). Omusati and Ohangwena are among the regions with high rates of adolescent pregnancies due to low uptake of FP methods. Despite the government of Namibia's concerted efforts to provide FP services, uptake remains low due to a lack of awareness of EC, resulting in unintended pregnancies. In fact, emergency contraceptive provision was only introduced and included in the National Guideline for FP in 2013 in Namibia, to accommodate those who would need the service. Contradictorily, the emergency contraceptive prevalence rate is not captured anywhere in the Namibia national statistics documents (Mwatilifange & Edwards-Jauch, 2017). In Namibia, a 2017 study in the Otjozondjupa region discovered that adolescent girls do not use adolescents' health services due to a lack of awareness of the existence of adolescents' friendly health services such as FP and emergency contraceptive services (Muyenga et al., 2017).

Although ECs are important for adolescents, its uptake may face barriers such as a lack of awareness about its proper use and safety, a lack of comprehensive sexual education, the judgmental attitude of primary health care providers, parental and guardian restrictions on access to ECs, and a lack of power to negotiate the use of FP methods with their partners. There is no medical necessity for a 'age threshold,' and adolescents should be able to obtain ECs when necessary.

Adolescents can use IUDs as an emergency contraceptive method. IUD insertion is also possible in adolescents and nulliparous women (Ministry of Health and Social Services, 2019). In the case of rape, if the unprotected sexual intercourse occurred within the last five days, the Ministry of Health and Social Services (2019) advises that EC should be provided.

2.5.14 Poor implementation of comprehensive sexuality education in schools

In order to make informed decisions about sexuality and reproduction, all individuals, without exception, require access to high-quality, evidence-based information on sexuality and sexual and reproductive health, as well as effective emergency contraception methods. This necessitates trained personnel counselling on emergency contraception and the provision of comprehensive sexuality education, both within and outside of schools, and must be evidence-based, scientifically accurate, gender-sensitive, free of prejudice and discrimination, and adapted to young people's level of maturity, in order to enable

them to deal with their sexuality in a positive and responsible manner (United Nations Educational Scientific and Cultural Organization., 2021).

Sexuality education should be made mandatory in schools and offered on a regular basis to students of all ages and levels. Inadequate counselling tools and services, limited or no sexuality education within or outside of schools, and no or incorrect information about the safety and effectiveness of ECs all impede individuals' ability to make informed decisions, contributing to low ECs and other reproductive health care service uptake (United Nations Educational Scientific and Cultural Organization., 2021). Eastern and Southern African (ESA) countries such as South Africa, Zambia, Lesotho, the Kingdom of Eswatini, Malawi, Mozambique, and Namibia signed a declaration in 2013 committing to expanding comprehensive rights-based sexuality education beginning in primary school. As a result, the majority of ESA countries have developed a Comprehensive Sexuality Education curriculum, which is integrated into the school curriculum (Chawhanda et al., 2021).

In Namibia, the comprehensive sex education (CSE) course is part of the life skills subject, and it is intended to provide students in Grades 4 through 12 (ages 10 to 19) with the skills and values they need to make appropriate and healthy sexual choices. However, sexuality education is still a source of contention among stakeholders, and there is a lack of collaboration between schools and health facilities to provide sexual and reproductive health (SRH) information and commodities (Chawhanda et al., 2021). However, Mogotsi (2019) informs that due to concerns about immorality, the Namibian Council of Churches and some parents have called for the removal of comprehensive sexuality education from the school curriculum

2.6 ADOLESCENTS FACTORS ASSOCIATED WITH THE UTILISATION OF EMERGENCY CONTRACEPTIVES

Adolescent factors associated with emergency contraceptive use are the factors that contribute to increased emergency contraceptive use. Consumer (adolescent) factors associated with the use of ECs, on the other hand, are usually factors associated with individuals' characteristics, such as the adolescent's age, educational level, a friend's or partner's knowledge on emergency contraception, the use of media, history of pregnancy, and previous contraceptive use, which were identified and discussed as follows:

2.6.1.1 The age of the adolescents

According to studies, older teenagers are more likely to be aware of ECs. One reason could be that older teenagers are more sexually active than younger teenagers. Sex differences in knowledge have been discovered in the United States and other countries. In a 2015 study, young women (86%) reported hearing about emergency contraception at a higher rate than young men (70%). Another study published in 2020 found a link between adolescents' age and their use of EC. Respondents aged 20 - 24 years were more than twice as likely to use EC as contraception as those aged 15 -19 years, and one of the reasons for this could be Adolescents may have less knowledge about the proper use of EC because they did not receive information at school.x

2.6.1.2 The educational level of the adolescents

According to research, adolescents and young people with secondary and higher education are more likely to use ECs than those with no formal education or primary education (Ahinkorah et al., 2020). Education advancements, it has been argued, have the potential to shape individual perceptions and knowledge about ECs, assisting them in overcoming misconceptions about the use of EC (Debebe et al., 2017). Adolescents who used EC had a higher level of education than those who did not use EC.

2.6.1.3 The use of media

According to the available research, having a radio, a TV, and chewing Chat increases the likelihood of EC use in adolescents (Alano, 2021). Furthermore, these adolescents are likely to use the internet to obtain information about EC as well as a location to obtain EC (Alano, 2021). In Namibia, no study has been conducted to determine the factors associated with the use of ECs among adolescents, such as media use.

2.6.1.4 Friend and partner knowledge emergence contraception

Adolescents who discussed ECs with a partner were 1.9 times more likely to use it than their peers. This could be because adolescents have access to current information about using EC from their male sexual partners (Alemu et al., 2020)

2.6.1.5 History of pregnancies

One study Abera et al. (2021) discovered that having unprotected sex at least once and a history of pregnancy were the two most powerful predictors of emergency contraceptive use among adolescents. Furthermore, respondents with a history of previous pregnancies were found to be three times more likely to use emergency contraception than those with no history of pregnancies.

2.6.1.6 Previous contraceptive methods use

Based on Fikre et al., (2020) the use of previous contraceptive methods was linked to increased EC use. Adolescents who had no history of using contraceptive methods were 0.22 times less likely to use emergency contraception than adolescents who had a history of using contraceptive methods.

2.7 HEALTH CARE PROVIDERS' KNOWLEDGE, ATTITUDE AND PRACTICE IN RELATION TO EMERGENCY CONTRACEPTIVES

Adolescent emergency contraceptive behaviour is influenced by health care providers, and their knowledge, attitudes, and practices regarding ECs can influence adolescents' emergency contraceptive behaviour. Some of the factors that influence EC usage among adolescents are health care providers' knowledge, attitude, and practice regarding emergency contraception, which are described below: Health care providers' knowledge on emergency contraception

In the Republic of the Northern Cyprus, Asut et al. (2018) surveyed medical students to ascertain their knowledge and perceptions of ECs. The study's findings revealed that knowledge and awareness were insufficient. This was demonstrated by only 49% of the medical students who knew about the EC methods and 4.8% knew about IUD. The majority of participants (85.6%) were unaware of the most effective EC methods. The most common reasons for using EC were unprotected sex (58.9%) and unintended pregnancy (53.1%). ECs are used in cases of contraceptive failure by less than one-fifth of the participants (18.3%). Poor knowledge among the health care providers may mean that they do not know of the most effective ECs despite its availability, thus, women who may benefit from this method may be denied this option in certain areas because this is not known as a method of ECs. Participants were also found to only be aware that EC could be given contraceptive failure. This means that when women present themselves at the health care facilities, other than contraceptive failure, they may be denied EC services because various indications for using EC are unknown.

A survey on ECs knowledge among service providers (nursing staff in a private medical college in India) conducted by Jindal et al. (2020) discovered that knowledge about ECs was poor among service providers, they had many misconceptions about the timing of its intake and the side effects, and they were opposed to its over-the-counter availability. This implies that misconceptions exist as a result of a lack of knowledge, which could be a barrier to the effective use of emergency contraception. More awareness programs and training for trainers can dispel these myths and encourage trainers to use and promote EC to their clients.

Healthcare providers in Botswana had limited knowledge of the most recent contraceptive methods, including emergency contraception (Tshitenge et al., 2018). This means that a lack of knowledge about the most recent methods of contraception, including emergency contraception, could be a barrier to effective use of emergency contraception. As a result, workshops and skill training may help to fill knowledge gaps about new contraceptive methods, their side effects, and mechanisms

Moreover, a cross-sectional study on the knowledge, attitude, and practice of ECs conducted by Shakya et al. (2020) among community pharmacy practitioners in Nepal, revealed that community pharmacy practitioners lacked specific information about ECPs, such as side effects, dosing schedule, and time frame. This could have an impact on the information provided to users by community pharmacy practitioners during counselling. A lack of knowledge can lead to the delivery of incorrect information to ECPs users, resulting in inappropriate drug use and unwanted pregnancies. Therefore, educational interventions and awareness programs should be developed to educate pharmacists about the emergency contraceptive methods that are necessary to prevent unwanted pregnancies among adolescents and young women.

In Nepal, Shakya et al. (2020) discovered that the majority of respondents had good knowledge and practices for dispensing ECPs, as well as a positive attitude toward using ECPs. However, some respondents believed that ECPs should not be classified as OTC drugs and agreed that using ECPs without a prescription would promote unsafe sex, and

respondents lacked specific information such as side effects, dosing schedules, and time frames. This could have an impact on the information given to users during counselling by health care providers, resulting in unwanted pregnancies. As a result, educational interventions and public awareness campaigns should be developed to educate health care providers about emergency contraception. There is no known local study on knowledge among Namibians.

2.7.1.1 Health care providers' attitude towards emergency contraception

A study in India; Panda et al. (2021) conducted on the knowledge and awareness of young doctors about ECs and discovered that most health care providers believe that ECs promotes irresponsible behaviour, sexually transmitted infections, and promiscuity. This implies that the health care providers have a negative attitude toward ECs and may be unable to provide it because of their beliefs. Health care providers play an important role in raising awareness and should be knowledgeable about and supportive of the use of emergency contraception. Medical education must be expanded to include EC methods, which are critical for promoting women's health and empowerment.

A cross-sectional study by Shakya et al. (2020) on the knowledge, attitude, and practice of ECs among community pharmacy practitioners in Nepal, and the study revealed that community pharmacy practitioners believed that ECs should not be classified as OTC (over-the-counter) drugs and agreed that ECPs without a prescription would promote

unsafe sex. This implies that the pharmacists have a negative attitude toward ECs and may not be dispensing it as a result of their beliefs.

another study by Jonas et al. (2017a) on health-care behaviours and personal determinants associated with providing sexual reproductive health services in Sub-Saharan Africa. Most health-care workers had negative attitudes and behaviours toward sexual reproductive health services, including emergency contraception. This may imply that negative behaviours and attitudes may have an impact on women's and adolescents' access to and utilization of reproductive health care services.

A study conducted in Korea by Lee et al. (2019) on the attitudes of Korean physicians toward ECPs. The study found that physicians were opposed to reclassifying ECPs as a prescription drug. In this study, 92% of the physicians preferred to keep ECPs as a prescription drug, while 6% preferred to switch to over-the-counter medications. Because of concerns about potential abuse, physicians were opposed to the switch of ECPs to an OTC drug. Another reason is that regular contraceptives may be less preferred if emergency contraceptive pills were available as a prescription drug in Korea, where contraceptive usage is low. This means that opposing viewpoints may act as a barrier to the effective use of emergency contraception, which must be addressed. This means that conflicting opinions may act as barriers to the effective use of ECs, which must be addressed; therefore, emergency contraceptive education initiatives among health care providers should be expanded before improving access to ECPs.

According to Sharma (2017) in a study on the understanding of ECs among nursing staff at a tertiary hospital in Andaman and Nicobar Island, India, nurses had heard about ECs and had knowledge and a positive attitude toward ECs. However, 76.25% incorrectly believed that ECs are abortifacient. This implies that the beliefs that ECs are abortifacient need addressing. Nurses with extensive knowledge and a positive attitude can serve as effective counsellors in raising awareness, improving understanding, and changing attitudes toward ECs.

A few studies have been conducted in African countries to assess health care providers' knowledge, attitude, and practice regarding emergency contraception. According to Mohammed et al. (2019) research on pre-service knowledge, perceptions, and use of ECs among health care providers in Ghana, approximately 54.97% did not know the appropriate time to use IUD as ECs. In contrast, nearly four-fifths (38.74%) believe that using ECs is morally wrong, and 54.5% believe that using ECs promotes promiscuity. This means that many people believe that ECs promote promiscuity and that using it is morally wrong. As a result, education should provide opportunities for detailed information and practical knowledge on ECs in order to demystify negative perceptions and attitudes toward ECs and improve ECs knowledge. In Namibia, no research has been conducted on service providers' attitudes toward ECs.

2.7.1.2 Health care providers' practice on emergency contraception

It was critical to obtain some data from study findings regarding the prescription or dispensing practices of various providers, as well as their interactions with consumers. The dispensing practices of ECs by health care providers were found to be good, with 99.1% of 227 health care providers reporting that they dispensed ECs. The majority (67%) of health care providers stated that they dispense a 1-10 range of ECs daily on average (Shakya et al., 2020). This means that many believe that EC is important in pregnancy, and they have no concern about the use of EC among potential users to prevent unwanted pregnancies. Other reasons could be that most providers dispense or prescribe ECs to potential users without providing proper counselling, which could be a barrier to proper EC use by consumers, putting them at risk of unwanted pregnancies. Therefore, training and re-training providers to give proper counselling to potential EC users is encouraged.

ECPs is available over the counter in many countries, and adolescents can decide for themselves whether they require it. Because of the safety profile of ECPs and the simplicity of the regimen, many or most adolescents do not require information other than that provided with the package when purchasing ECPs. However, some adolescents may require or wish for more information from providers. Some studies reported on the likelihood of providing information and advice to clients purchasing ECPs. For example, according to a study conducted in Canada by Borsella and Foster (2020), most health care providers provided accurate information about ECs, with only a small number making incorrect statements about the time frame for use, side effects, and mechanisms action.

This means that the client who will be in contact with a small number of providers who have insufficient information about ECs might not prescribe EC due to improper and incorrect information, which can put clients at risk of unintended pregnancy.

A study on the use of ECs by female gynaecologists Yang et al. (2018) was conducted in China. The majority of respondents were misinformed about the side effects of ECs. This means that the providers might not prescribe the ECs to potential users due to some misconceptions, and this puts the client at risk of unwanted pregnancies. Therefore, misconceptions could be barriers to emergency contraceptive practice.

There is no known study on the knowledge, attitude, and practice of ECs among service providers in Namibia. This means that there is a lack of evidence-based research on providers' knowledge, attitude, and practice of ECs, which could be one of the factors contributing to the high rate of unwanted pregnancies among adolescent young girls.

2.8 REGULATORY LANDSCAPE REGARDING THE APPROVAL AND USAGE OF EMERGENCY CONTRACEPTION

The regulatory landscapes are the instruments and treaties that promote universal health access, including FP and EC. The various freedoms and privileges embodied in international, regional, and national regulatory human rights mechanisms are a representation of EC rights, and Namibia is a signatory to several treaties that protect the rights of women and adolescent girls, particularly their access to emergency contraception to reduce unwanted.

2.8.1 International regulatory landscape for emergency contraception

A number of international instruments and treaties promote universal access to health, including FP and ECs. The various liberties and privileges embodied in international regulatory human rights mechanisms represent EC rights such as The Cairo International Conference on the Population in 1994, the Bellagio Conference in Italy in 1995, International Consortium for Emergency Contraceptive (ICEC) in 1996, the European Consortium for Emergency Contraceptive (ECEC) which was launched in June 2021, and Africa Regional protocols on reproductive health. They are described as follows:

2.8.1.1 The Cairo international conference on the population for 1994

The Cairo International Population Conference affirmed women's and young girls' right to control the number and timing of pregnancies. As a result, women and young girls all over the world require access to contraception, including emergency contraception. The majority of the contraceptives were designed to be used before or during intercourse, while ECs can be used immediately following unprotected sexual intercourse (United Nations General Assembly, 1995b).

The agenda of the 1994 International Conference on Population and Development (ICPD) calls for the respect of individual rights, including FP and EC choice. Similarly, it calls for accurate FP service information, including EC, in order to achieve the highest possible

level of sexual and reproductive health (United Nations General Assembly, 1995a). At the same time, Article 6 of the International Covenant on Civil and Political Rights (ICCPR) calls for the implementation of maternal mortality prevention measures, recognizing how it violates the right to life (United Nations General Assembly, 1995a). Similarly, in Articles 12, 14 and 16, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) promotes FP provision, including EC, by urging signatories to ensure access to health care and FP services, including EC services, as well as outlining the need for the necessary services about pregnancy prevention and the right to reproductive choices. Similarly, Article 12 of the International Covenant on Economic, Social, and Cultural Rights (ICESCR) promotes the right to the best possible health, which includes the provision of FP and EC (United Nations General Assembly, 1995a). Adolescents' rights to FP, including EC, are covered by Article 24 of the Convention on the Rights of the Child (CRC), which calls for commitments to ensure that adolescents achieve the highest standard of health. It recognises the sexual and reproductive health needs of adolescents, including easy access to FP and EC services. Access to FP, including EC-related information, is critical for involving adolescents in decision-making on issues that are important to them (United Nations General Assembly, 1995a). These treaties reflect a collective commitment to securing and maintaining sexual reproductive health, including FP and EC, on the global development agenda for all individual countries. These treaties reflect a collective commitment to securing and maintaining sexual reproductive health, including FP and EC, on the global development agenda for all individual countries

2.8.1.2 The Bellagio conferences

The Rockefeller Foundation convened the Bellagio conference in Italy in 1995, which revealed that emergency contraception had the potential to reduce the number of unwanted pregnancies in the developing world. As a result, seven international FP organizations, including WHO and the International Parenthood Federation (IPPF), formed the Consortium for EC to build partnerships in developing countries and promote emergency contraception (ECP) (Consensus Statement on Emergency Contraception, 1995).

2.8.1.3 International consortium for emergency contraception (ICEC)

The International Consortium for Emergency Contraception (ICEC) was founded in 1996 by seven international organisations: The Concept Foundation, the International Planned Parenthood Federation (IPPF), the Pacific Institute for Women's Health, PATH, Pathfinder International, the Population Council, and the World Health Organization's (WHO) Special Programme of Research, Development, and Research Training in Human Reproduction (Berger, 2018). The International Consortium for Emergency Contraception's (ICEC) mission is to increase access to ECs with a focus on developing countries. It now brings together dozens of organizations and thousands of individuals who support its mission. Despite more than two decades of efforts to increase access to ECs, remains out of reach for many women, including adolescents. The Consortium produced guidelines for the first time in 2000, based on guidelines developed by

Pathfinder, PATH, and IPPF. The policies were updated in 2004 and 2012. A new update was required due to recent changes in accessibility and new research findings in emergency contraception. The Consortium developed this medical and service delivery guidance on oral emergency contraceptive pills to help FP programs and providers ensure that the women they serve, including adolescents, can use these regimens effectively and safely (Berger, 2018).

2.8.1.4 The European Consortium for emergency contraception

The European Consortium for Emergency Contraception (ECEC) was established in June 2021 at the European Society of Contraceptive and Reproductive Health's Congress. The reasons for the launch included discussing access to ECs across the region, discuss current ECs changes that lead to inequitable access to reliable ECs options, expand EC access globally by focusing on the developing world, and develop a regional platform to serve as an authoritative source of information and a voice for more equitable access to ECs in Europe. Its mission is to increase awareness of and access to ECs in European countries, as well as to promote ECs delivery in the European context to ensure equitable access throughout the region (Sorano et al., 2021).

2.8.1.5 Africa regional protocols on reproductive health

Similarly, regional commitments such as the Protocol to the African Charter on Human and People's Rights and the Rights of Women in Africa, also known as the Maputo

Protocol, which promotes FP, including ECs under Articles 5 and 14, which call for the abolition of harmful practices, particularly sexual violence and abuse, are important. Article 3 also calls for the protection of human dignity through the prevention of violence, particularly sexual violence (African Union Commission, 2003). Namibia is also a signatory to the SADC Gender and Development Protocol, which outlines reproductive health guidelines, including FP and EC commitments. As a result, Namibia established the National Gender Policy and National Health Policy Frameworks in response to several issues concerning adolescent sexual reproductive health rights (SRHR). Maternal health, adolescent pregnancy, reproductive autonomy, and the abolition of harmful cultural practices are examples of these (Namibia Ministry of Gender Equality and Child Welfare & (MGECW), 2010). Others include adolescent-friendly services, FP information, including ECs information, FP counselling, including ECs counselling, increasing parental involvement in FP, including ECs, and raising awareness of adolescent FP needs, including ECs (Namibia Ministry of Health and Social Services, 1995). Furthermore, the Government of the Republic of Namibia aligned itself to reflect the state's commitment to these international and regional treaties through which it is held accountable to protect and promote reproductive health rights through the constitution and enactment of various documents.

On the other hand, the state is held accountable through its laws and policies that criminalise and prohibit discrimination or action that may limit one's FP and EC rights.

In order to meet its commitments, the government must ensure that adequate budgetary and resource allocations are in place to effectively implement FP and ECs services, as

well as action plans that promote these rights (African Union Commission, 2003). The state must ensure that barriers to FP and EC services are reduced and that social norms and practices reflect respect for a person's FP and EC needs.

The Maputo Protocol's goals regarding FP and ECs rights were used to develop a set of targets. These targets have specific action plans that must be followed in order to promote and protect ECs rights. Progress in Sexual Reproductive Health (SRH), particularly in EC services, is monitored and evaluated through the collection of disaggregated data and the use of scorecards to provide data and statistics to measure the established targets. Signatories are required to submit periodic reports on the necessary legislative measures they have put in place and the progress they have made in realizing their citizens' SRHR (African Union Commission, 2003). The Ministry of Gender Equality and Child Welfare in Namibia is in charge of compiling progress reports and presenting them to Cabinet and Parliament (MOGEF, 2019).

2.8.2 Namibian policies and guidelines governing FP and emergence contraception

The following are some policies and guidelines that govern FP and EC in Namibia: The Reproductive Health Policy, the Gender Policy, the FP policy and FP guidelines. They are described as follows:

2.8.2.1 Reproductive Health Policy

The Reproductive Health Policy of the Ministry of Health and Social Services (MoHSS) is implemented at the national, regional, district, and clinic levels. A multi-sectoral approach, on the other hand, is used when other line ministries have a stake in its implementation to efficiently aid service delivery (Namibia Ministry of Health and Social Services, 2001). These include the Ministries of Basic Education, Sport, and Culture, Higher Education, Youth, and Employment Creation, Home Affairs, Foreign Affairs, Information and Broadcasting, and Gender Equality and Child Welfare. The goal of this policy is to promote and protect the health of individuals and families, including adolescents, by providing equitable, acceptable, accessible, and affordable reproductive health services, including access to ECs. The policy is guided by the ICPD reproductive health principles, which are recognised as a fundamental human right for all Namibians. It also encourages all Namibians to have equal and equitable access to reproductive health services, including ECs. Similarly, it recognises adolescents' rights to all sexual and reproductive health information, as well as access to quality adolescent-friendly services, and it calls on all stakeholders to provide non-biased, quality services with the necessary skills and knowledge to impact service delivery.

The establishment of such a policy demonstrates the government's commitment to the reproductive health agenda. As a result, Namibia should address the needs of adolescents as a critical group of the population with various sexual reproductive health needs that may be hampered due to structural and cultural impediments at various levels of the

policy's implementation phase. The policy is old, but it is still in use; therefore, it needs to be reviewed to reflect current reproductive health updates.

2.8.2.2 Gender policy

Namibia has implemented various revised versions of the National Gender Policy as a result of the Beijing Declaration and Platform for Action over the years. This was done to reaffirm the country's national commitments to issues concerning women and girls. According to the Namibia Ministry of Gender Equality and Child Welfare (MGECW), the policy reflects the government's commitment to providing safe and affordable reproductive health services, including FP and EC, to all Namibians, as well as to improving women's and girls' reproductive rights. The policy outlines several strategies, such as developing public awareness campaigns and increasing knowledge about sexual reproductive health, including FP and ECs MGECW, (2010). Furthermore, these policies are aligned with existing constitutional rights, such as Article 5, which protects fundamental rights and liberties for all, and Article 10, which promotes equality and freedom from discrimination (Namibia, 1990). The limitation is that the policy is old, but it is still in use, so it needs to be reviewed to reflect current gender issues.

2.8.2.3 Family planning policy

The Ministry of Health and Social Services implemented Namibia's national FP policy following independence in 1995. Family planning (FP), including emergency contraception, is emphasized as a human right in the policy. Every individual and couple have the right to choose how many children they want, when they want them, and at what intervals. The policy emphasises that health care providers should provide individuals and couples seeking FP, including EC services, with adequate information on the availability of contraceptive methods. The policy states that all people of reproductive age who are sexually active shall, on request, be provided with adequate information, education and counselling about reproductive health and FP, including ECs. All persons of reproductive age, regardless of age or marital status, shall be entitled to use contraceptive methods (including ECs) of their choice (Namibia Ministry of Health and Social Services, 1995). Since its inception in 1995 however, the policy has never been reviewed to consider new scientific information on contraceptive methods, including emergency contraception. The policy is old and yet still in use and as such, there is a need to review it to accommodate the current updates on FP, including ECs.

2.8.2.4 Family planning guideline

The FP guideline was first implemented in 2012 and was reviewed in 2019 to include the most recent family planning recommendations in the WHO's medical eligibilities for contraceptive use (WHO, 2018). The WHO medical eligibilities include selective practice

recommendations for contraceptive use (WHO, 2018), hormonal contraceptive eligibility for HIV-positive women, a guideline statement and FP, and a Global handbook for Providers (WHO, 2018). The national guidelines are intended for use by program managers, officers, and lower-level service providers in Namibia to guide primary health care providers on FP and EC service delivery. Conversely, the guideline provides information on short-acting contraceptives, including ECs, long-term reversible contraceptives and permanent contraceptive methods. In addition, the guideline provides information on FP and EC counselling and provision to special groups such as adolescents, young people, postpartum and post-abortion clients, clients with disabilities and clients with STI and HIV (Ministry of Health and Social Services, 2019).

2.8.2.5 Health Professions Council of Namibia (HPCN)

As an umbrella body, the Health Professions Council of Namibia (HPCN) has various legislations on health professionals such as the Code of Conduct, Nursing Act and regulations relating to the scope of practice of nurses and enrolled nurses (Government Gazette No 3249, Notice 153 of 2004 as amended by Act No 6703 of 2018)), legislation on the Medical and Dental Act and regulations that regulate the scope of practice of Medical and Dental Practitioners (Government Gazette No 3249, Notice 153 of 2004 as amended by Act (Government Gazette No. 6249, Notice No. 35 of 2017).

Registered nurses, enrolled nurses, and medical practitioners are governed by the HPCN legislation. The aforementioned regulations ensure that health personnel conduct their

work in a professional manner. The goal is to create an environment that includes legal and ethical framework policies in order to provide recipients with actual information about service delivery in context.

2.9 HISTORICAL BACKGROUND OF FAMILY PLANNING IN NAMIBIA

The history of FP in Namibia is closely linked to the country's socio-political history. Modern contraceptives were officially introduced in the country in the early 1970s by the colonial government. However, because the health services were fragmented, there was no coordination of services for FP and no national policy. FP services were gradually expanded in the clinics, especially after training professionals and sub-professional nurses in 1979. The services were more available in the southern and central regions and to a lesser extent in the northern regions. The types of contraceptives that were available initially were oral contraceptives and injectables, such as Depo Provera. Generally, contraceptive acceptance and utilisation were low (Ministry of Health and Social Services, 2019).

Factors influencing acceptance or non-acceptance of FP include: colonial dominance, which instilled mistrust between service providers and consumers; the protracted liberation war, which prompted the majority of Namibians in the northern part of the country not to accept and use modern contraceptives; there were those who felt that they could not accept and

use modern contraceptive because there is a need to increase the population due to many lives lost during the liberation war (Ministry of Health and Social Services, 2019). Religious beliefs that discouraged the use of contraception for moral reasons; and FP services were prohibited in most church facilities. While most churches are not opposed to FP, the Catholic Church, in particular, is opposed to the use of modern contraceptive methods. Instead, they advocate for the use of natural methods of avoiding pregnancy.

There are also some myths, misconceptions, and negative attitudes among some men regarding the use of contraception. Some men, for example, think they will become impotent if their wives use contraceptives. Others believe that their wives will become unfaithful if they use contraceptives. In addition, some people believe that contraceptives cause sterility and cancer and put women's lives in danger. These fears could emanate from misinformation or lack of information about contraceptives.

Moreover, preferences for larger families is a common observation in the communities in that some families tend to have children ranging from 5 to 14. One more challenge is the imposition of certain modern FP methods on clients without proper consultation and counselling. Injections, for example, were administered to women and teenagers without their knowledge. In addition, health care workers did not provide clients with enough information on the advantages and disadvantages of various contraceptive methods. Consequently, Ministry of Health and Social Services (2019) argues that clients could not select the methods that would suit them best.

Some service providers' negative attitudes also discourage potential clients from seeking FP services. The reasons behind this attitude are the lack of information or their religious belief. A limited range of contraceptives is available in clinics and healthcare facilities. In most cases, the common variable contraceptives were the pills and the injectables. This, in turn, limits the choices that the clients can make. In addition, the other challenge is that the lack of FP policies and service guidelines. As a result, there have been some misuse and abuse of contraceptives, especially injectables. Depo Provera, for example, has been given to women indiscriminately, causing widespread concern and anxiety among the general public. Furthermore, the public has been discouraged from using the service due to long distances between the community and health care facilities (Ministry of Health and Social Services, 2019).

Following independence, the Ministry of Health and Social Services acted to correct the situation. The Maternal and Child Health and FP Programme was established in 1991 to improve the health of women and children. Despite the fact that FP services were still underdeveloped and underutilized, several activities were undertaken to address some of the major issues, such as the implementation of the FP Policy, the development of the Maternal and Child Health and FP Service Guideline for health workers, and the provision of maternal and child health and FP equipment (Ministry of Health and Social Services, 2019)

2.9.1 The current status of FP services in Namibia

Although FP services are available, they are frequently underutilised. According to the most recent Namibian demographic and health survey, conducted in 2013, nearly all Namibian women aged 15 to 49 are familiar with at least one modern method of FP (The Namibia Ministry of Health and Social FP services - MOHSS - and ICF International et al., 2014). More than half of women of reproductive age have used modern contraception at some point. Contraception use is higher in cities (56%) than in rural areas (43%). Traditional methods are more prevalent in rural areas than in urban areas. This could be due to accessibility and availability issues rather than preferences. The NDHS also showed that contraceptive usage is higher in Karas (60%) and lowest in Omusati and Ohangwena regions (37% and 39%, respectively). This implies that the low contraceptive prevalence in the Ohangwena region could be one of the factors contributing to the region's high rate of adolescent pregnancy (The Namibia Ministry of Health and Social Services - MOHSS - and ICF International et al., 2014). Injection (21% and male condoms (19%) are the most popular methods among both urban and rural women, while traditional methods are less popular (0.5%). Meanwhile traditional methods are still used in the Namibian community, one could assume that this could pose a challenge in terms of providing western FP methods. The government is the primary source of FP (73%), with PHC facilities accounting for 57% of FP services (The Namibia Ministry of Health and Social Services - MOHSS - and ICF International et al., 2014).

2.10 FAMILY PLANNING METHODS AVAILABLE IN NAMIBIA

In Namibia, FP methods are broadly classified as traditional, natural, and modern. The most commonly practised traditional methods are abstinence, withdrawal, herbs and other substances. The natural methods include breastfeeding, calendar rhythms, cervical mucous and body temperature. The modern contraceptive method includes oral contraceptives (the pills), injectable contraceptives, intra-Uterine Contraceptive Devices (IUCDs), the barriers methods (condoms for males and females), voluntary surgical sterilisation and ECs.

There are several methods of contraceptives available in Namibia. The two most common types of contraceptives are: the “oral hormonal” contraceptive pills, and the “non-hormonal” contraceptive device called the Intrauterine Contraceptive device (IUCD)(Ministry of health and Social Services, 2019). The combined oral contraceptives (COCs), the progestin only pill, and emergency contraception are the three hormonal oral contraceptives.

Oralco-p, Nordete, and Triphasil are combined oral contraceptive pills (COCs) that contain low doses of progestin and estrogen. COCs primarily work by preventing egg release from the ovaries. COCs available in Namibian public health care facilities include: 150mcg levonorgestrel plus 30mcg ethinyl estradiol, Triphasil oral tablets containing 75mcg levonorgestrel plus 40mcg ethinyl estradiol, and 500mcg Norgestrel plus 50mcg ethinyl estradiol (Ovral tablets) (Ministry of health and Social services, 2019).

In addition, there are several methods of emergency contraception available in Namibia. Progestin-only pills (POPs) contain very low doses of progestin but no oestrogen. The progestin works primarily by thickening cervical mucus (which prevents sperm from meeting an egg) and by disrupting the menstrual cycle, including preventing egg release from the ovaries (ovulation). Micro-Novum oral tablets containing 2.5 to 10mg POPs are available at public health care facilities in Namibia (Ministry of health and Social services, 2019).

Similarly, in terms of emergency contraception, Namibia has a variety of ECs available methods. The two most common types of ECs are: the hormonal contraceptive pills which are called emergency contraceptive pills (ECPs), and the non-hormonal contraceptive called the Intrauterine Contraceptive device (IUCD). Hormonal EC pill contains high levels of hormones found in basic oral hormonal contraceptives (Ministry of health and Social services, 2019).

The two hormonal ECs include the combined oral contraceptives and the specific emergency oral contraceptive. The combined oral contraceptives are administered in two doses for example: OVRAL oral tablets which contains norgestrel 500mcg plus ethinyl estradiol 50mcg; Nordete oral tablets, each contains levonorgester150mcg plus ethinyl estradiol 30mcg; Triphasil oral tablets which contains 0,075mcg Levonorgestrel plus 0.04mcg ethinyl estradiol or Triphasil which contains 0.125mcg Levonorgestrel 0.03mcg or100mcg Ethinyl Estradiol and 1mg Levonorgestrel.

All combined emergency oral contraceptives are administered in two doses, 12 hours apart, within 72 to 120 hours of the unprotected sexual encounter.

There are two types of ECs that are specifically designed for ECs use. There are two doses of Levonorgestrel (LGN) 0.75 mg tablets and Ulipristal acetate (UPA), which contains progesterone and an oestrogen derivative. These specific EC is administered as a single dose of 1.5 mcg Levonorgestrel (LGN) or two doses of 0.75 mcg Levonorgestrel (LGN) tablets. Ulipristal acetate (UPA) 30mg can also be given in a single dose (Ministry of health and Social services, 2019).

Health care workers must be aware of and understand the various types of emergency contraceptive regimens, their hormonal content, and the number of doses to be administered. When used correctly, emergency contraceptive pills (ECPs) can reduce the risk of unintended pregnancy by 75% to 99% if taken within 72 hours of sexual intercourse (Mishore et al., 2019). EC should be used only in an emergency and not as a regular method of contraception because they come in high doses and are only intended as a backup method, not as a long-term contraceptive (Cwiak et al., 2016). On the other hand, Moscou (2016) avers that the ECs are both safe and effective at preventing pregnancy, but they do not protect against sexually transmitted infections.

2.10.1 Emergency contraceptive methods which are available in Namibia

There are several methods of ECs are available in Namibia. The two common and significant types of EC methods are the hormonal oral emergency contraceptive and the non-hormonal emergency contraceptive. The “hormonal emergency” contraceptives are emergency contraceptive pills (ECPs), and THE non-hormonal emergency contraceptive

method is the copper-bearing, intrauterine devices (CIUD). The most commonly used hormonal oral ECs are levonorgestrel (LNG) pills, and ulipristal acetate (UPA) (Shen et al., 2019). These methods are described below:

2.10.1.1 Non-hormonal emergency contraceptive method

There is one method of non-hormonal emergency method. The common types of non-hormonal emergency contraceptive method include the intrauterine device. This method is described below.

Intrauterine devices (IUD)

This is a small, plastic, and flexible T-shaped device with a vertical stem that slowly releases copper into the uterine cavity. The most effective form of EC is intra-uterine devices, which are implanted within five days of unprotected sexual intercourse. A trained provider should insert the device into the uterine cavity. If the time of ovulation can be estimated, a Cu-IUD can be inserted after five days of unprotected intercourse as long as it is not more than five days after ovulation (WHO, 2018). The copper IUD and the levonorgestrel IUD are the two types of IUDs, and the copper IUD is both safe and effective. However, there is no evidence on the efficacy or safety of hormonal intrauterine devices as an EC (WHO, 2018).

Insertion of the IUD

The pregnancy rate after unprotected sexual contact and the insertion of an IUD is less than 0.1%. (WHO, 2018). The copper IUD works primarily by preventing fertilisation through a local chemical reaction that damages the sperm before it can meet the egg; thus, they are ineffective after fertilisation has occurred.

Furthermore, after insertion, the device can provide up to 12 years of ongoing contraceptive protection, or a woman may choose to switch to another contraceptive method (Shen et al., 2019). The copper IUD, on the other hand, is associated with an increased risk of menstrual cramping, heavy bleeding, irregular menstruation, anaemia, back pain, and fainting immediately after flowing insertion. In addition, patients may experience discomfort during the insertion process.

The advantage thus is that once implanted, women can use it as an ongoing method of contraception for up to 12 years before switching to another contraceptive method (Shen et al., 2019). It is, however, not recommended for pregnant women or women who have current PID, sexually transmitted infections (STI), puerperal sepsis, unexplained vaginal bleeding, cervical cancer, or severe thrombocytopenia. Finally, sexual assault victims should be tested for sexually transmitted infections before the insertion of IUD.

2.10.1.2 Hormonal emergency contraceptive pills (ECPs)

There are several hormonal oral emergency contraceptive pill methods. Levonorgestrel (LNG) pills and ulipristal acetate (UPA) pills are the two most common types of hormonal oral EC pills (Shen et al., 2019). These methods are as follows:

Levonorgestrel

Levonorgestrel (LGN) is a progestin that has been used for over 50 years in contraception (The Ministry of Health and Social Services, Namibia, 2019). There are two type of levonorgestrel pills: 'levonorgestrel 1,5 mg' single dose pills and 'levonorgestrel 0.75 mg' two dose pills. The World Health Organisation (WHO) states that LGN emergency contraceptive pills can be used for up to 120 hours, or five days after an unprotected sexual encounter, but they should be used as soon as possible (WHO, 2018). However, according to Michie and Cameron's (2020) study, LGN is infective after 96 hours. Levonorgestrel works by inhibiting or delaying ovulation.

Because ovulation is delayed, no fertilisation occurs, so levonorgestrel ECPs have no effect on sperm function, embryo viability, or endometrium receptivity. As a result, as an emergency contraceptive, levonorgestrel does not cause abortion. It is thought to be ineffective after ovulation or fertilization has occurred. If the woman is already pregnant, they have no negative effects on the pregnancy. The effectiveness of levonorgestrel EC products in preventing pregnancy is up to 89% (Ministry of Health and Social Services,

Namibia, 2019). Levonorgestrel EC pills are ineffective once the implantation process has begun, and they will not cause abortion.

Levonorgestrel can be given regardless of the ovulation cycle's timing, and it does not require a physical exam, a laboratory test, or a pregnancy test. In cases of rape or sexual assault, providers should also provide counselling regarding an ongoing contraceptive plan for the client, as well as a physical and psychological assessment. The provider should also be sensitive to women who are emotionally affected and are not ready to talk. If a patient vomits within three hours of receiving LNG, the patient should immediately take the second dose or begin using ongoing contraception methods (The Ministry of Health and Social Services, Namibia, 2019).

EC such as barbiturate, bosentan, carbamazepine, felbamate, griseofulvin, oxcarbazepine, phenytoin, rifampicin, and specific anti-retroviral (ARV) medicines may reduce the efficacy of LNG. As a result, a double dose of LNG is advised (The Ministry of Health and Social Services, Namibia, 2019). LNG has been linked to nausea, vomiting, abdominal pain, fatigue, dizziness, headaches, and breast tenderness. These symptoms, however, go away within 24 hours of taking the pills.

Ulipristal acetate (UPA)

Ulipristal acetate, also known as Ella, is a progesterone receptor modulator contraceptive pill explicitly made for emergency use. It was introduced as an alternative to the LGN

emergency contraceptive pills (The Ministry of Health and Social Services, Namibia, 2019). UPA is dosed with 30mg pill that is orally taken as a stat dose within 120 hours after unprotected sex. UPA is highly effective than LGN. Women who used UPA as an emergency contraceptive pill became pregnant at a rate of 1.4%, compared to 2.2% in the LGN group. If the emergency contraceptive was used within 24 hours of unprotected sexual intercourse, there was a 0.9% versus 2.3% difference in the UPA and LGN groups, respectively (The Ministry of Health and Social Services, Namibia, 2019).

Ella 's mechanism is similar to that of LNG in that it postpones follicular rupture by about five days, the lifespan of sperm in a female genital reproductive tract, thereby inhibiting ovulation (WHO, 2018). In addition to inhibiting ovulation, UPA causes hormonal changes, specifically a decrease in luteinizing hormone levels and an increase in menstrual cycle length. In order to be effective, it must be administered prior to ovulation. Clients who want to start using long-term contraception should wait five days after using UPA. UPA is generally well tolerated. However, UPA is associated with some side effects such as delayed menstruation, headache, dysmenorrhea, nausea, fatigue, dizziness, abdominal pain, and back pain (The Ministry of Health and Social Services, Namibia, 2019; Global, 2018).

Yuzpe regimen

Until LNG-only pills were introduced, a high dose of combined hormonal pills (the Yuzpe method) was commonly used, and it is still used in situations where no other options are available. This consists of two doses of 0.1 mg Ethinyl estradiol and 0.5 mg LNG or 100ug

Ethinyl estradiol and 1mg norgestrel given 12 hours apart, followed by a repeat dose 12 hours later. It is effective for up to five days, but its efficacy gradually declines, resulting in more side effects than LNG-only EC (The Ministry of Health and Social Services, Namibia, 2019). It works by either preventing or postponing ovulation. It is the least effective of all EC methods (The Ministry of Health and Social Services, Namibia, 2019).

2.10.2 Target groups for emergency contraceptives

Women of reproductive age as well as youths and adolescents, are the target demographic for emergency contraception. Although ECs are important for adolescents, they may encounter difficulties. For example, they may have been unprepared for sex due to a lack of comprehensive sexuality education, or access to ECs may be restricted, making it more difficult for them to use the methods correctly; they may find it more difficult to negotiate EC use with a partner. Based on the findings and statistics of unwanted pregnancy discussed in this study, there is, however, no medical necessity for an ‘age threshold’; adolescents should be able to obtain ECs when needed. Adolescents may use IUDs for EC and emergency contraceptive pills (ECPs). The use of an IUD is advised for adolescents and nulliparous women and if the rape occurred less than five days prior, ECs should be provided (Ministry of Health and Social Services, 2019).

2.10.3 Beneficial effects of emergency contraceptive

The importance of FP, including ECs, in improving adolescent girls' sexual health and quality of life is recognized worldwide, including in Namibia (Taapopi, 2016). Namibia experienced major changes in all sectors shortly after independence, with many being drastically restructured to meet the challenges of the post-apartheid era (Taapopi, 2016). Concerning emergency contraception, Van Look et al. (2016) states that the Planned Parenthood Organization (PPO) which provides guidance to healthcare providers in regards to reproductive health including FP agrees in the event of an unexpected sexual encounter, contraceptive failure, or sexual assault, that it is critical to give women and adolescent girls a second chance to avoid unwanted pregnancy.

EC can also be used in situations where no contraception was used, such as rape or coerced sex or condom breakage. Similarly, according to Oyekunle (2015), emergency contraception is a safe, effective, and relatively inexpensive method of preventing unplanned pregnancies following an unplanned or unprotected sexual encounter. The authors recommend emergency contraception, particularly for adolescents and young girls, due to their earlier and often unplanned initiation into sexual activities. The use of emergency contraception in adolescence is especially appropriate because adolescents frequently engage in sporadic and infrequent sexual encounters that pose a serious threat to their sexual health. This assertion is consistent with Indongo's (2007) study on contraceptive use among young women in Namibia, which concluded that young women in Namibia engage in casual sexual encounters without thinking about the risks involved.

2.10.4 Untoward effects of emergency contraceptives

There have been documented adverse effects associated with emergency contraception. Delayed menstruation, headache, dysmenorrhea, nausea, fatigue, dizziness, abdominal pain, and back pain are some of the symptoms. Additionally, vomiting, breast tenderness, and heavier menstrual bleeding have all been reported. Similarly, emergency contraceptive pills, regardless of type, appear to be much less effective for obese women. Women with a BMI of 30 or higher became pregnant more than three times as often as non-obese women in clinical trials using ECPs (Kosumen et al., 2017). As a result, doctors advise obese women to use traditional FP methods rather than EC. For overweight or obese women, ulipristal acetate (Ella) may be more effective than ECPs containing Levonorgestrel. Even though ECs are used for limited period of time within 72 hours to 120 hours, it, like regular oral contraceptives, carries the risk of stroke, heart disease, blood clots, and other cardiovascular problems like regular oral contraceptives. However, most of these side effects subside within 24 hours of the administration of ECs while for others the processes are repeated. For instance, if a client vomits within three hours of administering LNG, the client is given a second dose or immediately starts with an ongoing contraceptive method.

2.10.5 Accessibility of emergency contraceptives in Namibia

Emergency contraceptives (ECs) are available in all public and private health facilities in Namibia. However, there is limited information on why there is a low uptake of EC

services in the country by adolescent girls and adult women. One could argue thus that the awareness regarding the ECs availability is limited. However, according to the most recent NDHS data, the majority of Namibian females are between the ages of 15 and 19. (MoHSS, 2014). Even so, only 24.5% of young adolescent girls use contraception, while the remaining 75.5% do not. This would imply that their FP needs, including ECs needs, are largely unmet, and according to the Ministry of Health and Social Services (2014), there is a correlation between levels of education, social class, and age as determinants of using FP in Namibia.

MoHSS (2014) asserts that the NDHS report confirmed that contraceptive use among girls with little or no education was 33%, while it was 58% among those with secondary education. Similarly, 39.6% of young girls in the lowest wealth bracket used contraception less frequently, while 53.7% of young girls in the highest wealth bracket used contraception. As a result, it can be argued that girls from lower-income households may have less access to FP services than their peers from higher-income households, and women in the highest wealth bracket are more likely to use FP methods than women in lower-income brackets.

In contrast, the 2014 NDHS survey focused on the contraceptive prevalence rate among the female population aged 15 to 19 and ignored the ECs prevalence rate among adolescent girls aged 10 to 19, despite the fact that this is the most high-risk group for unintended pregnancies. As a result, it is critical to assess PHC providers' knowledge, attitude, and practice regarding the management of EC among adolescents in order to

understand the factors influencing their uptake or a lack of EC services in the Ohangwena region.

2.10.6 Barriers to access emergency contraceptives in Namibia

In Namibia, there is limited information on the barriers to accessing ECs. However, research studies done in other countries such as Zambia, the Democratic Republic of Congo, Kenya and Ghana evidenced that the common barriers to the accessibility of EC services by adolescent girls include misconceptions about ECs, lack of confidentiality by healthcare providers, practice barriers, rude primary healthcare providers, lack of information, cost of EC, lack of knowledge on the appropriate use of EC and stock-outs (Haeger et al., 2018).

There are myths and misconceptions about ECs that act as barriers among adolescent girls. Firstly, they believe that ECs are abortifacient medicine (Haeger et al., 2018). Homogeneously, adolescents also believe that they don't need ECs once they use regular contraceptives. However, there are several reasons why an individual using regular contraceptives might need ECs; for example, if a condom breaks, a girl forgets to take her regular contraceptives on a consistent basis, or an IUD is misplaced, ECs would act as a preventative measure for unintended pregnancies. But, Seetharaman et al. (2016) informs that adolescents have identified lack of confidentiality and healthcare providers' moral and religious beliefs as major barriers to using EC services. For example, they allege that when they go to health centres, news spreads within the community regarding their visit. Similarly, Haeger et al., (2018) avers that it has been claimed that healthcare providers are

inconsistent with the information they give, especially to adolescents and teenagers, at times health care providers refuse to prescribe ECs because their religion forbids them from using FP methods.

Practice barriers are considered significant barriers to accessing EC services by adolescents these includes the negative attitudes of healthcare providers (Asut et al., 2018). Contrary, Jonas et al. (2019) states that adolescent-friendly health centre operating hours and youth-friendly healthcare providers are believed to encourage adolescent girls to utilise EC services.

Other recognised barriers include the fact that ECs can only be accessed if there is a prescription from a healthcare provider, as well as the fact that a trained health worker must insert some methods like IUDs and clients cannot do this within the confines of their homes (Haeger et al., 2018). Yet, some healthcare providers are reluctant to prescribe ECs to adolescents because their religion forbids them. Studies have also revealed that consumers cannot request ECs through the phone in this electronic era, which is a big barrier. Indeed, research has shown that adolescents with internet access at school and or home as opposed to those without, are more likely to use ECs because they are more likely capable of searching for the right information regarding ECs and where get them.

Veritably, the ECs stock-out is another barrier because public healthcare providers choose not to request for the supply due to low consumer demand, thus disadvantaging interested clients. Yet ECs are expensive in private pharmacies, and they cannot be dispensed without a prescription. Strict parents and guardians and peer influence have also been

established to be a barrier to ECs uptake. Adolescents who have strict parents or guardians report a lower rate of EC use, and by extension, they will influence their peers not to use ECs as well (Seetharaman et al., 2016).

Closely, lack of knowledge ranks high as a barrier to accessing EC services. Clients are often not well informed about the availability of ECs. A study done in Namibia found out that awareness about ECs was lower among adolescents, women of colour, poor women without medical aid, immigrants and rural residents (Taapopi, 2016). The same study revealed that adolescents lacked knowledge of age restrictions, parental consent, available methods, side effects, and effectiveness. Conversely, it's not only clients that lack knowledge about ECs but disturbingly some healthcare workers as well (Haeger et al., 2018). Old school healthcare workers are not well informed on the availability of new innovations and are not well equipped to offer counselling to clients who want to use EC services. Hernandez et al. (2018) discovered that healthcare providers in the Democratic Republic of the Congo were unaware of the time frame and side effects of EC methods.

Additionally, financial barriers are also reported to hinder access to EC services. For instance, in huge but sparsely populated countries like Namibia, where the majority of health services are located far away from the rural communities, this necessitates clients to incur transport costs in order to access the nearest health centre. As a result, those who endure financial difficulties (lack of funds/vehicles/transportation) will not go to the health centre. It has been discovered that adolescents living in rural areas are less likely to visit a health centre because they cannot afford transportation costs. Coker (2017) avers

that due to a lack of funds, adolescents living in rural areas are unable to travel to health care facilities to access EC services.

2.10.7 Mitigating approaches to ease access to emergency contraceptive

To mitigate the impact of these challenges to increase access to EC services and prevent unwanted pregnancies, it is important to dispel myths, correct misconceptions and increase knowledge among health care providers and individuals of reproductive age at risk of unwanted pregnancies especially adolescents. To address confidentiality, health care professionals need to emphasise the issue of the code of conduct while executing their duties. Furthermore, there is a need for a comprehensive adolescent people focus education program that can assist in assessing ECs knowledge at the individual level, thereby making ECs readily available in a confidential manner. Similarly, making over-the-counter EC available without a prescription would help to reduce the barriers to EC.

Creating an awareness programme at the school and community level involving different stakeholders to influence the cultural, and social norms, laws and policies that affect adolescents and young people's rights to FP access would be useful. In the same vein, there is a need for medical insurance to cover ECs and other reproductive health services. There is a need to increase language options or get an interpreter to improve the timeliness of access to ECs for those with language barriers. Outreach points for patients who are in rural areas to get timely access to ECs should be provided. Young women and mobile

populations should be made aware of the availability of ECs, and they should be able to obtain it in advance through the emergency department. Another way to promote ease of access to ECs is to establish an EC website that will be managed at the national level by the Ministry of Health and Social Services.

2.11 CONCEPTUAL FRAMEWORK FOR MANAGEMENT AND UTILISATION OF EC

According to the WHO (2016), there appear to be three types of variables associated with health care providers' provision of emergency contraception. The first category of variables is about clinical settings and client-provider relationships. These include: providing insufficient knowledge about ECs; adolescents unfriendly health care service; socio/cultural and religious factors; negative attitude of the providers; lack of confidentiality on the part of health care providers and misconceptions about EC.

The second category of variables relates to the management of health care facilities in terms of ECs and includes: inadequate training of health care providers, understaffing (workload), a shortage of EC medicine, providers with insufficient knowledge of ECs regulatory laws, and a lack of privacy at health care facilities.

The third category of variable is related to dependable-related variables relating to adolescents which include: the effects associated with not using ECs like unwanted pregnancies; risky abortions, school dropout and mortality. Additionally, lack of

awareness of EC services by the adolescents; lack of parent communication with adolescents about contraceptives or parent strictness about contraceptives or poor implementation of comprehensive sexual education at schools and financial inability to access EC services all influence adolescents' access to ECs negatively. Therefore, Chan et al. (2016) argues that the low uptake of ECs is a complex issue that may be hindered by a number of factors. Subsequently, it can be conceptualised that awareness/the lack thereof, influences EC uptake and outcomes. Often, adolescents would partake in EC services if they have an awareness of, have access to, and appreciate the prevention of unwanted pregnancy as an outcome from the uptake of EC services (Guimo, 2015).

This conceptualisation of the three categories of variables related to the provision of ECs by health care providers is relevant for conceptualising the findings of this study in chapter 5 within the framework of Dickoff et al. (1968)'s practice theory, with regard to: the context of the services for ECs (health care facilities); the recipients of the proposed educational programme (health care providers as managers of EC services); the challenges (KAP and factors which influence KAP of PHC providers regarding management of EC at health care facilities); the procedures (content of the educational health programme) and the researcher as an agent who develops an educational health programme to support PHC providers in management of ECs at health facilities. The interaction of the three categories of variables that are related to the provision of ECs by health care provider is displayed in the conceptual framework below

□

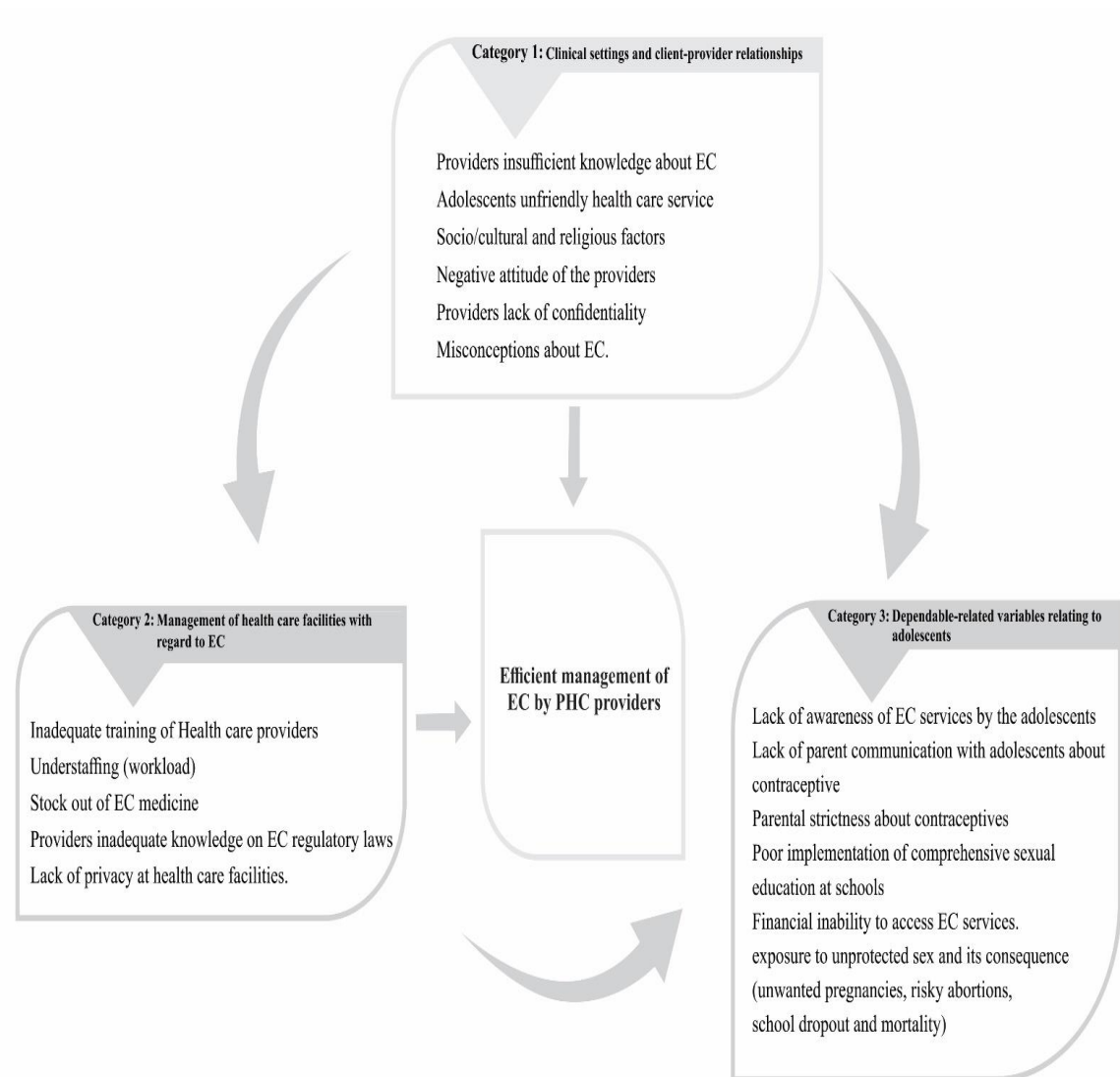


Figure 2.1 Conceptual Framework for management and utilisation of EC (Researcher).

The clinical setting and client providers related variable influence the efficient management of ECs by PHC providers and dependent variables related to adolescent ECs and its consequences. The clinical setting and client-providers (e.g. negative attitude of the providers) influence dependent variable relating to adolescents. Generally, adolescent perceived that unfriendly and judgment attitude of some health care providers discourage them from seeking ECs service from the health care facilities. Therefore, negative attitude of the providers is the key hindrance to adolescents EC access and EC services. The management of ECs by health facility (e.g. lack of privacy) also determine some of the dependent variables related to adolescents. Provider and client consultation are crucial in the implementation of sexual and reproductive health service. This should be done with the assurance of privacy and confidentiality of the information provided. Lack of privacy and confidentiality is a key barrier to adolescents' access to ECs and ECs service.

2.12 CHAPTER SUMMARY

The reviewed literature began with an overview of teenage pregnancies around the World, in Africa and in Namibia, as well as factors that are associated with the use of emergency contraceptive; health care providers' knowledge of, attitude towards and practice of ECs; the regulatory landscape regarding the approval and usage of emergency contraception services; emergency contraceptive methods available in Namibia; target groups for ECs; the beneficial effects of ECs; the untoward effects of ECs; accessibility of ECs in Namibia; the barriers to access ECs in Namibia as well as mitigating approaches were described .The foundation for a conceptual framework of this study was outlined. This

exploration guided the study about existing knowledge and knowledge gap with regard to services of ECs for the adolescents by health care providers.

CHAPTER THREE

RESEARCH APPROACH, DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The previous chapter reviewed the relevant literature for this study. The methodology used in this study is presented in this chapter. This chapter describes the study's approaches as well as the situational analysis in phase one. It also describes the research population, design, sampling, data collection process analysis, validity, and reliability. Furthermore, the methodology for the study's phases two, three, and four are discussed in depth. Finally, the ethical implications of the current study are discussed.

3.2 OVERVIEW OF METHODOLOGY

This study employed a quantitative research methodology; a method of investigating phenomena and their relationships that deals with numbers and anything measurable. This study employed a descriptive cross-sectional design and also utilised assessment approach. Furthermore, a quantitative research method according to Babbie (2020) produces more objective and reliable results and based on Brink et al., (2018) allows the researcher to collect objective and measurable data without manipulating independent variables. Therefore, the quantitative research method was appropriate in this study.

The researcher focused on the statistical parameters during data interpretation in this study. One of the study objectives was to determine the relationship between the

demographic data and knowledge, attitude and practice, thus this was a quantitative study aimed at determining the relationship between independent and dependent variables.

The researcher focused on the statistical parameters during data interpretation in this study. One of the study objectives was to determine the relationship between the demographic data and knowledge, attitude and practice. Thus, this was a quantitative study aimed at determining the relationship between independent and dependent variables. This study followed a quantitative research approach to address the first and second objectives. To achieve this, a questionnaire was developed to capture the PHC providers' knowledge, attitude and practice regarding the management of ECs in the Ohangwena Region.

3.3 PHASE 1: SITUATIONAL ANALYSIS

Situational analysis is the process of critically evaluating the internal and external conditions that affect service before considering new interventions or modifying existing ones (Neuman, 2020). It provides knowledge to identify current opportunities and challenges to the service or product, which aids in the development of a strategy to move forward from the current situation to the desired situation (Neuman, 2020). This phase addressed the study's first two objectives, as shown in *table 1.1*.

3.3.1 **Objective 1:** Assessment of the knowledge, attitude and practice of the PHC providers regarding the management of ECs for adolescents in Ohangwena region.

This objective was assessed through the quantitative paradigm using a self-administered questionnaire, which assessed the knowledge, attitude and practice of the PHC providers regarding the management of EC for adolescents.

3.3.1.1 Approach and design

The first and second objectives were addressed using a quantitative approach in this study. To that end, a questionnaire was created to assess PHC providers' knowledge, attitudes, and practices regarding ECs management in the Ohangwena region. A quantitative research approach enables the researcher to solve data reduction challenges by focusing on the common input and forsaking the unique variations through numerical data.

One of the study objectives in this study was to determine the relationship between demographic data and knowledge, attitude, and practice; thus, the study employed a quantitative approach because according to Babbie (2020) a quantitative approach can be used to determine the relationship between independent and dependent variables.

Descriptive cross-sectional study design:

A research design is a comprehensive plan or strategy outlining how a researcher intends to answer a research question or problem (Kumar, 2018). The descriptive cross-sectional study design was used in this study. Cross-sectional studies, according to Wang and Cheng (2020), are observational studies that collect data from a population at a single point in time.

A cross-sectional design was used in this study to collect data from participants at one point in time on PHC providers' knowledge, attitudes, and practices regarding the management of ECs for adolescents in the Ohangwena region. Data on all variables were collected simultaneously over a short period of time, from 14 January 2016 to 3 March 2016. The cross-sectional design was chosen because it saves time when collecting and describing data about EC management by PHC providers at the study site.

Analytical study designs, according to Creswell and Creswell (2018b), are used to investigate the nature of relationships or associations between and among variables, rather than straightforward cause-and-effect correlations. The analytical design is used to see if changes in one variable are connected to changes in another. Analytical designs based on Burns et al. (2018) analyse the direction, degree, magnitude, and strength of the relationships or associations.

The results from analytical studies provide the means for generating hypotheses to be tested in quasi experimental and experimental studies. Analytical studies describe the variables and the relationships that occur naturally between and among them, while a model testing analytical study would examine or pilot test, proposed relationships for a model or theory. The analytical design was crucial to the inferential analysis of quantitative data, which was used to address objective 2: To determine the factors associated with and knowledge, attitude, and practice of PHC providers.

3.3.1.2 Population

The population is the set or group of all the units to which the research findings will be applied (Wang & Cheng, 2020). In other words, the population is a collection of all the units with variable characteristics that are being studied and for which research findings can be generalised. The population for this study were the PHC providers in the Ohangwena region who are the providers of EC services to adolescents. PHC providers were selected because they are in a position to provide ECs to adolescents. The study was conducted at all public PHC facilities in Ohangwena region. According to the staff establishment for the Ohangwena Regional Health Report of 2015, there were a total of 125 PHC providers in the region's 28 PHC facilities, with 103 providing EC services at health care facilities and 22 not providing EC services at health care facilities. As a result, the study's population consisted of 103 PHC providers who provided EC services to adolescents. Five (5) PHC providers of EC services were piloted at Ongha Health Care Centre and five (5) at Eenhana Clinic, and, these were not included in the main study. As a result, the study population consisted of 93 PHC providers who provided EC services at health care facilities in the Ohangwena region.

Inclusion criteria:

The key characteristics of the target population that the investigators used to answer their research question are referred to as inclusion criteria (Brink et al., 2018).

- All PHC providers who provided FP and EC services to adolescents at PHC facilities in the Ohangwena Region.
- Primary healthcare providers who were from the Ohangwena region.

Exclusion criteria:

Exclusion criteria are characteristics of potential study participants who meet the inclusion criteria but have additional characteristics that could interfere with the study's success or increase their risk of an unfavourable outcome (Brink et al., 2018).

- All PHC providers who are not FP and EC service providers to adolescents at PHC facilities in the Ohangwena region.
- Primary healthcare providers who were not from the Ohangwena region.

3.3.1.3 Sampling and sample size

Sampling is the process of selecting cases to represent an entire population in order to draw conclusions about that population (Polit & Beck, 2021). To sample the districts, health care centres, clinics, and PHC providers, the researcher used the probability sampling method. Using a proportionate sampling method, the districts, health care centres, clinics, and PHC providers were sampled using a stratified multi-stage sampling method. Stratified-multistage sampling is based on grouping elements into strata, or subpopulations (Polit & Beck, 2021). The stratified multi-stage sampling technique is an effective method that combines stratified and multi-stage sampling techniques (Brink et al., 2018). A four-stage stratified multi-stage sampling procedure was used.

Stage 1: In the first stage, a list of all the districts' health care centres in the region was created, and each district was carefully chosen. Engela, Eenhana, and Okongo were the three (n=3) districts chosen.

Stage 2: The preceding exercise was repeated to sample the health care centres, and all three (n=3) health care centres were chosen on purpose. Odibo Health Care Centre, Endola Health Care Centre, and Ongha Health Care Centre were chosen as the three (n=3) health care centres.

Stage 3: The selection of clinics was repeated. A list of all the clinics was provided. All the clinics were purposively selected. The twenty-five (n=25) clinics selected were Okongo PHC, Omboloka Clinic, Olukula Clinic, Ekoka Clinic, Eenhana Clinic, Ongula Yanetanga Clinic, Epinga Clinic, Onangolo Clinic, Oshikunde Clinic, Onambutu Clinic, Epembe Clinic, Engela PHC Clinic, Omungwelume Clinic, Hamukoto wakapa Clinic, Ohangwena Clinic, Okatope Clinic, Edundja Clinic, Onekwaya Clinic, Ohalushu Clinic, Onamukalo Clinic, Ohaukelo Clinic, Okambebe Clinic, Ongenga Clinic, Eudafano Clinic and Ondobe Clinic.

Stage 4: The process was repeated to select the PHC providers. According to the staff establishment for Ohangwena Regional Health Report of 2015, there were a total number of (n=125) PHC providers in the region, (n= 28) primary health care facilities in the region, and 103 were providers of EC services at health care facilities, while (n=22) were not EC service providers in health care facilities. As a result, the study's target population

was (n=103) primary healthcare providers who provided EC services to adolescents. Five (n=5) PHC providers of EC services were piloted at Ongha health care centre, and five (n=5) were piloted at Eenhana clinic, but were not included in the main study. However, due to the small sample size discovered at the study site, no sampling was performed; thus, the entire population of (n=93) PHC providers who provided EC services at health care facilities in the Ohangwena Region was included in the study.

There was a 100% response rate (n=93) because all 93 participants returned the questionnaires. The high response rate was achieved by distributing study permission letters to all the PHC facilities to inform them about the study. All the “in charge” of the PHC facilities selected were also informed about the study by the PHC supervisors over the phone. There was also an announcement that was made about the study during the PHC meetings. A paper recording was also made available to the office of the PHC supervisors to register and give questionnaires to those who were not available during the data collection. The questionnaire of those who were not available on the date and time of data collection were given to their supervisors for them to fill them in and hand them back to the supervisors, who sent them back to the researcher. No participant declined to participate in the study. Table 3.1 below presents the districts, health centres, clinics and the number of PHC providers participating in the study at each health facility in the Ohangwena region.

Table 3.1 represents the sampled districts, health centres, clinics and the number of PHC providers participating in the study at each health facility in the Ohangwena Region.

Table 3. 1 The sampled districts, health centres, clinics and PHC providers

	PHC Centre	PHC Clinics	Number of PHC providers in the study at each health facility
Okongo District Health facilities		Okongo PHC	11
		Omboloka Clinic	2
		Olukula Clinic	1
		Ekoka Clinic	3
Eenhana District Health facilities		Eenhana Clinic	4
		Ongula Yanetanga Clinic	2
		Epinga Clinic	1
		Onangolo Clinic	1
		Oshikunde Clinic	1
		Onambutu Clinic	2
		Epembe Clinic	2
Engela District Health facilities	Odibo Health centre		2
	Endola Health Care Centre		2
	Ongha health Centre		5
		Engela PHC Clinic	15
		Omungwelume Clinic	2
		Hamukoto wakapa Clinic	3
		Ohangwena Clinic	3
		Okatope Clinic	2
		Edundja Clinic	2
		Onekwaya Clinic	3
		Ohalushu Clinic	1

		Onamukalo Clinic	1
		Ohaukelo Clinic	2
		Okambebe Clinic	3
		Ongenga Clinic	3
		Eudafano Clinic	2
		Ondobe Clinic	2
3	3	25	93

3.3.1.4 Instrument for data collection

To collect quantitative data, a self-administered questionnaire (Annexure F) was used. As a result, data on PHC providers' knowledge, attitudes, and practices regarding EC management were gathered using a structured self-administered questionnaire; it is quick and inexpensive to administer, provides anonymity and can gather facts and opinions from knowledgeable people about a particular issue and or phenomena. Similarly, the latter allows respondents to think about the answers since they complete the questionnaire in their own time. This research instrument (tool) was chosen because it was thought to be suitable for data collection. The following “open” and “closed-ended” questions were used in the four sections of the questionnaire as follows:

- **Section One:** The respondents’ demographic information such as: district; healthcare facility; age; marital status; religion; professional qualifications and work experience in FP and EC clinic (independent variables).
- **Section Two:** The data on the PHC providers’ knowledge of ECs, such as: ‘ever’ heard of ECs; methods of ECs; time for effective use of ECs; ECs' mechanism of

action; appropriate candidates for EC use; and indications for the use of ECs (dependent variable).

Section Three: Data on PHC providers' attitudes towards ECs. A *Likert scale* was used to assess their attitudes toward using ECs. They were asked whether they strongly agreed, agreed, strongly disagreed, or disagreed with the following statements: All primary healthcare providers should be aware of ECs and should be able to prescribe it when necessary. ECs should be easily accessible at all health facilities. Wider use of ECs are less costly than abortion and unwanted childbearing, ECs are safer for ECs use, ECs are less effective than regular contraceptives, providing ECs would not discourage the use of other contraceptive methods, the easy availability of ECs increases risky sexual behaviours, I would recommend ECs if I had a client who had unprotected sex during the unsafe period, ECs should be prescribed to both married and unmarried women, ECs are only used by commercial sex workers, giving ECs to adolescents promotes sexual promiscuity, telling sexually active adolescents to abstain from sex when they ask for contraceptives rather than giving them, adolescents should receive contraceptive counselling before becoming sexually active, adolescents do not need parental consent for contraceptive use, I have a fear of prescribing EC because of the possible side-effects, I do not prescribe ECs because of my religious beliefs and I do not prescribe ECs because of my cultural beliefs.

- **Section Four:** This included information on the EC practices of PHC providers. A series of questions were asked to assess the practice, including training in FP and emergency contraception, the availability of ECs at health facilities, the

prescribed EC methods, indications for prescribing ECs, the recommended regimen (pills identification, dose, and timing), and information given to clients, challenges encountered during ECs management, and solutions to problems (dependent variables).

3.3.1.4.1 Validity of the research instrument

Validity is defined as a test that determines how well a measuring instrument can do what it is supposed to measure (Creswell & Creswell, 2018b). The validity of the instrument must be ensured in a quantitative study. Content validity, face validity, and construct validity are all types of validity.

- Content validity

The assessment of the research instrument for data collection and whether the items in the instrument represent all of the components of the variables intended to be measured is known as content validity, and it considers the representativeness of the instrument's content (Brink et al., 2018). This type of validity testing is typically performed when creating a research instrument for data collection. The researcher ensured that the questionnaires fully represented the domain of knowledge, attitudes, and practices of PHC providers regarding the management of ECs for adolescents for this study. A rational analysis of the instrument by ratters (experts) familiar with the construct of interest or experts on the research subject is typically used to develop a content-valid instrument

(Brink et al., 2018). These experts assessed the readability, clarity, and comprehensiveness of a questionnaire's items to determine which items should be included in the final questionnaire. To establish content validity, the instrument in this study was built using information gleaned from a literature review search on PHC providers' knowledge, attitudes, and practices regarding EC services for adolescents (Ebuehi et al., 2006; Tshitenge et al., 2018) (*Refer to the literature review in Chapter 2*). To assess the relevance of the questions to the subjects, the researcher discussed and consulted with the study supervisors. The questionnaire was checked by the study supervisor and pilot tested, and the statistician coded it to improve the instrument's content validity. Items that did not fully agree were deleted, and the wording was changed.

- Face validity

The extent to which the set of items comprehensively covers the various components to be measured is referred to as face validity (Connell et al., 2018). Face validity was established in this study when an expert on the research subject reviewed and evaluated the questionnaire (instrument) and concluded that it measured the characteristics or traits of interest. The questionnaire in this study was reviewed for face validity by the researcher's two academic supervisors and a medical doctor who is an expert in reproductive health issues. They confirmed that the questionnaire measured or tested the desired characteristics or traits

- Construct validity

Construct validity assesses the relationship between the instrument and the related theory, articles, or journals, which is usually established over time by several people rather than the instrument's creator (Brink et al., 2018). The construct validity of this study was established by including an extensive literature review on health care providers' knowledge, attitude, and practice regarding emergency contraception for adolescents. The questionnaire was reviewed by two study supervisors and an expert senior researcher to determine the relationship between the instrument, related theories, and literatures.

Confirmatory factor analysis (CFA) was used in the study to determine construct validity. The CFA was used to test hypotheses about the factor structure of the three questionnaire sections dealing with knowledge, attitudes, and practices. The CFA method involved first reviewing the theories and purported links proposed in the literature, then using these links to interpret the factors that load together during factor analysis. Path analysis in SPSS AMOS version 23 was then performed, followed by a CFA model derived from the theory. The validity of the factors in the model from the questionnaire was tested using convergent validity.

3.3.1.4.2 Reliability of the research instrument

The repeatability of a developed research instrument is defined as reliability (Neuman, 2020). This means that if the same instrument is used in a different setting, it should produce the same result. The data in this study was refined several times to ensure

reliability. The questionnaire included simple, easy-to-understand instructions, and questions that could lead to misinterpretation were avoided. Before it was piloted, the questionnaire was constructed and finalised under the supervision of the two study supervisors and verified for completeness, consistency, accuracy, and reliability by a senior expert researcher. A pilot study was carried out at the Ongha Health Care Centre in the Engela district of Ohangwena. Section 3.7 discusses the findings of the pilot study process.

Cronbach's alpha, which is based on the average inter-item correlation, was used to assess the instrument's internal consistency (Connell et al., 2018). The reliability analysis was used to determine how well the items in the questionnaire were connected or related to one another. The Cronbach's alpha score provides an overall index of the scale's repeatability or internal consistency. The scale is considered reliable if the alpha value is greater than the recommended 0.7.

The procedure also included redefining and recoding variables in order to increase Cronbach's alpha reliability to the recommended value of greater than 0.7. Prior to the analysis, the dataset was also searched for missing values, and only parameters with missing values or poor-quality responses were removed. Outliers were also handled by changing the codes and scales and aggregating the variables to reduce extreme value outliers. Finally, after screening the data, the study used the SPSS version 26.0 missing value analysis (MVA) and Cronbach's alpha, if the item was deleted, to iteratively reduce the variables from 62 to 45 variables and the cases from 93 to 92, as shown in table 4.1 of

chapter 4. The Cronbach's alpha test result was 0.07, indicating an acceptable level of reliability. Items from Section 2 on knowledge, Section 3 on attitudes, and Section 1: Demographic variables such as district and age groups are among the variables.

3.3.1.5 Pilot study

A pilot study can be defined as a small study to test research protocols, data collection instruments, sample recruitment strategies, and other research techniques in preparation for a larger study (Neuman, 2020). A pilot study is one of the important stages in a research project and it is conducted to identify potential problem areas.

The questionnaire was piloted on 10 September 2015 on five (n=5) PHC providers of EC service to adolescents at the Ongha Healthcare Centre and five (n=5) PHC providers of EC services to adolescents at Eenhana clinic. The PHC providers of EC services were randomly selected and they were not included in the main study. The following were findings from the pilot study:

- In the consent form, the time allocated to the completion of the questionnaire was too long
- All the questions in the questionnaire were coded which was an error
- In section one, which covered demographic variables, there was a need to ask the respondents about their working years of experience in EC service since there were those who were new and had no experience in EC service.

- There was a need to ask the respondents if they had worked in a FP clinic before since there were PHC providers who had never worked in FP clinic where EC service was provided.
- In the knowledge section, there was a need to ask the respondents if they had ever heard of EC since there were PHC who had never heard of EC and they did not know about EC.

The changes were addressed in the questionnaire after the pilot study, and they are as follows:

- • The time allocated in the consent form was one hour and thirty minutes, which was changed to 45 minutes based on the time spent during the pilot testing. The questionnaire's questions were all coded, which was an error. This was corrected.
- One question was added to Section One, which covered demographic data. Question 6 asked respondents to state how long they had worked in EC services. It was reduced to two questions in the final questionnaire. 7th question: Have you ever worked in a FP clinic before? [Yes/No]. Question 8: If yes, for how many years did you work in a FP clinic?
- Section two added a question to test the PHC providers' knowledge. Question 9 asked the respondents if they had ever heard of EC before.

To obtain input, the questionnaire was also reviewed by PHC providers at the district level in the Oshana region, as well as the MoHSS in the Oshana region. All pilot study comments and corrections were incorporated into the final research instrument. In

addition, the expert in the field, a medical doctor, and the researcher's two academic supervisors reviewed the questionnaire to make judgments about the content validity and corrections were made. The same questionnaire was used in the main study to achieve the research objectives.

3.3.1.6 Data collection procedure

The researcher made appointments to visit three (n=3) PHC supervisors for the Engela, Eenhana and Okongo districts. Each appointment was on different days, as agreed upon by the three supervisors. The visits were intended to introduce the study, inform PHC supervisors about the study's purpose, and obtain approval for the study from the Permanent Secretary of the MoHSS and the Director of Health in the Ohangwena region. The supervisors then informed the persons in-charge of the clinics and health centres within their districts about the study. The researcher conducted field visits to the clinics and health centres where PHC providers were allocated and provided FP and ECs on a daily basis.

The sites for data collection are listed in *Table 3.1* on pages 7-8. Data were collected from 14 January 2016 to 3 March 2016. The researcher visited four to five clinics / health centres a day depending on the distance between the health facilities. A special room was prepared for data collection in each clinic or health centre. The purpose of the study and the research ethics principles were explained to the participants prior to the distribution of the questionnaire. The participants provided informed consent to the researcher. The questionnaire was distributed by the researcher. On the day the questionnaire was handed

to them, the PHC providers were asked to complete it privately in a separate room and were instructed to place their completed questionnaire in a sealed envelope and return it to the researcher the same day. The researcher checked each question for completeness and missing data before commencing with data analysis.

3.3.1.7 Study variables

The study consists of dependent variables and independent variables. They are described as follows:

3.3.1.7.1 Dependent variables

The independent variables are ‘knowledge’, ‘attitude’ and ‘practice’ of ECs.

Knowledge: Knowledge is possession of the information or having an understanding or skills obtained through experiences or education (Bedassa, 2019). In this study, knowledge on EC includes awareness of ECs, type of ECs, appropriate candidates for ECs, indications for ECs, correct time to use ECs, and therapeutic effect of ECs.; indications for ECs, correct time for using ECs and therapeutic effect of ECs. The respondents were requested to respond on the individual statement using “Yes” or “No”. The correct response was ticked and recorded. Thus, if the score is greater than 70% this was considered sufficient and good knowledge, while the score less than 70% was considered insufficient knowledge.

Attitude: Attitude refers to the study subject's opinions, outlooks, values, positions, and intentions regarding the use of EC methods (Bedassa, 2019). Respondents' attitudes toward various aspects of ECs were defined for this study. Respondents with concerns and negative opinions about ECs and negative responses to the attitude items were considered to have a negative attitude toward ECs, whereas those with a positive outlook and concerns about ECs and positive responses to the attitude questions were considered to have a positive attitude towards ECs. The attitude scores were calculated as a composite of 11 items using a five-point 'Likert scale' ranging from one for strongly disagree to five for fully agree.

The positive attitude of EC was measured from the study respondents' opinions about the need for all primary health care providers to have the knowledge of ECs; prescription of ECs by PHC providers; ECs; Access to ECs at every health facility; cost saving of ECs versus unwanted pregnancies and abortion and contraceptive counselling of adolescents.

The negative attitude was measured from the study respondents' responses to closed-ended questions about the use of ECs by commercial sex workers, influence of PHC provider's religious and cultural beliefs on prescription of ECs.

The misconception was determined by the study participants' responses to closed-ended questions about the perception that easy access to ECs encourages risky sexual behaviour, the concept of abstinence until marriage, and the fear of potential EC side effects.

Practice: The repeated performance or systematic exercise for acquiring a skill or proficiency is referred to as practice (Tegegne, 2019). For the purposes of this study on

the evaluation of EC practice, EC practice includes PHC providers' training in ECs, the availability of ECs at health care facilities, the prescription of EC, the methods of EC prescribed, knowledge about EC dosages, and the provision of correct information to clients about ECs. The respondents were requested to respond to individual statement using “Yes” or “No”. The responses were ticked and recorded. Thus, the correct response was ticked and recorded as Yes and wrong response was recorded as No. A score greater than 50% was considered good practice of EC, and a score less than 50% was considered poor practice of ECs.

3.3.1.7.2 Independent variables

The independent variables are age, marital status, religion, professional qualification and experiences with EC.

Age (in years): under 30 years;30 to 40 years; above 40years.

Marital status: single; divorced or widowed; cohabitate or married.

Religion: non-Lutheran and Lutheran.

Professional qualifications: Enrolled nurse/midwife, registered nurse/midwife and doctor.

Experience with EC: less than 1year;1 to 5 years;5 to 10 years and 10 years and above.

3.3.1.8 Data management

The researcher checked the questionnaires for completeness before the data were entered into the computer for analysis. The researcher checked and adjusted the collected

information to ensure consistency, omission, and legibility. Data were cleaned for accuracy and appropriateness. A questionnaire was entered into the computer using the statistical package (SPSS version 26 and IBM SPSS AMOS version 23). The process also involved redefining and recoding variables to improve Cronbach's alpha reliability to the recommended values of above 0.7.

The dataset was also searched for missing values using SPSS version 26.0 missing value analysis (MVA), and variables with missing values greater than 15% were removed. In addition, outliers were handled by changing the codes and scales and aggregating the variables to reduce extreme value outliers. After data screening, the study applied the SPSS version 26.0 missing value analysis (MVA) and the Cronbach's alpha if the item is deleted to iteratively reduce the variables from 62 to 45 variables and cases from 93 to 92. The description of the variables removed or modified are explained in detail under section 3.4.1.

3.3.1.9 Data analysis

The quantitative data analysis was divided into two stages, with descriptive and inferential analysis methods used in each. The Statistical package was used to perform descriptive and inferential statistics, as well as data presentation (IBM SPSS version 26 and IBM SPSS AMOS version 23). The preparation, processing, and screening of the data ensured that it was usable, reliable, and valid for statistical analysis.

Redefining and recoding variables was also required to improve Cronbach's alpha reliability to recommended values above 0.7. The dataset was also checked for missing values, and questionnaires with significant missing data or poor-quality responses were

removed before the analysis. Outliers were also handled by changing the codes and scales, as well as aggregating the variables, to reduce extreme value outliers. Following data screening, the SPSS version 26.0 missing value analysis (MVA) and Cronbach's alpha if the item was deleted were used to iteratively reduce the variables from 62 to 45 variables and cases from 93 to 92.

3.3.1.9.1 Descriptive data analysis

The process of turning raw data into information that can be used to describe a number of circumstances in a way that is simple to comprehend and interpret is known as descriptive analysis (Zikmund et al., n.d.). Descriptive statistical techniques were used to describe participant characteristics in terms of normality, shape, spread, and skewness in order to gain a broad appreciation and overview of the data collected and to provide guidelines for a more sophisticated statistical analysis. If the deviation from the normal distribution is sufficiently large, the statistical tests that result from it are deemed invalid (Vinzi, 2013). The fundamental assumption of multivariate analysis is normality; thus, the data must have a normal distribution and be related to one another. To gain a broad appreciation and overview of the data collected and to provide guidelines for a more sophisticated statistical analysis, descriptive statistical techniques were used to describe participant characteristics in terms of normality, shape, spread, and skewness. If the deviation from the normal distribution is sufficiently large, the statistical tests that result are deemed invalid (Vinzi, 2013). Because the fundamental presumption of multivariate analysis is normality, the data must have a normal distribution and be related to one another (Tabachnick & Fidell, 2007). The following descriptive statistics were used in the current study:

- The calculation of frequencies and percentages; These were expressed using tables
- The mean is a measure of central tendency. The mean, or arithmetic average, is calculated by dividing the sum of all individual scores in a distribution by the total number of scores.
- Determining the standard deviation (SD) of the measurements to determine how widely distributed the data are. The standard deviation (SD) calculated how far the scores in a distribution deviate from the mean score on average. A low SD is required for multivariate analysis because variables with a low SD indicate that most observations cluster around the mean, whereas variables with a high SD indicate significant variation in the responses.
- Descriptive statistics are standard output in both SPSS version 26 and SPSS AMOS version 23. The output results were exported to MS Excel 2019 where they were converted to tables that are presented in the results chapter under the four-sub sections relating to the questionnaire sections on the demographic profiles of the sample, as well as the item description of the knowledge, attitudes and practices which represent other sections of the questionnaire.

3.4 Objective number two: to determine the factors associated with knowledge, attitudes and practices of ECs.

A quantitative descriptive design was chosen for this study because one of the objectives was to identify factors associated with knowledge, attitudes, and practices. This was in

addition to developing a structural equation model (SEM) that served as the foundation for the design of an educational program to assist PHC providers with the management of ECs. Accordingly, the study used CFA/SEM analysis in SPSS AMOS version 23 to iteratively come up with a reliable and valid path diagram model of the associations between the demography, knowledge, attitudes, and practices. CFA was used in the study, which is a supervised method that incorporates prior knowledge from theory (Bandalos & Finney, 2018). Accordingly, the study adopted the CFA approach which was intentionally carried out using statistically significant factors and items. The researcher went through several iterations guided by Gaskin's (2017) procedure to arrive at a model with the recommended goodness of fit as recommended by Gaskin and Lim's (2016) model fit measures.

3.4.1 Variables to address objective number two

The independent variable, dependent variables and interdependent variables include the demographic data, including the age of the participants, their marital status, religion, professional qualifications, and their experience working with ECs while the dependent variables are such as knowledge, attitude and practice.

The self-administered close-ended questionnaires consisted of four sections and the items were screened to reduce the number of items as follows:

- I. Section B which covered statements on the awareness and knowledge of EC among the nurses, and the items included statements such as:
 - Have you ever heard of emergency contraceptive? (Sec2_9)
 - What emergency contraceptive do you know? (Sec2_10-a to f)

- Who are the appropriate candidates for ECs? (Sec2_13-a to g)
- Under what condition do you give ECs? (Sec2_14-a to f)

The section B scale had a total of 22 items statements, which were reduced to 20 items during screening due to the poor reliability of the scale, when it included the two items flagged in Table 4.1. These statements had mixed responses that were both negative and positive, thus affecting the scale's consistency. As a result, the following statements were transformed into the ordinal type variable for use in cross-tabulating the knowledge levels:

- What is the correct time for using emergency contraceptives (ECs)? (Sec2_11)
- How do emergency contraceptives (ECs) work? (Sec2_12)

- II. In Section C, the data processing and analysis saw the Section C scale reduced to 12 items that were flagged for poor consistency during the data cleaning exercise discussed in section 4.2.
- III. The Section D scale had a total of 11-items statements, and these statements had mixed responses that were both negative and positive, thus affecting the scale's consistency. As a result, the following statements were transformed into ordinal type variable for use in cross-tabulating the knowledge levels.

3.4.2 Factor analysis

Before testing the hypotheses, factor analysis was conducted to give the analysis statistical meaning. This reduced the number of variables, allowed for the detection of structure in the relationships between variables, and allowed for the identification of the underlying constructs that account for the variances (Obeidat et al., 2014). Additionally, factor

analysis was done to verify the reliability and validity of the questionnaire's constructs (Pallant, 2016.).

The foundation of Exploratory Factor Analysis (EFA) rests on three key assumptions, namely the 'absolute sample size', the 'coefficients in the correlation matrix', and the 'sampling sufficiency'. It's crucial to determine the variability in scores (variance) of the measures or variables being considered. A variable with no variance would have a communality of 1, while one that shares nothing with other variables would have a communality (Hair et al., 2013). Variables with communalities less than 0.2 are problematic and need to be removed (Gaskin, 2017). The study will use communality, which is an output of the SPSS EFA analysis and is calculated from factor loading in a multi-construct model, to evaluate the adequacy of extraction along with Eigen-values greater than 1 and the Scree plot.

The Principal Axis Factor (PAF) analysis was carried out to reduce the number of items and extract factors. This factor extraction method, available in SPSS, was used to identify the minimum number of variables that account for the maximum variance in the data, as recommended by Pallant (2016). Rotation of the factor axes in the PAF analysis results in simple and interpretable factors. The Varimax rotation method was utilized in this study to achieve the best possible interpretation of the factors (Pallant, 2016), as it centres on simplifying the columns of the factor matrix (Hair et al., 2013). Factor loadings equal to or greater than 0.30 are considered significant (Hair et al., 2013).

To assess the factorability of items, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and 'Bartlett's Test of sphericity' were examined. The KMO measure of

sampling adequacy (MSA) measures the adequacy of the distribution of values for conducting factor analysis. An MSA greater than 0.60 for items in the early stage of data exploration suggests satisfactory factorability (Tabachnick & Fidell, 2007). Bartlett's Test of sphericity (p-values) examines the correlation between variables in the population. A Bartlett's Test less than 0.05 suggests satisfactory factorability for all items (Hair et al., 2013). Based on the results of the EFA, reliability tests were performed in relation to overall measurement scales; overall items, and constructs exhibiting high factor loadings and reliability. The resulting solutions were then re-assessed with the use of the Confirmatory Factor Analysis (CFA) in SPSS AMOS version 23.

3.4.2 Confirmatory factor analysis (CFA)

3.4.2.1 Structural Equation Modelling (SEM)

Structural Equation Modelling is a research design that tests a model by examining the relationships between concepts that are relevant to the model. This type of analysis requires a large and diverse sample of data. Structural Equation Modelling consists of two phases, the first of which is 'Confirmatory Factor Analysis' (CFA) and the structural model. This phase tested the measurement model as explained above. The Gaskin and Lim (2016) procedure for CFA includes Structural Equation Modelling, with the only difference being that modification indices are focused on regression weights instead of covariance. The iterations in CFA are focused on covariant relationships, while SEM provides information about causal parameters, which are represented as path coefficients or beta weights. The significance of individual paths was tested by checking the p-value of the relationship and if the value was less than 0.05, then that path link was significant and the hypothesised relationship between the two factor variables were assessed. The

overall fit of the causal model to the research data was evaluated using statistics such as the ‘goodness-of-fit index’ (GFI) and adjusted goodness-of-fit index (AGFI). SEM considers various factors such as interactions, nonlinearities, correlated variables, and measurement error.

This study followed the SEM approach because it provides a more comprehensive analysis that combined multiple regression, factor analysis, path analysis, and analysis of covariance. In adopting the SEM approach, the study followed the recommendations of Polit and Beck (2012) on causality inferences for empirical relationships between variables. Inferring causal relationships in correlational research is dangerous, according to Polit and Beck (2012), unless it is done so to describe relationships rather than to understand causal pathways. In order to support inferences of causality, this study used CFA/SEM model testing and the path analytics approach. The relationships between the study's constructs measured in the creation of a measurement framework were hypothesised, and SEM was used to test these hypotheses. The goal of the research was to create a framework for the management of military recruitment and retention practices, which served as the direction for this analytical strategy.

3.5 PHASE 2: DEVELOPMENT OF THE CONCEPTUAL FRAMEWORK

The practice-oriented theory of Dickoff and James Wiedenbach (1968) was used to guide the conceptual framework's development. As a result, the development of this study's conceptual framework necessitated the use of the constructs of Dickoff, James, and Wiedenbach (1968): agent, recipient, dynamic, procedure, and terminus, in order to

address the challenges associated with the provision of ECs by health care providers, as illustrated by the three categories of variables related to the provision of EC services.

The agent in this study was the researcher (facilitator), and the recipients were PHC providers (nurses) who provide EC services to adolescents. The procedure aided in the creation of an educational program to assist PHC in the management of EC in adolescents. The PHC facilities (clinics and healthcare centres) where ECs management was implemented were the context. The dynamics were the daily challenges that PHC providers faced in the management of ECs. The terminus was the result of the implementation of an educational program to assist PHC providers in managing ECs as a solution to the challenges they faced in managing ECs. The framework served as the foundation for the educational program that aided PHC providers in the Ohangwena region in managing EC. This stage is covered in greater depth in Chapter six.

3.6 PHASE 3: DEVELOPMENT OF AN EDUCATIONAL PROGRAMME

The third phase of the study involved the creation of a programme to assist PHC providers in the management of ECs in adolescents. The programme was created in response to the challenges identified in the situational analysis, as well as concepts derived from the conceptual framework and guided by the survey list of respondents (Dickoff et al., 1968). The challenges discovered through the analysis of completed questionnaires and information from the literature aided in the development of the educational programme.

The goal of this phase was to assist PHC providers in managing ECs in order to avoid unwanted pregnancies. In developing an educational program, the Nicholls and Nicholls

(1978) cyclic curriculum development model was used. This model includes five activities: conducting a situational analysis, choosing objectives, choosing and organising content, choosing and organising teaching methods, and assessing learning (Nicholls & Nicholls, 1978).

The programme had a goal, objectives, and structure, such as content, approaches, or teaching strategies. The content was chosen and organized after the objectives were established. Finally, depending on the objectives and content, teaching strategies were identified. The evolution of the program is described in Chapter seven.

3.7 PHASE 4: IMPLEMENT AND EVALUATE THE EDUCATIONAL PROGRAMME

This phase included program implementation and evaluation. Part one and Part two comprise this phase. Part one is the educational program's implementation. In the implementation of an educational program, Kolb's experiential learning cycle and Knowles' model of andragogy were used.

3.7.1 Part one: Implementation of the educational programme

Part one is the educational programme's implementation. In order to implement an educational program, Kolb's experiential learning cycle and Knowles' model of andragogy were used. Kolb's experiential learning cycle; Kolb and Kolb (2017) was used, with the four stages being: exploring activity, assimilation of new experiences, in-depth understanding of experience, and application of what was learned. As a program facilitator, the researcher needed to give participants time to explore and assimilate new

experiences in order for them to have a thorough understanding and apply what they had learned. Knowles' model entails creating a conducive learning environment, identifying learning needs, taking previous experience into account, setting clear objectives, and evaluating (Knowles, 1984). In this study, a suitable and conducive venue to learning was utilised.

The participants' learning needs, prior knowledge, and experience were all considered. Specific goals needed to be met and objectives were assessed based on whether or not they had been met. Two-day workshops were conducted at the Eenhana districts on 25 and 26 October 2018. The training took place at the Eenhana hospitals. Permission to use the hospitals' conference halls was sought by the facilitator, who wrote letters to the respective senior medical officers (SMOs) of the Eenhana districts. The PHC providers were chosen because they required assistance in developing good knowledge, positive attitudes, and good practices for managing ECs in order to avoid unwanted pregnancy. The two-day workshop drew twenty-one participants. This stage of program implementation is covered in Chapter 7.

3.7.2 Part two: Evaluation of the educational programme

The second section is an evaluation of the educational program. Pre and post-tests were given to workshop participants in order to assess the program's usefulness and impact. The test questions were chosen in accordance with the objectives to be met. Participants were given the opportunity to evaluate program implementation on a daily basis. This stage of program evaluation is covered in Chapter eight.

3.8 ETHICAL CONSIDERATIONS

According to Creswell (2018), ethics are the principles that govern the research process. Because there are risks involved in every study, research ethics are central to all research involving human participants. As a result, special precautions had to be taken to protect the rights of the participants (Polit & Beck, 2021). To minimise participant risk, the researcher must ensure that the research plan can pass an ethical review before contacting even one participant (Polit & Beck, 2021). This study followed the World Medical Association (WMA) research ethical principles outlined in the Helsinki Declaration (Review et al., 2014).

Approval of the study

A formal application for permission to conduct the study was submitted to the University of Namibia's Research and Ethics Committee, and ethical clearance was obtained. Furthermore, permission was sought and obtained from the Ministry of Health and Social Services, as well as the Ohangwena Regional Health Directorate's Management, to conduct the study among PHC providers who provide EC services to adolescents (see Annex A, B, C and D). This study included human participants, thus, special precautions had to be taken to protect the participants' rights. Three ethical principles were considered to be of particular relevance to this study: 'respect for persons', 'beneficence' and 'justice'.

3.8.1 Principle of respect

The principle of respect for human dignity affirmed PHC providers' right to self-determination and their right to decide whether to participate in the study after fully disclosing the study's aims, purposes, and nature (Neuman, 2020). Participants were informed of their right to participate as well as their right to withdraw from the study at any time without penalty.

Those who took part in the study were given complete information about the study's purpose and objectives, allowing them to make an informed decision about whether or not to participate. After receiving complete study information, participants were asked to sign a written consent form informing them of the research's purpose and process. They were free to ask the researcher for clarity where they did not understand information. The participants' information must be kept confidential (Neuman, 2020) and participants can withdraw from the study anytime (Hennink et al., 2020). In exception of the study supervisors, no individuals were given access to the research data. The electronic data was stored in an electronic file created by the researcher on a password-protected computer. The questionnaires were filed and stored in a lockable cupboard that only the researcher had access to. Throughout the study, data access was strictly controlled. To maintain anonymity, participants were not asked to provide their names, and the data was coded in such a way that participants could not be identified in any presentations of the findings.

3.8.2 The principles of beneficence

The researcher's goal was to produce results that would benefit both individuals and society as a whole, this went in correlation with Raus et al. (2018) 's elaboration on researcher's goals. Aside from that, consideration of the potential for harm was observed among the participants. The study involved PHC providers, therefore, the risks and benefits of the study were carefully explained to the participants prior to the study. Although not all participants directly benefited, those who were willing to attend an educational program did. To avoid harm, participants were informed of their right to not respond to questions they found uncomfortable. The researcher's aim was to produce results that would benefit individuals and the entire society at large (Raus et al., 2018).

3.8.3 The principle of justice

The right to fair treatment and privacy is included in the justice principle. The participants should be treated fairly before, during, and after participating in the research study (Hennink et al., 2020). Participants were chosen based on the study's predetermined criteria. The same questions were posed to all participants. The research was carried out with honesty and integrity. In this study, no one was discriminated against because of their race, gender, disability, income level, or any other characteristic. To ensure privacy, participants were asked to complete the questionnaire in a separate room on the day it was given to them. They were instructed to place their completed questionnaire in a sealed envelope and return it to the office the same day. The principle of justice also includes the researcher.

3.8 CHAPTER SUMMARY

The researcher presented the research design, methodology, and study population in this chapter. The data collection tools, as well as the data collection procedures and data analysis, were described. Research ethics principles were also discussed. The study findings are presented in the following chapter.

CHAPTER FOUR

PRESENTATION OF THE FINDING AND DISCUSSION

4.1 INTRODUCTION

The results emanating from data collection and analysis are reported in this chapter. The presentation of this chapter's parts and subsections was guided by the quantitative phase objectives and the questionnaire sections. The chapter is presented in five (5) main sections, starting with an overview of the analysis, followed by the presentation of findings addressing the two quantitative research objectives and the challenges identified in developing a programme based on the participants' knowledge, attitudes and practices. The chapter concludes with a chapter summary.

4.2 OVERVIEWS OF ANALYSIS

The quantitative data analysis was divided into two stages, with descriptive and inferential analysis methods used in each. The statistical package was used to perform descriptive and inferential statistics, as well as data presentation (IBM SPSS version 26 and IBM SPSS AMOS version 23). The preparation, processing, and screening of the data ensured that it was useful, reliable, and valid for statistical analysis. The procedure also included redefining and recoding variables in order to increase Cronbach's alpha reliability to the recommended value of greater than 0.7. The dataset was also checked for missing values, and questionnaires with significant missing data or poor-quality responses were removed before the analysis.

Outliers were also handled by changing the codes and scales and aggregating the variables to reduce extreme value outliers. Finally, following data screening, the SPSS version 26.0 missing value analysis (MVA) and Cronbach's Alpha if the item was deleted were used to iteratively reduce the variables from 62 to 45 variables and cases from 93 to 92. Table 4.1 provides a descriptive summary of the flagged variables as well as Cronbach's alpha if deleted values.

Table 4. 1: Summary of the flagged variables affecting reliability of the scale

Iteration	Code	Scale Mean if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Mean	Std. Dev
1	Sec4_42cat	112.25	-0.01	0.440	11.96	3.92
2	Sec2_11	110.46	-0.17	0.48	1.79	1.37
3	Sec3_22	103.99	-0.17	0.538	2.46	1.27
4	Sec3_23	101.75	-0.21	0.575	2.24	1.25
5	Sec3_28	99.40	-0.24	0.608	2.35	1.11
6	Sec2_12	97.83	-0.21	0.637	1.58	1.12
7	Sec3_18	95.89	-0.23	0.657	1.93	0.86
8	Sec1.1	93.46	-0.25	0.676	2.43	0.79
9	Sec1_2	90.71	0.01	0.691	2.75	1.49
10	Sec3_20	88.87	-0.16	0.704	1.84	0.82

Table 4.1 indicates the variables flagged during the cleaning process based on improving Cronbach's alpha if the item is deleted. As such, after removing the ten variables iteratively, Cronbach's alpha reliability of the scale improved to 0.704. The variables include items from section 2 on Knowledge, Section 3 on Attitudes and Section 1:

Demographic variables such as district and age groups. Accordingly, these variables were removed in the further analysis when issues of statistical significance were detected.

4.3 PRESENTATION OF FINDINGS: OBJECTIVE ONE

The section presents the study's descriptive statistics in accordance with objective one of this study. The findings are organised into four sub-sections that correspond to the four main sections of the questionnaire: Section A: Demographic Data, Section B: Knowledge, Section C: Attitudes, and Section D: Practices.

4.3.1 Section A: Demographic information

This section presents the socio-demographic characteristics of the research respondents cross-tabulated against the three Ohangwena Public PHC facilities districts of Okongo, Eenhana, and Engela. *Table 4.2* summarizes the findings.

Table 4. 2: Summary of demographic information

Variable	Description	Okongo		Eenhana		Engela		Total	
		N	%	N	%	N	%	N	%
Age of participant	Under 30 years	6	35.3%	5	27.8%	11	19.3%	22	23.9%
	30 to 40 years	7	41.2%	5	27.8%	14	24.6%	26	28.3%
	Above 40 years	4	23.5%	8	44.4%	32	56.1%	44	47.8%
Marital status	Single	7	41.2%	9	50.0%	26	45.6%	42	45.7%
	Divorced/Widowed	2	11.8%	2	11.1%	3	5.3%	7	7.6%
	Cohabitant / Married	8	47.1%	7	38.9%	28	49.1%	43	46.7%
Religion	Non-Lutheran Christian	4	23.5%	6	33.3%	24	42.1%	34	37.0%
	Lutheran	13	76.5%	12	66.7%	33	57.9%	58	63.0%

Professional qualification	Enrolled nurse/midwife	6	35.3%	7	38.9%	30	52.6%	43	46.7%
	Registered nurse/+midwife	11	64.7%	11	61.1%	26	45.6%	48	52.2%
	Doctor	0	0.0%	0	0.0%	1	1.8%	1	1.1%
Experience	Less than 1 year	0	0.0%	4	22.2%	14	24.6%	18	19.6%
	1 to 5 years	5	29.4%	7	38.9%	17	29.8%	29	31.5%
	5 to 10 years	8	47.1%	2	11.1%	9	15.8%	19	20.7%
	10+ years	4	23.5%	5	27.8%	17	29.8%	26	28.3%
	Total	17	100.0%	18	100.0%	57	100.0%	92	100.0%

The descriptive statistics of the purposive sample of the entire population of PHC providers responsible for EC in the Ohangwena district are presented in Table 4.2. The response rate was 98.9% (92), with one incomplete questionnaire removed. The subsections that follow use Table 4.2 to interpret the findings from Section A of the questionnaire, which covers demographic data such as the participants' age group, marital status, religion, professional qualifications, and experience working with EC.

4.3.1.1 The age of the respondents

The participants ranged in age from 24 to 63 years old, with an average age of 41 years (S.D. = 12). The majority of participants from Okongo district were aged between 30 and 49 years (n = 7, 41.2%) giving an average age of 36 years (S.D = 11). While most participants from Eenhana district were above 40 years (n = 8, 44.4%), with a mean age of 41(S.D = 13). Similarly, the majority of participants in the Engela district were over 40 years old (n = 32, 56.1%), with a mean age of 43 years (S.D = 12). Table 4.1 also shows

the overall participant age distribution, which shows that the majority of participants (n=44, 47.8%) were over the age of 40. years (n=44, 47.8%).

4.3.1.2 Respondents marital status

The marital status of the respondents was recoded into three main categories by combining some of the categories to improve the consistency of the data. Accordingly, the study resorted to three categories representing (A); 'single' or 'never married'. (B); divorced or widowed, and (C); married or cohabiting. According to Table 4.1, the majority of respondents (45.7%) were either single or married (46.7%), with a few (7.6%) having been divorced or widowed. These findings are consistent with the participants' age groups being bimodal, as younger age groups are more likely to be single and never married, whereas older age groups are more likely to be married. The study discovered that age groups and marital status had a significant likelihood ratio (LR = 38.146, df = 8, p =.000) that was significant.

The study, however, found no correlation between marital status and the three Ohangwena districts, implying that marital status trends are consistent throughout the Ohangwena region. Furthermore, research indicates that marital status is significantly related to a higher likelihood of being familiar with EC. For example, in an Ethiopian study, being married was significantly associated with a higher likelihood of being familiar with EC (Demissie et al., 2020). Accordingly, associations between marital status and age groups with EC are expected to exhibit similar relations when assessed in the coming sections.

4.3.1.3 Respondents 'religion

To improve data consistency, the religious belief of the respondents was also recorded into three major categories. While most participants identified themselves as Christians, 63% were Lutheran and 37% were non-Lutheran denominations like Anglican (18.3%) and Catholics (12.9%). The findings were consistent across the three districts. Religion: the majority at 62.4% (n=58) of respondents were Lutheran. More than 90.9% of Namibians are of the Christian religion (Horn, 2008). This finding is contrary to a study in India where 69% of respondents were Hindus (Jindal et al., 2020), and a study in Pakistan where 87% of the respondents were Islamic (Mohammed et al., 2019)). Religion can be a barrier to the provision of FP and ECs. Some religions such as Lutheran do not oppose the provision of EC services, thus, they have a positive attitude on ECs; Catholics, however, are opposed to the provision of contraceptives, including ECs (Schwandt et al., 2018). Literature reveals that Lutheran have a positive attitude to contraceptives, including ECs (Turner, 2021) . In this study, religion was not a barrier to providing EC services.

4.3.1.4 Respondents professional qualifications

The participants' professional qualifications were grouped into three main categories, with the highest of the participants being either registered (52.2%) or enrolled (46.7%) nurses and midwives. The sample also included one medical doctor (1.1%). PHC providers' primary function (registered nurses, enrolled nurses/midwives at clinics and health centres) is to provide FP services, including EC daily (Namibia Ministry of Health and Social Service, 1995). The study found that the participants had adequate professional qualifications to be considered qualified, skilful, and competent in the provision of FP and

ECs. This finding is consistent with the findings of a similar study conducted in Nigeria, where 59.9% of healthcare providers were registered nurses/midwives (Schwandt et al., 2017).

4.3.1.5 Respondents experience within the FP clinic

The participant's experience was recoded into four categories to address issues of outliers. When it comes to experience with ECs, the findings indicated that 31.5% of the participants had 1 to 5 years of experience, 28.3% had more than 10 years' experience, 19.6% of had less than one year of experience, and 20.7% had 5 to 10 years' experience. Work experience in FP in this study was contextualised in terms of the attitude of PHC providers towards ECs. This was deemed necessary because all public PHC facilities in Namibia (clinics, health centres and outreach points) provide FP and EC daily. A similar study done in Nigerian study found that 50.4% of the nurses had worked in the FP clinics for at least 11 years (Ebuehi et al., 2006).

The next discussion concentrates on the findings of the respondents' knowledge of ECs.

4.3.2 Section B: Knowledge about emergency contraceptives

The section presents the findings from Section B statements on the awareness and knowledge of EC among the nurses. The results are shown in Table 4.3.

Table 4. 3: Descriptive statistics of knowledge about EC

Section B Knowledge Statements		Okongo		Eenhana		Engela		Total	
		N	%	N	%	N	%	N	%
Have heard of emergency contraceptive (Sec2_9)	Enrolled nurse/midwife	7	70%	6	86%	17	65%	30	70%
	Registered nurse/midwife	6	86%	10	91%	26	87%	42	88%
	Doctor					1	100%	1	100%
	Total	13	76%	16	89%	44	77%	73	79%
What emergency contraceptive do you know (Sec2_10)	Combined pills	9	53%	15	83%	37	65%	61	66%
	Progesterone only pills	1	6%	4	22%	17	30%	22	24%
	Estrogen only pills	1	6%	2	11%	6	11%	9	10%
	Copper IUD	1	6%	3	17%	9	16%	13	14%
	Nur-estrade injection	1	6%	2	11%	8	14%	11	12%
Appropriate candidates for emergency contraceptives (ECs) (Sec2_13)	Unprotected sex	12	71%	15	83%	43	75%	70	76%
	Incontinent users	1	6%	0	0%	5	9%	6	7%
	Infrequent sex	0	0%	0	0%	3	5%	3	3%
	Adolescents	0	0%	1	6%	9	16%	10	11%
	Multiple partners	1	6%	5	28%	5	9%	11	12%
Indication of conditions for use (Sec2_14)	Rape	11	65%	18	100%	44	77%	73	79%
	Unprotected intercourse	5	29%	14	78%	31	54%	50	54%
	Condom breakage	9	53%	13	72%	34	60%	56	61%
	Missed pills	4	24%	4	22%	7	12%	15	16%
	Infrequent sex	0	0%	1	6%	1	2%	2	2%
What is the correct time for using emergency contraceptives (ECs) (Sec2_11)	Do not know	4	24%	0	0%	8	14%	12	13%
	During menstrual period	1	6%	0	0%	1	2%	2	2%
	72hrs after unprotected intercourse	10	59%	12	67%	37	65%	59	64%
	24hrs after unprotected sex	2	12%	6	33%	11	19%	19	21%
How do emergency contraceptive (ECs) work (Sec2_12)	Do not know	4	24%	1	6%	8	14%	13	14%
	Induce abortion	1	6%	1	6%	5	9%	7	8%
	Prevent pregnancy	12	71%	16	89%	44	77%	72	78%

4.3.2.1 Have you heard of or do you know about emergency contraceptives?

Overall, most participants (79%) had heard or know about ECs, but surprisingly there were 21% of them who had never heard about it before. This means that some respondents still do not know about ECs, which could be due to the fact that they were probably trained before the introduction of ECs in FP services in Namibia in 2013.

4.3.2.2 Knowledge about emergency contraceptive methods

Sixty-six percent of providers who knew about ECs identified combined pills as one of the emergency contraceptive methods, whilst 24% identified progesterone pills which is correct and a low percentage (14%) correctly identified copper IUD as a method of emergency contraceptive from the given list. The copper IUD is described to be the most effective emergency contraceptive method, but it appears that many people are unaware of it, as evidenced by the list. Despite the high efficacy of the intrauterine device, it is not known by providers thus adolescents who may benefit from this method may be denied this option. However, the majority of respondents chose methods and pills that are not ECs such as (Oestrogen and Nur estrate), which indicates that the respondents did not know the correct methods of ECs. The reason might be that the PHC providers were not trained on ECs. The training of providers on the correct regimen of ECs will encourage them to educate adolescents about their use and subsequently reduce unwanted pregnancies.

4.3.2.3 PHC providers' knowledge of eligibility for ECs or appropriate candidates for emergency contraceptives

In identifying those who are eligible for emergency contraceptive use, a majority of participants at 76% named women who had unprotected sex. A few (12 %) of the respondents had identified adolescents as appropriate candidates for using ECs. Adolescents and young people are the vulnerable group at risk of unwanted pregnancies, yet the providers could not identify them as appropriate candidates for use. This means that the providers lack basic knowledge on appropriate candidates for ECs, and when adolescents come to the health care facilities, they might be denied ECs, which will put them at risk of unwanted pregnancies. This knowledge gap that was identified by the study clearly is an indication of a lack of training on ECs among the providers, which can be easily rectified by training providers on FP and EC guidelines at the health care facilities in Ohangwena region will encourage them to promote EC use among the adolescents and subsequently reducing unwanted pregnancies.

4.3.2.4 Conditions in which to give emergency contraceptives

The majority of providers identified rape situations as appropriate for EC (79%), followed by condom breakage (61%), while only 16% knew that ECs could be given in case of missed pills. This indicates that the providers do not know any other situations which may require ECs other than rape and condom breakage. This could mean that PHC providers might not give ECs in situations other than rape and condom breakage. This could be due to their deficient knowledge on situations or conditions on when to give ECs among the

providers. The training and re-training of providers on ECs, including when to give ECs, will encourage them to provide ECs in situations other than rape and condom breakage, and might subsequently reduce unwanted pregnancies among the adolescents.

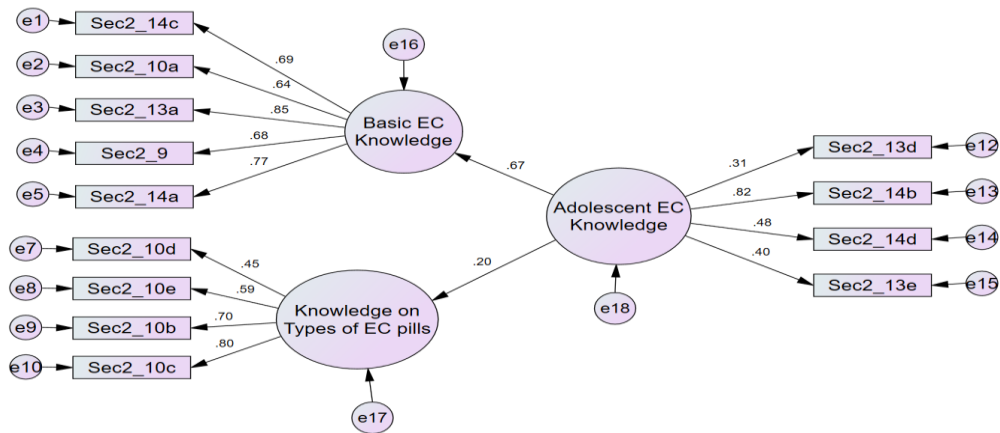
4.3.2.5 Correct time for using emergency contraceptives

A total of 64% of providers correctly responded that emergency contraception could be administered within 72 hours of unprotected sex. More than 26% were unaware of the proper time to use emergency contraception. They either mentioned it should be taken within 24 hours or during menstruation, which is incorrect, or they were honest enough to state that they did not know. This means that some providers are unaware of the proper time for effective ECs use and may end up denying ECs to adolescents or providing incorrect information to clients in need of ECs regarding the proper time for practical use. For example, there are some ECs such as IUCD and other oral contraceptives that can be given within 120 hours and those providers who only know that ECs can be given within 72 will only give such within 72 and clients who will come after 72 will be denied EC due to insufficient knowledge on the adequate time to use ECs. This might be due to lack of training on ECs for providers on the basic knowledge of ECs and the correct time to use ECs and when to give ECs. Providing training on ECs will motivate them to give proper information to adolescents and encourage adolescents to use ECs effectively.

4.3.2.6 Mechanisms and action of emergency contraceptives

When presented with options regarding the use of ECs, most participants regarded it to be for

preventing pregnancies. As a result, while the majority of participants (78.3%) were aware that ECs were effective in preventing pregnancy, 14.1% were unaware of its therapeutic action. Therefore, providers were found to be knowledgeable on this variable, although 7.6% of the providers, if approached by the adolescents, might deny them ECs because of the belief that ECs could induce abortion. This could be due lack of training of some providers on basic knowledge about ECs. Training on ECs would give them better knowledge and correct myths and misconception about EC.



Variable		Factor	Estimate	S.E.	C.R.	P	Comment
Basic	<---	Adolescent_EC	2.251	0.959	2.349	0.02	significant
EC_Pill_Types	<---	Adolescent_EC	0.315	0.259	1.214	0.23	not significant
Sec2_14c	<---	Basic	1			0.00	significant
Sec2_10a	<---	Basic	0.893	0.164	5.457	0.00	significant
Sec2_13a	<---	Basic	1.079	0.155	6.979	0.00	significant
Sec2_9	<---	Basic	0.747	0.129	5.792	0.00	significant
Sec2_14a	<---	Basic	0.931	0.143	6.496	0.00	significant
Sec2_10d	<---	EC_Pill_Types	1			0.00	significant
Sec2_10e	<---	EC_Pill_Types	1.196	0.355	3.371	0.00	significant
Sec2_10b	<---	EC_Pill_Types	1.837	0.514	3.577	0.00	significant
Sec2_10c	<---	EC_Pill_Types	1.482	0.409	3.622	0.00	significant
Sec2_13d	<---	Adolescent_EC	1			0.00	significant
Sec2_14b	<---	Adolescent_EC	4.05	1.655	2.447	0.01	significant
Sec2_14d	<---	Adolescent_EC	1.834	0.805	2.28	0.02	significant
Sec2_13e	<---	Adolescent_EC	1.29	0.608	2.12	0.03	significant

Figure 4.1 Reliability and validity results of Section B: Knowledge factors

Figure 4. 1:depicts the results of the Confirmatory Factor Analysis (CFA) for Section B items on adolescent EC knowledge.

Figure 4.1 depicts the CFA model, which shows two factors related to the 'Adolescent EC Knowledge' factor. The findings revealed that 'Basic EC Knowledge' factor (unstandardised beta =2.25, standardised beta = 0.67, $p = 0.02$ 0.05) and the 'Type of EC Pills Knowledge' factor (unstandardized beta =0.315, standardized beta = 0.2, $p = 0.23 >0.05$) both have a positive standardized effect on the 'Adolescent EC Knowledge' factor. However, the relationship with Types of pills was not significant at 95% confidence. These findings imply that the nurses' level of knowledge in Adolescent ECs was positively influenced by the level of knowledge in Basic ECs.

In addition, the 'Adolescent EC Knowledge' factor reveals that adolescents (Sec2_13d; beta = 0.31) and people with multiple partners (Sec2_13e; beta = 0.4) were the appropriate candidates for EC. At the same time, unprotected intercourse (Sec2_14b; beta = 0.82) and missed pills (Sec2_14d; beta = 0.48) were identified as particular conditions under which ECs can be given to adolescent patients. Accordingly, the descriptive statistics for Section B were done using the three factors and their supporting item scale. Section B items were recoded using binary Yes (1) and No (0) responses, and the items loading on the same factor were transformed into a mean score and multiplied by 100 to represent the nurses' level of EC knowledge. Table 4.4 summarises the findings.

Table 4. 4: Descriptive statistics of EC knowledge factors

Factor	Statistic	Don't Know	Induce Abortion	Prevent pregnancy	Total
Sec2_F1_Basic_Knowledge	Mean	0.00	80.00	82.43	72.39
	Std. Dev.	0.00	23.09	22.92	34.30
Sec2_F2_Pill_Knowledge	Mean	0.00	7.14	17.91	14.95
	Std. Dev.	0.00	18.90	27.92	26.22
Sec2_F3_Adolescent_Knowledge	Mean	0.00	7.14	28.38	23.37
	Std. Dev.	0.00	12.20	26.60	26.16
Total	N	13	7	72	92
	%	14.1%	7.6%	78.3%	100.0%

The findings in Table 4.4 indicated that 14.1% (n = 13) of the participants did not have any EC knowledge, whereas 7.6% (n = 7) of the participants believed that EC is used to induce abortions. While the majority (78.3%) of the participants knew that ECs effectively prevented pregnancy. The summary values from the emerging three factors indicated that the overall mean level of basic EC knowledge for the sample was 72.39% (S.D: 34.30), with the two groups that are aware of the function and timing of ECs in preventing pregnancies (82.43%) and inducing abortions (80%) having the necessary basic EC knowledge. The findings, however, show a general lack of knowledge about the type of pills used in EC (M = 14.95%, S.D = 26.2 and the importance of adolescent EC (M = 23.37%, 26.16).

These findings have negative consequences for the community-wide usage of EC. As a result, focused training interventions for these healthcare professionals on EC knowledge, understanding the types and efficacy of EC pills, and providing EC services for adolescent

patients are required. The study findings align with previous research that has stressed the necessity of providing nurses with accurate and up-to-date information about ECs. Hence nurses operate as health educators and service providers, their lack of understanding might impact a community's contraceptive and FP behaviours. Ahmed et al. (2016) observed that the nursing personnel's lack of information, misconceptions, and bad attitudes concerning ECs might be a barrier to their usage and prevent them from advocating ECs to recipients. A previous study of healthcare practitioners (HCP) indicated a lack of awareness and unfavourable attitudes toward ECs, resulting in limited usage of EC procedures (Ibrahim et al., 2013).

4.3.3 Section C: Attitudes about emergency contraceptives

The section C scale included 17 Likert scale item statements that were graded on a 5-point scale ranging from Strongly Agree (1) to Strongly Disagree (5). The descriptive results are shown in Table 4.5.

Table 4. 5: Descriptive statistics of attitudes about ECs

Code	Mean	strongly agree		agree		don't know		Disagree		strongly disagree	
		N	%	N	%	N	%	N	%	N	%
Sec3_15	1.40	66	71.7%	17	18.5%	8	8.7%	0	0.0%	1	1.1%
Sec3_16	1.48	60	65.2%	23	25.0%	6	6.5%	3	3.3%	0	0.0%
Sec3_17	1.63	52	56.5%	25	27.2%	13	14.1%	1	1.1%	1	1.1%
Sec3_27	1.82	41	44.6%	36	39.1%	9	9.8%	3	3.3%	3	3.3%
Sec3_20	1.84	34	37.0%	44	47.8%	9	9.8%	5	5.4%	0	0.0%
Sec3_18	1.93	33	35.9%	36	39.1%	19	20.7%	4	4.3%	0	0.0%
Sec3_23	2.24	33	35.9%	28	30.4%	13	14.1%	12	13.0%	6	6.5%
Sec3_28	2.35	23	25.0%	35	38.0%	15	16.3%	17	18.5%	2	2.2%
Sec3_22	2.46	25	27.2%	30	32.6%	14	15.2%	16	17.4%	7	7.6%
Sec3_19	2.87	13	14.1%	20	21.7%	31	33.7%	22	23.9%	6	6.5%

Sec3_21	3.00	14	15.2%	21	22.8%	21	22.8%	23	25.0%	13	14.1%
Sec3_25	3.23	10	10.9%	22	23.9%	17	18.5%	23	25.0%	20	21.7%
Sec3_29	3.50	5	5.4%	14	15.2%	19	20.7%	38	41.3%	16	17.4%
Sec3_26	3.58	9	9.8%	14	15.2%	11	12.0%	31	33.7%	27	29.3%
Sec3_30	4.03	2	2.2%	7	7.6%	10	10.9%	40	43.5%	33	35.9%
Sec3_24	4.15	2	2.2%	3	3.3%	16	17.4%	29	31.5%	42	45.7%
Sec3_31	4.23	2	2.2%	1	1.1%	10	10.9%	40	43.5%	39	42.4%
Code	Description										
Sec3_15	All primary care providers should be aware of EC and be able to prescribe it.										
Sec3_16	Every health facility should have easy access to EC.										
Sec3_17	A greater use of EC saves money over abortion and unwanted childbearing.										
Sec3_27	Adolescents should be counselled on contraception before becoming sexually active.										
Sec3_20	Providing EC would not discourage the use of other contraceptives										
Sec3_18	The EC are safe for its use										
Sec3_23	EC should be recommended for both married and unmarried women.										
Sec3_28	Unmarried adolescents do not require parental consent for contraceptive use										
Sec3_22	I would recommend the use of EC if i had client who had unprotected sex during the unsafe period										
Sec3_19	The EC are less effective than regular contraceptives										
Sec3_21	Easily availability of EC increases risky sexual behaviours										
Sec3_25	Providing EC to unmarried adolescents promotes sexual promiscuity										
Sec3_29	Fear of prescribing EC because of possible side effects										
Sec3_26	It is preferable to tell sexually active unmarried adolescents to abstain rather than give them EC.										
Sec3_30	I do not prescribe EC because of my religious belief										
Sec3_24	EC are used only by commercial sex workers										
Sec3_31	I do not prescribe EC because of my cultural beliefs										

Table 4.5 shows mixed results for nurses' attitudes, prompting the use of factor analysis to better understand the underlying attitudinal factors influencing PHC providers' perceptions of supporting EC management. Accordingly, the data processing and analysis saw the Section C scale being reduced to 12 items that were flagged for poor consistency

during the data cleaning exercise as discussed in section 4.2. As shown in Figure 4.2, the factor analysis produced a Confirmatory Factor Analysis (CFA) diagram and path relations. The CFA model is depicted in Figure 4.2, which shows two attitudinal factors, namely "Positive attitudes" and "Misconceptions" influencing nurses and "Negative Attitudes" towards ECs.

The findings revealed that the standardised direct (unmediated) effect of Negative Attitudes on Positive Attitudes was -0.452 ($p < 0.01$). The value represents the direct (unmediated) effect of Negative Attitudes on Positive Attitudes; as such, when Negative Attitudes rise by one standard deviation, Positive Attitudes fall by 0.452 standard deviation. Furthermore, Figure 4.2 depicts the unmediated (direct) effect of Negative Attitudes on Misconceptions, indicating that when Negative Attitudes increase by one standard deviation, Misconceptions increase by 0.381 standard deviations ($\beta = 0.381$, $p < 0.01$). Overall, these findings imply that a nurse with a negative attitude is likely to have a high misconception attitude and low positive attitudes on ECs.

Figure 4.2 Reliability and validity results of Section C: Attitude factors

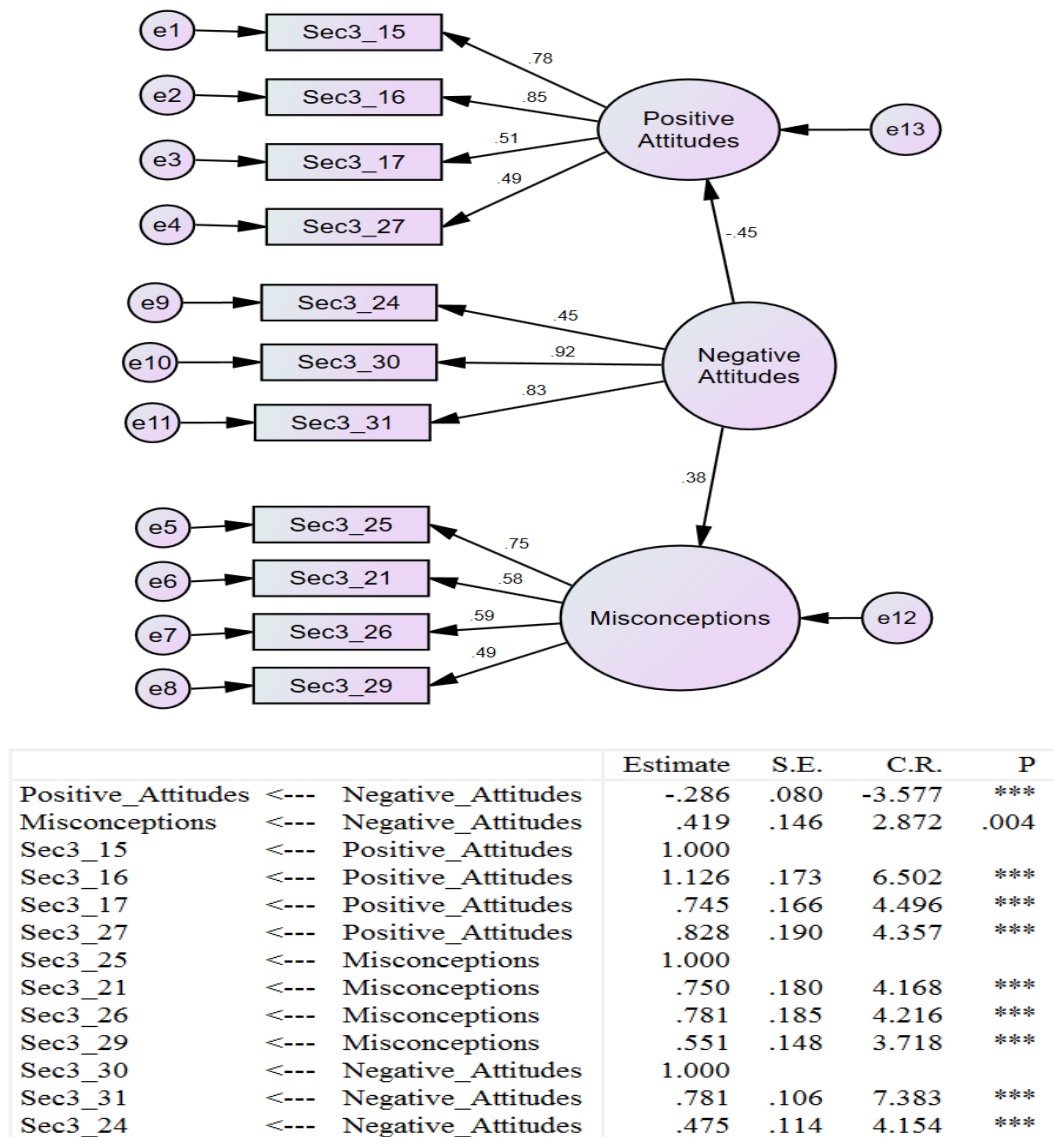


Figure 4. 2: Reliability and validity results of Section C: Attitude factors

The 'Negative attitudes' towards EC are strongly influenced by religious beliefs (Sec3_30; beta = 0.92) and cultural beliefs (Sec3_31; beta = 0.83), mildly influenced by attitudes towards commercial sex workers (Sec3_24; beta = 0.45). At the same time, the Positive

Attitudes towards EC are influenced by the knowledge and competence of nurses in counselling (Sec3_27; beta = 0.49) and prescribing ECs to patients (Sec3_15; beta = 0.78). As well as the affordability (Sec3_17; beta = 0.78), easy access and availability of EC at every health facility (Sec3_16; beta = 0.85).

Regarding misconceptions, the study revealed that nurses believed that making ECs readily available would moderately increase risky sexual behaviours (Sec3_21; beta = 0.58), and highly promotes sexual promiscuity in unmarried adolescents (Sec3_25; beta = 0.75). Furthermore, they believed that it is preferable to tell sexually active unmarried adolescents to abstain from sex rather than give them contraceptives (Sec3_26; beta = 0.59). Finally, the nurses were concerned about prescribing ECs due to potential side effects (Sec3_29; beta = 0.49).

Using SPSS AMOS version 23 data imputation, the three attitudinal composite factors were imputed into a composite factor score. The descriptive statistics for the imputed factors are shown in Table 4.6.

Table 4. 6:Descriptive statistics of the imputed attitudinal factors of Section C item scale

Section c attitudes	Okongo			Eenhana			Engela			Total		
	Mn*	Mx*	MS*	Mn	Mx	MS	Mn	Mx	MS	Mn	Mx	MS
Positive attitudes	1.02	2.17	53%	0.93	2.50	63%	0.91	2.17	58%	0.93	2.50	63%
All primary care providers should be aware of EC and be able to prescribe it.	1.41	3.00	53%	1.39	3.00	54%	1.40	5.00	72%	1.40	5.00	72%
Every health facility should have easy access to EC.	1.53	3.00	49%	1.61	4.00	60%	1.42	3.00	53%	1.48	4.00	63%
A greater use of EC saves money over	2.18	5.00	56%	1.33	3.00	56%	1.56	3.00	48%	1.63	5.00	67%

abortion and unwanted childbearing.												
Adolescents should be counselled on contraception before becoming sexually active.	2.24	5.00	55%	1.56	4.00	61%	1.77	5.00	65%	1.82	5.00	64%
Negative attitudes	3.91	4.88	20%	4.20	4.89	14%	3.86	4.89	21%	3.94	4.89	20%
EC are used only by commercial sex workers	4.18	5.00	16%	3.89	5.00	22%	4.23	5.00	15%	4.15	5.00	17%
I do not prescribe EC because of my religious belief	4.06	5.00	19%	4.39	5.00	12%	3.91	5.00	22%	4.03	5.00	19%
I do not prescribe EC because of my cultural beliefs	4.06	5.00	19%	4.44	5.00	11%	4.21	5.00	16%	4.23	5.00	15%
Misconceptions	3.56	4.53	21%	3.32	4.86	32%	3.22	4.86	34%	3.30	4.86	32%
Providing EC to unmarried adolescents promotes sexual promiscuity	3.76	5.00	25%	3.11	5.00	38%	3.11	5.00	38%	3.23	5.00	35%
Easily availability of EC increases risky sexual behaviours	3.29	5.00	34%	3.06	5.00	39%	2.89	5.00	42%	3.00	5.00	40%
It is preferable to advise a sexually active unmarried woman to abstain from sex rather than provide contraception.	3.71	5.00	26%	3.89	5.00	22%	3.44	5.00	31%	3.58	5.00	28%
I have fear of prescribing EC because of possible side effects	3.53	5.00	29%	3.22	5.00	36%	3.58	5.00	28%	3.50	5.00	30%

*Note: *Mn* = Mean, *Mx* = Maximum, *MS* is the ratio of *Mn* and *Mx* expressed as a percentage.

The descriptive statistics are shown in Table 4.6 of the attitude to EC factors computed from using regression data imputation of Figure 4.2 model using SPSS AMOS. The factor scales are consistent with the item Likert scale with lower mean indicating strong agreement to the statements and the higher mean closer to five indicating strong disagreement with item statements. Most of the item statements were negatively worded. Accordingly, the factors maintained a positivist approach that gives a high score or mean to negative statements and low scores to positive statements. The findings show that the positive attitudes had lower means, while negative attitudes had higher means in line with

the questionnaire design. The misconceptions factor was derived from statements which received mixed responses from the participants. This was done in line with the study's objective of identifying challenges as a basis of developing an educational programme. Such factors with higher means warranted the attention of the researcher. These factors were then analysed for associations as in Section 4.4.

4.3.2.1 Positive attitude

The findings revealed that the standardised direct (unmediated) effects of Negative Attitudes on Positive Attitudes was -0.452 ($p < 0.01$). The value is the direct (unmediated) effect of Negative Attitudes on Positive Attitudes, as such, when Negative Attitudes go up by 1 standard deviation, Positive Attitudes go down by 0.452 standard deviations. Additionally, Figure 4.2 depicts the direct (unmediated) effects of Negative Attitudes on Misconceptions, indicating that for every one standard deviation increase in Negative Attitudes, Misconceptions increase by 0.381 standard deviations ($\beta = 0.381$, $p < 0.01$). Overall, these findings imply that a nurse with a negative attitude is likely to have a high misconception and low positive attitude on EC.

4.3.2.2 Negative attitudes

The 'Negative attitudes' towards ECs are strongly influenced by religious beliefs (Sec3_30; $\beta = 0.92$) and cultural beliefs (Sec3_31; $\beta = 0.83$), while mildly influenced by attitudes towards commercial sex workers (Sec3_24; $\beta = 0.45$). In contrast, the Positive Attitudes towards EC are influenced by the knowledge and competence of nurses

in counselling (Sec3_27; beta = 0.49) and prescribing ECs to patients (Sec3_15; beta = 0.78). As well as the affordability (Sec3_17; beta = 0.78), easy access and availability of ECs at every health facility (Sec3_16; beta = 0.85).

4.3.2.3 Misconceptions

Regarding misconceptions, the study reveals that nurses believed that making ECs readily available would moderately increase risky sexual behaviours (Sec3_21; beta = 0.58), and highly promotes sexual promiscuity in unmarried adolescents (Sec3_25; beta = 0.75). Furthermore, they believed that rather than providing contraception, it is preferable to advise sexually active unmarried adolescents to abstain from sex (Sec3_26; beta = 0.59). Lastly, the nurses feared prescribing EC because of possible side effects (Sec3_29; beta = 0.49).

4.3.3 Section D: Practices of PHC providers regarding emergency contraceptives

Section D scale had a total of 11-item statements, and these statements had mixed responses that were both negative and positive, thus affecting the scale's consistency. As a result, the following statements were transformed into ordinal type variables for use in -cross-tabulating the knowledge levels. The results are shown in Table 4.7.

Table 4. 7: Descriptive statistics of EC practices of PHC providers

Variable	Description	District							
		Okongo		Eenhana		Engela		Total	
		N	%	N	%	N	%	N	%
Sec4_33	Trained in family planning (FP)	8	47.1%	5	27.8%	30	52.6%	43	46.7%
Sec4_34	Trained in FP and EC	3	17.6%	1	5.6%	10	17.5%	14	15.2%

Sec4_35	EC available at the facility	17	100.0%	16	88.9%	51	89.5%	84	91.3%
Sec4_36	Provide EC to clients	6	35.3%	10	55.6%	19	33.3%	35	38.0%
Sec4_37	Oral 2 Pills (4 Tabs Within 72 Hours)	6	35.3%	10	55.6%	19	33.3%	35	38.0%
Sec4_39	No Comment	11	64.7%	8	44.4%	38	66.7%	57	62.0%
	Unprotected Sex Night Before or Busted Condom	3	17.6%	8	44.4%	11	19.3%	22	23.9%
	Rape Cases	3	17.6%	2	11.1%	8	14.0%	13	14.1%
Sec4_38	No EC Provided	1	5.9%	2	11.1%	9	15.8%	12	13.0%
	General services or during screening	3	17.6%	2	11.1%	13	22.8%	18	19.6%
	During health education	1	5.9%	4	22.2%	4	7.0%	9	9.8%
	After busted condom or unprotected sex	6	35.3%	6	33.3%	18	31.6%	30	32.6%
	Force sex, rape cases, or abortion requests	6	35.3%	4	22.2%	13	22.8%	23	25.0%
Sec4_41	Not Reported	17	100.0%	17	94.4%	50	87.7%	84	91.3%
	Side Effects: Numbness, Irregular Bleeding, Headache	0	0.0%	1	5.6%	7	12.3%	8	8.7%
Sec4_40	No Comment	4	23.5%	2	11.1%	8	14.0%	14	15.2%
	Health education in the community	1	5.9%	4	22.2%	8	14.0%	13	14.1%
	Community awareness on the availability & accessibility of EC at facilities	1	5.9%	5	27.8%	9	15.8%	15	16.3%
	Competence on Providing & Availing EC	11	64.7%	7	38.9%	32	56.1%	50	54.3%
Total		17	18.5%	18	19.6%	57	62.0%	92	100.0%

4.3.4.1 Training in FP and EC management

Table 4.7 indicates that only 46.7% (n = 43) of the participants trained in FP (Sec4_33), with most of those trained to practice in the Engela district (n = 30; 56.7%). In addition, the findings show that those who received training in both FP and ECs (Sec4_34) were fewer, with only 15.2% (n=14) of the participants reportedly saying ‘yes’ to the question. This question was important because the introduction and implementation of ECs in Namibia was only done in 2013. As such, any PHC provider trained before 2013 might

not have information about ECs, and this lack of training in FP and EC can negatively affect the practice of ECs. Therefore, one could argue that those who were not trained in FP would not be competent to provide ECs. Previous scholars, such as Shakya et al., (2020), argued that those who had received EC education were more likely to provide EC counselling during routine FP counselling and were more knowledgeable about ECs.

4.3.4.2 Availability and provision of EC

A follow-up question on the availability of ECs at their facility (Sec4_35) indicated an average EC availability of 91.3%, with Okongo district having 100% availability, Eenhana with 88.9% and Engela with 89.5% availability. In Namibia, all public PHC facilities are expected to provide FP and EC as part of reproductive health services. However, despite having a high EC availability, their participants had little experience providing ECs to clients (Sec4_36), with only 38% of the participants reportedly providing ECs to clients. The results show that Eenhana district had the highest number of participants that provided ECs to clients (55.6%), despite having the lowest number of those trained in FP and ECs (5.6%). The findings imply that the centres in Eenhana district had the highest number of clients needing ECs, while they were the least trained to handle EC cases. In a similar study conducted among Barbadian and Jamaican healthcare providers in 2013, nearly all of the respondents refused to dispense ECs, citing medical contraindications, recent use, method unavailability, safety concerns, and discomfort prescribing it (Yam et al., 2006).

4.3.4.3 Prescribe ECs

Table 4.7 indicated that only 38% of the respondents who had dealt with EC clients were able to prescribe ECs correctly. The majority 62% could not prescribe ECs correctly

(Sec4_37). The poor prescription of ECs by the respondents indicated that either they lack the knowledge pertaining to ECs or they do not prescribe because of the negative attitude towards ECs. Hence it can be concluded that the practice of ECs by PHC providers is poor. Consequently, most cases under which ECs were prescribed (Sec4_39) in the Eenhana district centres were for unprotected sex the night before or a busted condom (44.4%). While information given to clients concerning EC (Sec4_38) mainly was given after a busted condom or unprotected sex (32.6%), forced sex, rape cases or abortion requests (25%), and general services or during screening (19.6%). The findings are consistent with the literature, which stated that the ECs methods were necessary to reduce the rates of unintended pregnancies and should be given to rape victims, women who had experienced condom failure, and women who had missed a contraceptive pill (Yam et al., 2007). In support, Oriji and Omietimi (2011) study on medical doctors in Port Harcourt revealed that the commonest indication for EC was rape at 76%, followed by incestuous sexual intercourse at 46% and missed pills at 36%.

Regarding the side effects caused by prescribed ECs (Sec4_41), only 9.7% of the participants reported side effects like numbness, irregular bleeding, and headaches. Lastly, the participants' suggestions for improvement (Sec4_40) mainly were related to competence on providing and availing EC to clients (54.3%). In conclusion, the overall practice of EC by the respondents was poor, evidenced by less than 50% of the correct responses. Thus, an educational training programme should emphasise EC knowledge and practice. Improvements of the study respondents' knowledge regarding ECs would positively impact their practice towards ECs.

4.4 PRESENTATION OF THE FINDINGS FOR OBJECTIVE TWO

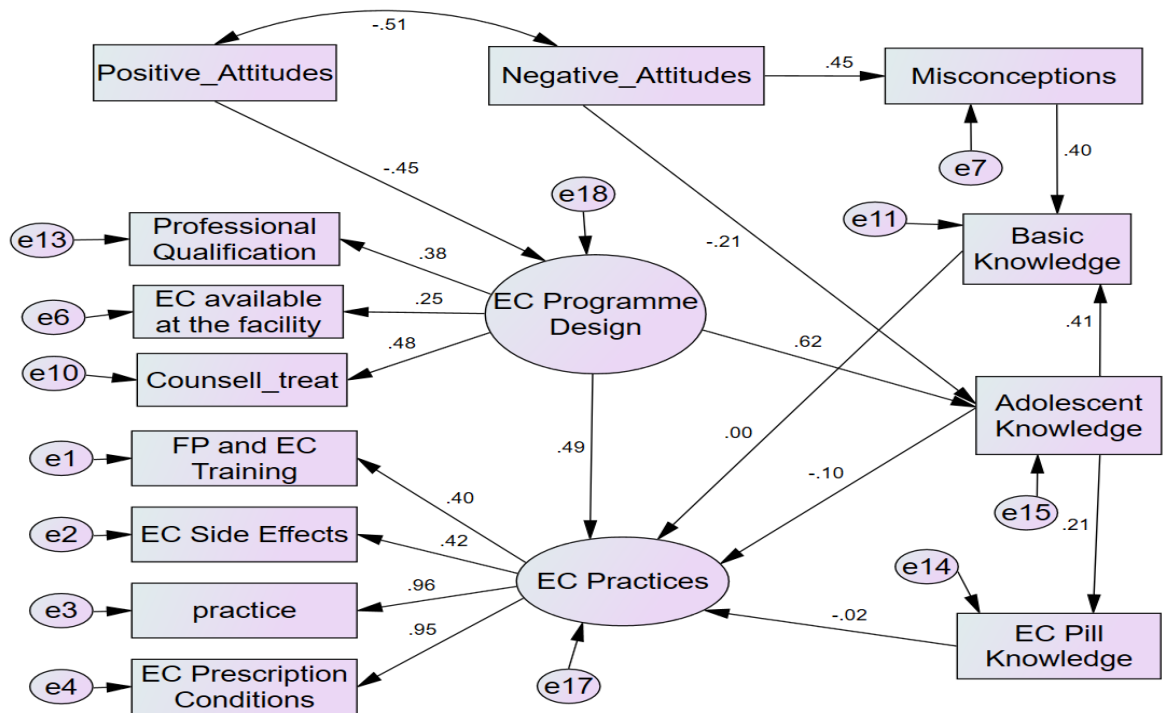
The previous discussion focused on the results of the respondents' knowledge, attitudes, and practices regarding ECs. The following discussion focuses on the relationship between demographic characteristics and PHC providers' knowledge, attitude, and practice regarding EC management.

4.4.1 Association of demographic data, knowledge, attitude and practice

Figure 4.3 shows the association findings that the items were fitted within a SEM/CFA model. The CFA model fit measures were acceptable, which implies that the model was both reliable and valid for interpreting the associations and relationships between the factors and items related to the knowledge, attitudes and practices that support PHC providers regarding the management of ECs. *Figure 4.3* depicts the CFA model, which shows four main factors related to the knowledge, attitudes, practices, and EC programme. The knowledge factors were loaded around the 'Adolescent factor'. The attitude factors were loaded around the negative and positive attitudes factors. While the practices factors were around the ECs practices factors, and the ECs programme design factors had three factors loading on it. The association of the demography, knowledge, attitudes, and

practices are thus interpreted using the standardised total effects results presented in Table 4.8.

Figure 4. 3: CFA model linking demographic data, knowledge, attitude, and practice



Measure	Estimate	Threshold	Interpretation
CMIN	88.773	--	--
DF	59	--	--
CMIN/DF	1.505	Between 1 and 3	Excellent
CFI	0.910	>0.95	Acceptable
SRMR	0.096	<0.08	Acceptable
RMSEA	0.074	<0.06	Acceptable
PClose	0.110	>0.05	Excellent

Cutoff Criteria*

Measure	Terrible	Acceptable	Excellent
CMIN/DF	> 5	> 3	> 1
CFI	<0.90	<0.95	>0.95
SRMR	>0.10	>0.08	<0.08
RMSEA	>0.08	>0.06	<0.06
PClose	<0.01	<0.05	>0.05

Figure 4.3 indicates that the model fit measures were acceptable, which implies that the model was both reliable and valid for interpreting the associations and relationships

between the factors and items related to the knowledge, attitudes and practices that support PHC providers regarding the management of EC. Figure 4.3 depicts the CFA model, which shows four main factors related to knowledge, attitudes, practices, and EC programme design. The knowledge factors are loaded around the ‘Adolescent factor’. The attitudes factors are loaded around the negative and positive attitudes factors. While the practices factors were around the EC practices factors, and the EC programme design factors had three factors loading on it. The association of the demography, knowledge, attitudes, and practices are thus interpreted using the standardized total effects. The results are shown in Table 4.8.

Table 4. 8: Total standardized effects of the association demographic data, knowledge, attitude, and practice

Factors	EC Programme Design	Positive Attitudes	Negative Attitudes	Sec2 F3 Adolescent Knowledge	EC Practices
Positive Attitudes	-0.45				
Misconceptions	0.40		0.45		
Professional qualification	0.38	-0.17			
EC available at the facility (Sec4_35)	0.25	-0.11			
Counselling during treatment	0.48	-0.21			
Sec2_F3_Adolescent_Knowledge	0.62	-0.28	-0.21		
Sec2_F1_Basic_Knowledge	0.25	-0.11	0.10	0.41	
EC Practices	0.43	-0.19	0.02	-0.10	
Sec2_F2_Pill_Knowledge	0.13	-0.06	-0.04	0.21	
Practice (EC Prescribed: sec4_36,37,39)	0.41	-0.18	0.02	-0.10	0.96
Conditions for prescribing EC(Sec4_38)	0.41	-0.18	0.02	-0.10	0.95
EC Side Effects (Sec4_40)	0.18	-0.08	0.01	-0.04	0.42
Training in FP and EC (Sec4_34)	0.17	-0.08	0.01	-0.04	0.40

4.4.2 Positive attitudes

Table 4.8 depicts the valid relationships between the demographics, knowledge, attitudes, and practices. The findings show that the positive attitudes factor negatively influenced the EC programme design (beta = -0.45). The Positive Attitudes towards the EC factor are, in turn, influenced by the knowledge and competence of nurses in counselling (Sec3_27; beta = 0.49) and prescribing EC to patients (Sec3_15; beta = 0.78), as well as the affordability (Sec3_17; beta = 0.78), easy access and availability of EC at every health facility (Sec3_16; beta = 0.85). Table 4.8 indicates that the positive attitudes factor is negatively associated with the rest of the factors in the model. The findings are consistent with the argument that the current crop of nurses was mostly trained prior to the formal introduction of EC in Namibia. As such, despite having the resources for adequately providing and availing EC, there have been no programmes to support the management of EC fully.

4.4.3 EC programme design

The EC programme design factor is defined by the professional qualification (Sec1_6: beta = 0.38), the EC available at the facility (Sec4_35: beta = 25), EC counselling during treatment (Sec3_32a and c: beta = 0.48). Therefore, the design of an EC programme should target the professional qualification of the nurses (targeting the pre-2013 qualifications), the nature of EC availability at the facility (consider establishing an FP & EC department in the facility), and the integration of EC counselling in all treatments. Consequently, designing an effective programme for supporting the management of EC will directly depend strongly on the nurse's level of knowledge in adolescent-friendly EC (beta = 0.62) and EC practices (beta = 0.49).

4.4.4 Adolescents-friendly EC knowledge

The adolescents' friendly EC knowledge factor is influenced by EC pill knowledge (beta = 0.21), basic knowledge (beta = 0.41). These factors are, in turn, negatively influenced

by the EC practices factor (beta = 0.10). The adolescent knowledge factor also influences the participants' negative attitudes towards EC management and support (beta = 0.21).

4.4.5 EC practices

The EC practices factor is defined by four items which include FP and ECs training (Sec4_34; beta = 0.4), ECs side effects (Sec4_40; beta = 0.42), EC prescription conditions (Sec4_38; beta = 0.95), and the practice factor (sec4_36,37,39; beta = 0.96). Subsequently, the practice factor was defined by practices in the provision of ECs to clients (Sec4_36), methods used in prescribing EC (Sec4_37), and the recommended EC prescribed to clients (Sec4_39).

The findings of this study revealed a link between demographic information and knowledge, attitude, and practice. The findings of this study revealed a link between demographic information and knowledge, attitude, and practice.

- There is a significant relationship between age groups and basic knowledge (p=0.00), negative attitudes (p=0.01), positive attitudes (p=0.00), and program design (p=0.00). There is no significant relationship between marital status and adolescent knowledge (p=0.06), basic knowledge (p=0.65), pill knowledge (p=0.47), negative attitude (p=0.25), positive attitude (p=0.75), misconceptions (p=0.90) and EC practice (p=0.18).

There is no significant relationship between religion and basic knowledge (p=0.07), pill knowledge (p=0.21), adolescents' knowledge (p=0.98)- negative attitude(p=0.12), positive attitude(p=0.46) and EC practice (p=0.06).

- There is a significant relationship between professional qualification and fundamental knowledge ($p=0.01$), practices ($p=0.00$) and programme design ($p=0.00$), but no significant association with attitudes (negative attitude $p=0.29$, and positive attitude $p=0.42$).
- There is a significant relationship between work experience and fundamental knowledge ($p=0.02$), but no significant associations with attitude (negative attitude $p=0.17$), positive attitude ($p=0.45$) and practice ($p=0.39$)

4.5 DISCUSSION

The purpose of this study was to assess the knowledge and attitudes of PHC providers regarding the management of ECs among adolescents in the Ohangwena region of Namibia in preparation for an educational program. The findings reveal that a high proportion of PHC providers knew about ECs. Surprisingly, a few (21%) had never heard about ECs before. This means that those who do not know about ECs might be due to the fact that they had never received ECs training since its introduction in 2013. This contrasts the findings of a Turkish study (Asut et al., 2018) where most of the PHC providers knew about the EC methods. However, there is a lack of awareness regarding using copper IUCD as a method of emergency contraceptive. Despite the high efficacy of the intrauterine device, it is not known by providers thus, adolescents who may benefit from this method may be denied this option since it is not known. This is consistent with the findings of a similar study conducted in Ghana, which discovered that providers lacked detailed knowledge of the use of IUD as EC (Mohammed et al., 2019). Concerning the eligibility criteria for ECs use, this study revealed that the majority of participants at 76%

named women who had unprotected sex and a few (12 %) of the respondents had identified adolescents as appropriate candidates for using ECs.

Adolescents and young people are vulnerable groups who are at risk of unwanted pregnancies, but providers were unable to identify them as suitable candidates for use. This means that the PHC providers lack 'basic knowledge' on 'appropriate candidates' for ECs and when adolescents come to the health care facilities, they might be denied ECs, which puts them at risk for unwanted pregnancies. This is contrary to the study done in Ghana where participants believed that adolescents could use ECs (Mohammed et al., 2019). According to the findings of this study, most PHC providers are aware that the EC pill can be used in rape situations and condom breakage, but only 16% are aware that emergency contraception can be given in the case of missed pills. This indicates that the providers are not aware of any other situations where ECs can be given other than rape and condom breakage. This could mean that PHC providers might not give ECs in situations other than rape and condom breakage. This contradicts a study conducted in Turkey, in which less than 20% of participants were aware that ECs are also used in cases of contraceptive failure(Asut et al., 2018).

In this study, nearly 64% of providers correctly stated that emergency contraception could be used within 72 hours of unprotected sex. More than 26%, however, did not know the correct time for the effective use of ECs; they either stated that it should be taken within 24 hours or during menstruation, which is incorrect, and some were honest enough to admit that they did not know. This means that providers who do not understand the proper time for effective use of ECs may end up denying ECs to adolescents or providing

incorrect information to clients in need of ECs about the proper time for practical use. A study done in Nepal among community pharmacy practitioners found that the respondents possessed a good knowledge of ECs (Shakya et al., 2020). In contrast, this study found that there is a lack of knowledge regarding ECs among health care providers in the Ohangwena region. As a result of health care providers' lack of knowledge, EC methods are not widely used.

This study found that PHC providers had negative attitudes towards ECs, strongly influenced by religious and cultural beliefs, while others were mildly influenced by their attitudes towards commercial sex workers (“Mildly” is when the findings on variables scored between 0.3 to 0.6 on Cohen, J. of 1988, *Statistical Power analysis for the Behavioural Science*). In contrast, the positive attitudes towards ECs are influenced by the knowledge and competence of nurses in counselling and prescribing ECs to patients, as well as the affordability, easy access and availability of ECs at every health facility. In comparison to previous studies in India, the health providers were more knowledgeable and had a more favourable attitude toward ECs (Sharma, 2017). A systematic review of health care workers' behaviours and the personal determinants of providing adequate sexual and reproductive health care services in Sub-Saharan Africa discovered that negative attitudes toward young people and adolescents using contraception, including ECs, are more likely to limit adolescent access to and utilization of ECs services (Jonas et al., 2017b).

In terms of misconceptions, this study revealed that nurses believed that making ECs readily available will moderately increase risky sexual behaviours and promote sexual

promiscuity among adolescents. Furthermore, they moderately believed that telling a sexually active unmarried adolescent to abstain from sex when they asked for contraception was preferable to giving them the ECs. Finally, the nurses were concerned about prescribing ECs due to potential side effects. Similarly, a study of young doctors in India found that the majority of doctors believed ECs encouraged irresponsible behaviour, sexually transmitted infections, and promiscuity (Panda et al., 2021).

This study indicated that only 46.7% of the participants had been trained in FP, with most trained practising in the Engela district (n = 30; 56.7%). In addition, the findings show that those who received training in both FP and ECs were fewer, with only 15.2% (n=14) of the participants reportedly saying yes to the question. The inclusion of this question was important because the introduction and implementation of ECs in Namibia was only done in 2013. As such, any PHC provider trained before 2013 might not have information about ECs, and this lack of training in FP and ECs can negatively impact the practice of ECs. Therefore, one could argue that those who were not trained in FP would not be competent to provide ECs. Previous research, such as that conducted by Hernandez et al. (2018a), argue that those who had received ECs education were more likely to provide EC counselling during routine FP counselling and were more knowledgeable about ECs.

Regarding the availability of ECs at their facility, an average of ECs availability of 91.3% was indicated, with Okongo district having 100% availability, Eenhana with 88.9% and Engela with 89.5% availability. In Namibia, all public PHC facilities are expected to provide FP and EC as part of reproductive health services. However, despite having a high

ECs availability, the participants had little experience in providing ECs to clients, with only 38% of the participants reportedly having provided ECs to clients. A similar study conducted among Kinshasa's private sector pharmacies on emergency contraception found that only 3 (4%) pharmacists refused to provide EC pills to the mystery clients. Two of the three providers who refused to deliver ECs insisted on a doctor's prescription to obtain the method, one also stated that he could only provide the pill to married women with the consent of their husband, and one stated that he was not comfortable delivering the pill because it had too many side effects (Hernandez et al., 2018).

This study results also indicated that 38% of the participants who had dealt with EC clients were the only ones able to write down the correct EC prescription. Consequently, most cases under which ECs were prescribed in the Eenhana district centres were for unprotected sex the night before or a busted condom (44.4%). While information given to clients concerning ECs mainly was given after a busted condom or unprotected sex (32.6%), forced sex, rape cases, or abortion requests (25%), and general services or during screening (19.6%). The findings are consistent with the literature, which states that the EC method was required to reduce the rates of unintended pregnancies and was best dispensed to rape victims, women who had experienced condom failure, and women who had missed a contraceptive (Yam et al., 2007; Haeger et al., 2018). In support, Oriji and Omietimi's (2011)' study on medical doctors in Port Harcourt revealed that the most typical indication for EC was rape at 76%, followed by incestuous sexual intercourse at 46% and missed pills at 36%.

In terms of the side effects caused by prescribed ECs, our study found that only 9.7% of the participants reported side effects like numbness, irregular bleeding, and headaches. Lastly, the participants' suggestions for improvement mainly were related to competence in providing and availing EC to clients (54.3%). In conclusion, the overall practice of ECs by the respondents was poor as evidenced by less than 50% of the correct responses. Thus, an educational training program should emphasize ECs knowledge and practice. Improvements in the study respondents' ECs knowledge would have a positive impact on their EC practice.

The age group and Basic Knowledge have a significant relationship ($p=0.00$), Negative Attitudes ($p=0.01$), Positive Attitudes ($p=0.00$), and Programme Design ($p=0.02$). There is a significant association between professional qualification and Basic Knowledge ($p=0.01$), Practices ($p=0.00$) and Programme Design ($p=0.00$). Working experiences and basic knowledge have a significant relationship ($p=0.02$). PHC providers, as expected, demonstrated greater knowledge and reported more frequent use of the ECs method than other health workers. As a result, emergency contraception training programs should target these other groups, especially since they make up the majority of FP service providers. Such training could be incorporated into medical and nursing curricula, and refresher sessions could be offered on a regular basis to those directly involved in FP services, including EC services. Namibian PHC providers require more information on all aspects of emergency contraception.

These educational efforts should concentrate on imparting specific knowledge, with a particular emphasis on correcting common misconceptions about the method. Providers

should be encouraged to educate all potential users about the method and to prescribe it to clients who need it. Communication about emergency contraception would also allow for opportunities for long-term contraceptive counselling. Effective educational interventions are likely to improve the method. Emergency contraception has a high potential for preventing unintended pregnancies, especially among adolescents

In conclusion, the study revealed a deficit in the knowledge, misconceptions, negative attitude and poor practice towards ECs by the PHC providers, which may be barriers to accessing ECs by adolescents. The positive attitude, programme design, negative attitude, adolescent's knowledge and ECs practice are emerged factors that associated with knowledge, attitude and practices of PHC providers. These findings have negative consequences for adolescents' usage of ECs; as a result, educational interventions should be provided to PHC providers on EC knowledge, demystification of misconceptions and the correction of the negative attitude towards EC services.

4.6 CHAPTER SUMMARY

The findings indicated a general lack of ECs knowledge, negative attitude towards ECs and poor practice of ECs by the PHC providers, probably because the respondents did not receive training in EC services. Conversely, contraception services were only introduced in FP service in Namibia in 2013. This general lack of training on ECs can have a negative effect on the practice of ECs and thus leads into misconceptions.

This study found that PHC providers had negative attitudes and misconceptions towards ECs. Moreover, these misconceptions often lead those exposed to ECs or having worked in FP services to have a negative attitude. Consequently, work experience in FP in this

study was contextualised in terms of the attitude of PHC providers towards ECs. According to the findings of this study, only 38% of the participants provided ECs to clients, indicating that the practice is poor. This study found, the professional qualifications of the participants had a significant influence on their knowledge, attitude, and practice. The findings indicate that the higher the education, the higher their knowledge of ECs. According to the findings of the study, the participants possessed sufficient professional qualifications to be considered qualified, skilled, and competent in the provision of FP and EC. Finally, the study developed a conceptual model that can be used to guide the development of an educational programme to assist PHC providers in managing ECs.

CHAPTER FIVE

CONCEPTUAL FRAMEWORK

5.1 INTRODUCTION

The previous chapter presented and discussed the study's quantitative component. The current chapter's goal was to conceptualise the key findings on EC management and connect them to practice (Dickoff et al., 1968). The importance of practice theory in this study was to show the connection between theory and practice. One of the comprehensive PHC activities is the provision of EC. Establishing programs necessitates a foundation in practical philosophical perspectives (Dickoff et al., 1968). The practical orientation theory was ideal for program development because it helped the researcher identify the main related concepts and describe their effects on the program. The concepts of agent, recipient, context, dynamic, and terminus served as the foundation for the development of the programme to assist PHC providers in the management of EC in the Ohangwena region: agent, recipient, context, dynamic, and terminus.

5.2 DEVELOPMENT OF A CONCEPTUAL FRAMEWORK AND THE RESEARCHER'S REASONING MAP

A conceptual framework is an interconnected set of theories about how a specific phenomenon works or is related to its components (Burns et al., 2018). A conceptual framework is defined as something that classifies or categorizes a phenomenon, explains the phenomenon of interest, expresses assumptions, and reflects a philosophical ban that allows a researcher to connect the study's findings to the body of knowledge and field of practice. The results of the situational analysis served as the foundation for this chapter in this study. The goal was to conceptualise the situational analysis findings and connect

them to practice and theory as informed by (Dickoff et al., 1968). The model aids in the establishment of the link between theory and practice. Dickoff et al (1968) survey list was considered. The six (6) questions were as follows: who or what performs an activity; who or what is the recipient of the activity; in what context is the activity performed? what is the procedure of the activity? what are the motivating factors? and, what is the end-point, also known as the terminus of an activity.

In this study, the agent was the researcher who carried out the activity to achieve the desired results. The activity's beneficiaries were PHC providers who received ECs training. The context was the health care facilities in the Ohangwena region where the training was conducted; the procedure is the development and implementation of an educational program to support PHC providers in the management of ECs for adolescents; the dynamics are the challenges faced by PHC providers in the management of EC for adolescents; and the terminus is the goal that the agent hoped to achieve after carrying out an activity, which is to knowledgeable and competent PHC providers capable of providing quality EC services to adolescents to prevent unwanted pregnancies.

Simultaneously, the researcher developed a reasoning map to demonstrate Dickoff et al. (1968)'s concept of practice-oriented theory. The map depicts the interaction between an agent and recipients within the context of a specific situation and action. The dynamics of the interaction were acknowledged in the researcher's reasoning map because the context and dynamics determine the procedure to be followed to achieve the desired outcome. The concepts in the map refer to the challenges that impede effective ECs management in the Ohangwena region. The reasoning map is presented in Figure 5.1.

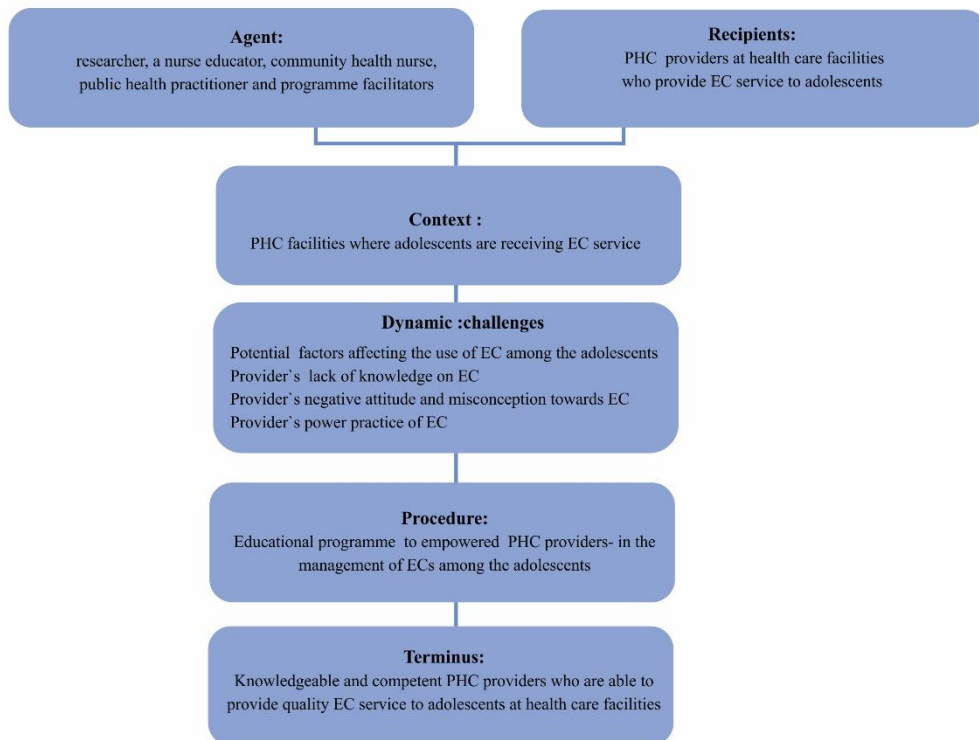


Figure 5. 1:Reasoning map

The elements of Dickoff et al. (1968) survey list, which were adopted for developing the reasoning map, are discussed below.

5.2.1 The Agent

Dickoff et al. (1968) define an agent as someone who provides a specific service in order to achieve the intended goals. To positively contribute to or change a recipient's life in this study, the agent must be knowledgeable. The agent in this study was a nurse educator, public health practitioner, and programme facilitator bearing the responsibility for crafting an educational program aimed to support PHC providers in managing emergency contraception among adolescents. A nurse educator and public health practitioner have a

role in designing a programme and educating health care providers about health - related matters, including FP and EC services. The agent is a lecturer at the University of Namibia; School of Nursing and has experience in teaching student nurses about reproductive health services such as FP and emergency contraception. The agent also educates other healthcare providers on health-related issues (including FP, ECs and other reproductive health services). According to Fry et al. (2021), a researcher must use professional knowledge and experiences to prepare activities, which is an educational program in this study.

The educational program in this study aims to address the factors associated with EC use among adolescents identified in the literature review, as well as the challenges identified during the situational analysis, such as providers' limited knowledge on ECs, providers' negative attitude toward EC use among adolescents, and poor practice on EC by PHC providers. An agent must have certain personality qualities in addition to knowledge and experience in order to establish positive interpersonal relationships with the recipients. Communication skills such as listening, questioning, paraphrasing, feedback, and summarising are examples of such personality qualities. The agent must build a relationship of trust with the recipient.

5.2.1.1 An agent's characteristic

From the illustration in figure 5.2, it is explicit that for an agent to conduct and facilitate a successful educational programme, the agent should possess certain characteristics and experiences that are indispensable, such as: Knowledgeable and competence on the ECs

educational programme by developing interpersonal skills, communication skills, facilitation skills, and personal attributes.

5.2.1.2 Knowledgeable and competent in the EC educational programme development and facilitation

An agent must be knowledgeable about ECs and the activities that will be carried out; the development and implementation of educational programs. Knowledge is defined as the information and understanding gained through education and experience (Bolisani & Bratianu, 2018). The agent being a nurse educator and public healthcare practitioner poses knowledge and experience necessary to develop and facilitate the program and promote active learning. *Figure 5.2* show the qualities of the agent.

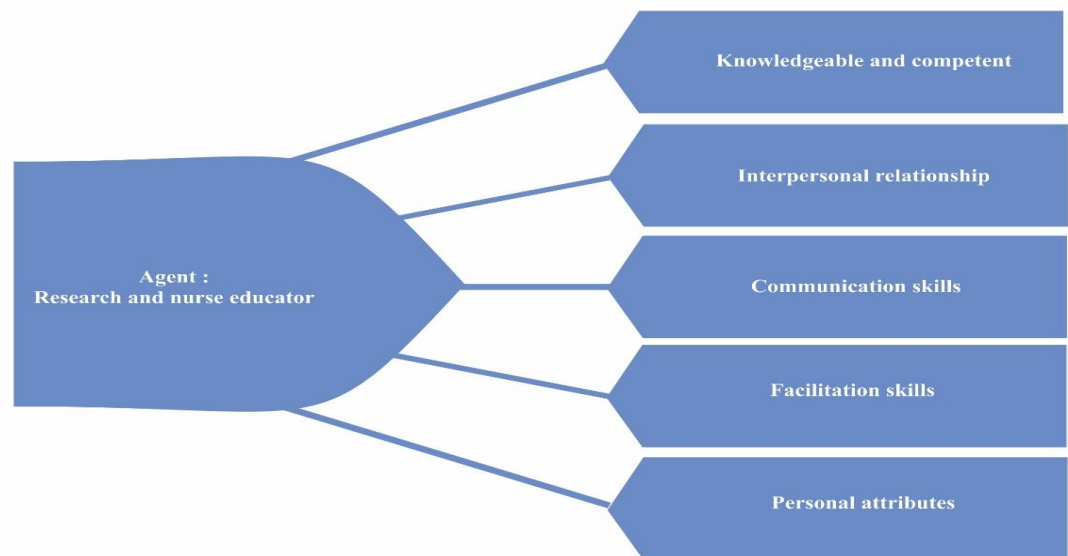


Figure 5. 2:Qualities of the agent

The researcher is required to be knowledgeable and competent in handling situations concerning ECs. The agent is a community nurse, nursing educator and researcher with the required experience to facilitate and promote active learning. The agent gained in-depth knowledge about the needs of PHC providers from the research findings. The research findings influenced the educational programme's content. Similarly, the agent is knowledgeable about the tasks that must be completed during the course of the educational program's implementation. According to Ahmed et al. (2019), a knowledgeable nurse educator interacts with the recipients and communicates professionally to generate learning opportunities for programme implementation. In addition, the agent needs to be competent, based on Fukada (2018) competence includes performing a task or activity.

Furthermore, Ahmed et al. (2019) state that an agent is competent when establishing a safe working environment, thereby implementing the educational programme. Other skills, such as management, planning, and problem solving, are equally important for the successful development and implementation of this study's educational program. The researcher gathered evidence regarding the difficulties faced by PHC providers in managing EC services. As a result, the educational program was created in response to the identified challenges. EC handouts were distributed to participants during the program's implementation. The handout discussed ECs, EC methods, side effects, dealing with myths and misconceptions about EC, counselling patients for EC services, factors associated with the use of ECs among adolescents, and FP guidelines and policy.

5.2.1.3 Interpersonal skills

Interpersonal skills are goal-directed behaviours used in face-to-face interactions to achieve a desired outcome. Interpersonal skills such as patience, empathy, trust, and respect are required of the agent in this study. Patience is, at its most basic, the ability to wait calmly in the face of disappointment, distress, or suffering (Bülbül & Izgar, 2017). Therefore, during the implementation of the educational program, the agent must be patient and thus be able to wait calmly in the face of frustration, distress, and pain.

Empathy is the ability to "put yourself in the shoes of another" or to "feel their pain." Empathy is an important human characteristic in many aspects of life (Ratka, 2018). In this study, the agent should show empathy by comprehending the participants' situation and putting them at ease without becoming emotionally involved. These values allow the agent to form positive interpersonal relationships with the participants (recipient).

A firm belief in the dependability, truth, and ability or strength of someone or something is referred to as trust (Wilkins, 2018). Trust is an important value in knowledge sharing. The agent tried to communicate openly with the recipients in order to build trust and allow them to communicate honestly with one another. In this study, the agent attempted to build trust by being honest and sincere, respecting the patient, asking open-ended questions, showing interest in their answers, and paraphrasing what they said. Instances where the participants seem confused, the agent took the time to elaborate and offer clarity to them.

Respect refers to feelings of being treated as an equal, as opposed to social recognition of needs or accomplishments (Schaefer et al., 2021). The recipients in this study were able to communicate openly with the agent, and their ideas and opinions were respected. To

make the participants feel appreciated, the agent addressed them by name, maintained eye contact, listened attentively, and respected their opinions during the educational program implementation (Schaefer et al., 2021).

5.2.1.4 Communication skills

Communication is transferring information from one person to another (Alhassan, 2019a). Good communication builds a genuine and meaningful relationship. When the intended message is delivered, received, and understood, communication is effective. As a result, an agent must be able to communicate effectively in order to convey knowledge to recipients. Both modes of communication must be consistent. Nonverbal communication factors such as eye contact, body language, hand gestures, and tone of voice all have an impact on the message being communicated. As a result, the agent should maintain eye contact, use hand gestures, and communicate in a friendly tone to encourage recipients to speak and talk openly (Alhassan, 2019a). Listening, speaking, questioning, paraphrasing, feedback, and summarization are all necessary skills for affective communication. Communication is effective when the intended message is delivered, received, and understood. In order to effectively convey knowledge to recipients, an agent must be able to communicate effectively. Both forms of communication must be consistent. Nonverbal communication elements such as eye contact, body language, hand gestures, and tone of voice all have an impact on the message being conveyed. As a result, the agent should maintain eye contact, use hand gestures, and communicate in a friendly tone, as this encourages the recipients to speak and talk openly (Alhassan, 2019a). Affective communication necessitates specific abilities such as listening, speaking, questioning,

paraphrasing, feedback, and summarization. To achieve this, the agent must possess all these communication skills to convey the message to the recipients.

Listening: Listening actively is the process of understanding what is being said and relaying feedback to the audience about the expressed feelings and the identified concerns (Alhassan, 2019b). As an effective listener, the agent should maintain eye contact, provide positive feedback, paraphrase ideas to ensure they were correct, and not interrupt anyone while speaking. This entails paying close attention to what recipients are saying, asking clarifying questions to ensure good understanding, and rephrasing or paraphrasing what another person said to ensure good understanding.

Speaking: Speaking is a unique type of communication skill (Alhassan, 2019b). However, speaking in front of a group can be a challenge to some individuals. Therefore, an agent needs to possess speaking skills for effective communication. To achieve effective communication, the agent should orient the recipients on the educational programme's content and then summarise the presentation at the end. To obtain feedback on the effectiveness of her speaking skills, the agent should pay close attention to the participants' body language during the presentations. The agent is an experienced public speaker who presents lectures to university students and reads speeches at public events.

Questioning: An agent must have questioning skills in order to help recipients think critically and learn to help recipients think critically and learn to help recipients think critically and learn more. Furthermore, questioning can enhance communication between an agent and a recipient and activates a workshop atmosphere. It can draw recipients' attention and motivate their interest in the subject of discussion. It is also able to widen

active participation (Yang, 2017). During the training, the agent should ask questions to check whether the recipients understood everything during the presentation to gauge whether the programme's objectives were on course to be achieved.

Paraphrasing: The goal of paraphrasing is to understand what someone is saying by restating the communication in such a way that both the agent and the recipients understand (Obreykova, 2021). In this study, for clarity purpose, the agent attempted to restate what participants said in her own words.

Feedback: Similarly, feedback is a valuable tool in a learning system. It allows the agent to monitor and improve recipients' performance in several ways. In this study, during the presentation, feedback from both the agent and the recipients was important as it helped the agent to understand whether they had gotten the message. Recipients receive a message and then encode it for them to participate in the communication process. An agent must ensure that the message was correctly delivered by observing the recipients' interpretation and reaction. As a result, a message sender also serves as a recipient of feedback. Hence, a message sender also acts as a recipient of feedback. Feedback has the potential to measure or detecting communication errors (Obreykova, 2021). During the programme implementation, the agent should give feedback to the recipients. They should be praised when they do well. This, in turn, will motivate them, and they will give positive feedback as a result.

Summarising: Lastly, summarising is an important factor in the learning situation. To summarise is to give a brief statement of the main points of the discussion. It is also a technique for obtaining the essential components of a source. In other words, it is a concise

summary of the key points from another text (Pejak & Pirc, 2018). In this case, the agent should summarise the main points at the end of each presentation to help recipients reflect on what was discussed and to connect the previous session to the next.

5.2.1.5 Facilitation skills

The provision of opportunities and resources to encourage and support the group in achieving its goals is referred to as facilitation (Cranley et al., 2017). The agent must create a learning environment that promotes learning activities, allowing recipients to achieve the desired learning outcomes (Cranley et al., 2017).

Facilitation is critical in the implementation of the educational program. To assist and guide the recipients in successfully implementing the educational program, the agent should have facilitation skills such as being prepared, flexible, active listening, and time management.

The agent is a researcher, nurse educator, public health practitioner, and programme facilitator with experience in FP and emergency contraception provision, including reproductive health services. The facilitator is a lecturer in the School of Nursing at the University of Namibia with facilitation experience. The facilitator should encourage the recipients to reflect on their experiences and share ideas about EC service provision among adolescents. She trains healthcare providers in health-related topics as a facilitator (including FP, emergency contraceptive and other reproductive health services). A facilitator, according to Dickoff et al. (1968), is someone who is acceptable to all group members, is substantively neutral, and has no decision-making authority. A facilitator

assists a group in better identifying, making decisions, and solving problems. The agent's role as a facilitator is to facilitate the implementation of the educational program for PHC providers in the Ohangwena Region regarding ECs management. Facilitation skills are important because they create an atmosphere that facilitates the learning process (Ahmed et al., 2019). The agent should interact with recipients and provide information to them to elicit their experiences and participation for better implementation of the educational programme.

5.2.1.6 Personal attributes

Personal attributes are characteristics that a person possesses that are long-lasting and inherent in the person's self and influence how the person interacts with and adapts to his or her environment (Hongdiyanto, 2018). The agent should have characteristics that will aid in the successful implementation of the program. In order to support and guide the recipients in facilitating the educational program, the agent must be open, a team player, accountable, and honest. The lack of support has a negative impact on the educational program's successful implementation. Another characteristic is that the agent should have a good sense of humour, be hardworking, helpful, highly culturally competent, honest, and trustworthy. Honesty is essential in human relationships and in providing services (Suud et al., 2020). Honesty is the obligation or responsibility imposed on a person in whom confidence or authority is placed. As a result, the agent had to earn trust by being truthful with the recipients and assuring them that all confidential matters discussed in the training would be handled with the utmost discretion. This included the information shared during the programme that was truthful and would not be discussed or revealed to

any third party without their consent. There had to be reciprocal trust and respect from the recipients. Another attribute is ‘neutrality’ which implies that people should be treated equally without discrimination. Thus, the agent should be objective and impartial during the implementation of the educational programme. Furthermore, the agent should have leadership skills, integrity, dedication, and honesty and be able to inspire the recipients. *Figure5.3* shows the characteristics and abilities of recipients.

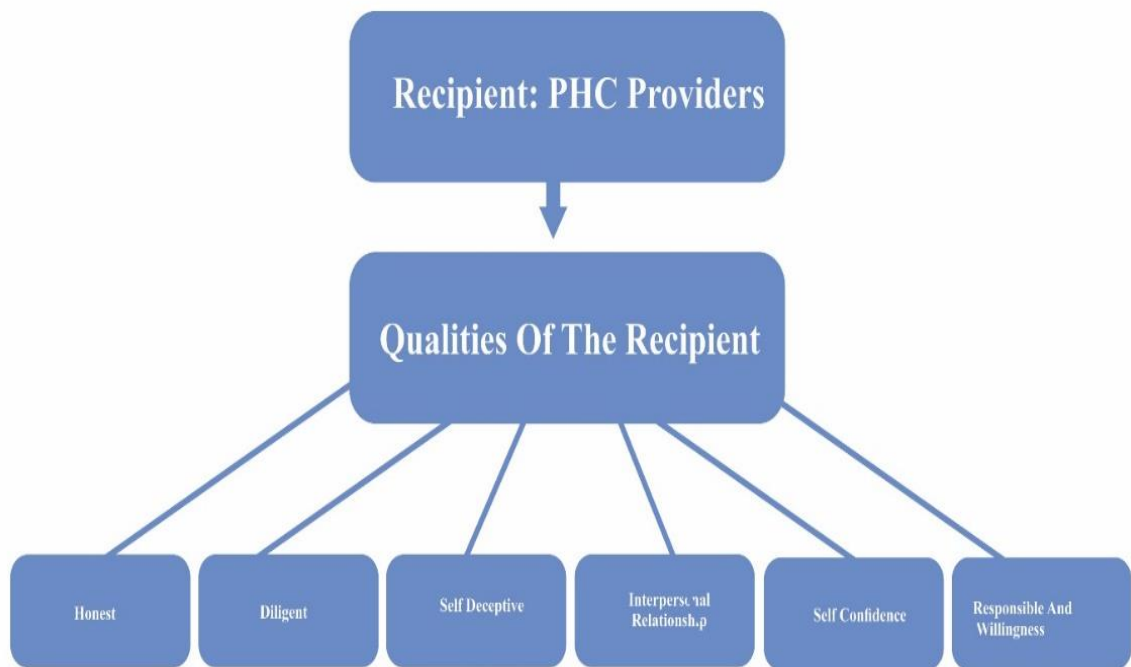


Figure 5. 3:Characteristics and abilities of recipients

5.2.2 Recipients

A recipient is someone who benefits from something or someone who receives action from the agent (Dickoff et al., 1968). The recipients in this study are the PHC providers at health care facilities who provide EC services to adolescents. They are the ones who face challenges in the routine delivery of EC services. As a result, they benefited from the activities planned by the agent. The study's findings indicated that PHC providers had limited knowledge on ECs, negative attitude towards ECs and poor practice of ECs. The designed educational programme should help the PHC providers to acquire knowledge, develop a positive attitude towards the practice of EC and overcome negative attitudes towards the use of ECs by adolescents. In order to achieve this and benefit from this educational programme, the recipients should possess some characteristics and abilities, as indicated in figure 5.3

5.2.2.1 Characteristics and the abilities of the recipients

Adult PHC providers were the study's recipients, and they possessed a variety of characteristics. A good PHC provider should have certain characteristics, such as honesty, diligence, self-discipline, good interpersonal relationships, self-confidence, responsibility, and a willingness to provide quality services.

Honesty: Honesty is defined as the appropriateness of words and behaviour, the conformity of words to factual events, or the conformity of actions to applicable regulations. These conformities become truth, truth in words and deeds, and correct rule-

following. Therefore, the recipient needs to be honest by telling the truth and giving sincere opinions about EC services among adolescents (Suud et al., 2020).

Self-discipline: Self-discipline is the ability to force yourself to do things you know you should do even when you don't want to, or to control one's emotions and overcome one's weaknesses (Gorbunovs et al., 2016). It is emphasised that self-discipline manifests itself in a variety of ways, including perseverance, restraint, endurance, thinking before acting, finishing what you start, and the ability to carry out one's decisions and plans despite inconvenience, hardship, or obstacles. Self-control and avoiding unhealthy excess indulgence in anything that could lead to negative consequences. The recipients must be self-disciplined, well-organized, having a plan, and being able to prioritize are all examples of self-discipline. People who are self-disciplined manage their time and complete the tasks assigned to them (Gillebaart, 2018). The recipients must remain focused on their activities and be determined to complete all scheduled activities.

Interpersonal relationships: A strong bond between two or more people is defined as an interpersonal relationship, which must be developed between PHC providers and adolescents (Szostek, 2019). They must collaborate during teamwork activities and share common goals and objectives, and recipients with positive interpersonal relationships must respect and trust one another's perspectives on ECs. Furthermore, they must communicate openly, calmly, about ECs with one another.

Self-confidence: Self-assurance is another quality that recipients must have. Individuals' self-confidence refers to their belief that they can complete a given task or achieve a specific goal (Ballane, 2019). PHC providers in this program must be willing to learn

about ECs and confidently provide EC services to adolescents. They must be motivated, and they must understand ECs and its benefits, which are critical in preventing unwanted pregnancies, as well as accept themselves in order to avoid worrying about what other people think about ECs. A self-assured PHC provider must accept the challenge of learning and providing quality EC services to adolescents. They needed to be comfortable with each other to work as a team because they were in a group.

Responsibilities and willingness: Responsibility means to be responsible for an act one undertakes (McGrath & Whitty, 2018). PHC providers are responsible for providing ECs to adolescents, they should be knowledgeable about ECs as well as involved in and accountable for providing ECs to adolescents. Furthermore, responsibility denotes a provider's availability and accountability to the people in her care. Therefore, the PHC providers are responsible for the provision of EC to adolescents in order to prevent unwanted pregnancies.

Willingness: The willingness to do something is a driving force in achieving goals. Adolescents should be able to receive ECs from PHC providers. Henry et al., (2021) define willingness as the intention and readiness to do something. They should also be willing to participate, which is an important characteristic of a nurse because the educational programme is voluntary and requires nurses to have a positive attitude to participate during programme implementation. Primary care providers should accept the responsibility of providing EC services to adolescents in order to prevent unwanted pregnancies.

PHC providers must also respect the clients who require EC services by protecting the privacy and confidentiality of the information entrusted to them. These qualities will assist PHC providers in dealing with challenges in their daily professional lives. The Nursing Council Act 2004 (Republic of Namibia, 2014) and the regulation that allows registered nurses and enrolled nurses to practice define the role of PHC providers.

5.2.3 Context

A context, according to Dickoff et al. (1968), is an environment in which an activity takes place. The context for this study was the health facilities in the Ohangwena region where adolescents received emergency contraception and where the educational program was implemented. This includes health care facilities such as hospitals, clinics, and health centres where PHC providers provide adolescents with emergency contraception. The outcome of an activity can be influenced by the context. The physical environment, legal and ethical environment, psychological environment, and social environment are all aspects of the context. As a result, the characteristics of the context must be considered. The characteristics of the context are depicted in *Figure 5.4* below.

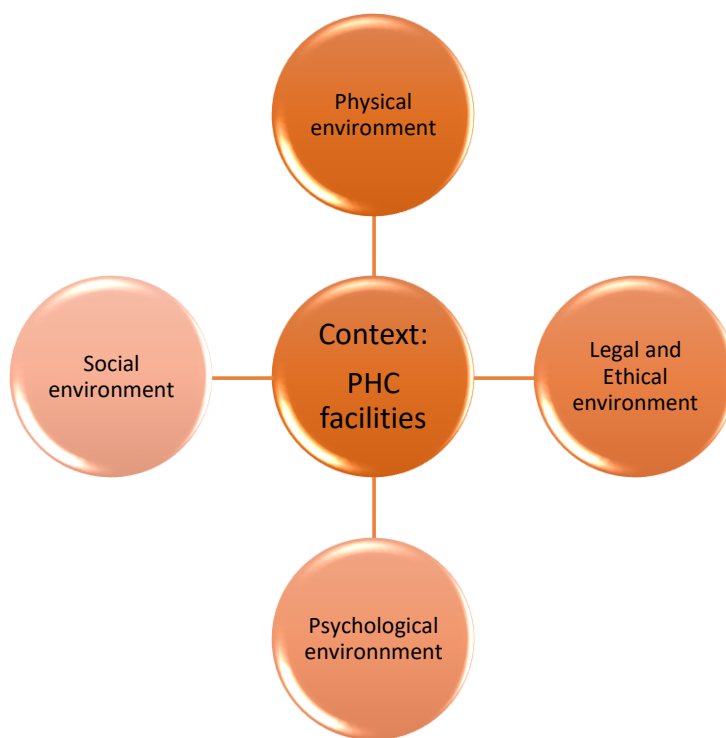


Figure 5. 4: Characteristics of the context

5.2.3.1 Physical environments

Physical environments are the perceived and objective characteristics of the physical contexts in which people live and engage in behaviours (Zhang et al., 2019). The physical environment is the setting in which the agent interacts with PHC providers who provide EC services to adolescent girls. The physical environment in this study refers to the context in which the training was conducted, which is Eenhana hospital. The physical environment should be free of background noise that would interfere with training. The learning environment should be conducive in order to improve PHC providers' knowledge, attitude, and practice of EC. The agent ensures that the training is conducted in a safe and conducive environment. The interaction of those participants in their physical environment was critical because it influenced the educational program's outcome. The

environment should have enough space for the number of training participants, as well as enough chairs and tables.

5.2.3.2 The legal and ethical environment

The legal and ethical environment in this study refers to the context in which PHC providers who provide EC to adolescents were assisted with legal and ethical issues. The environment was expected to include educational materials to aid and promote teaching by educating and advising PHC providers on the regulatory framework pertaining to their scope of practice, as well as FP and EC practices. Furthermore, the availability of FP, including EC policy, assisted in the training of PHC providers. As a result, empowering the environment includes policies, guidelines, and legislation that guide the practice of PHC providers, such as The Namibian Constitution, The Reproductive Health Policy, The FP Policy, The FP Guideline, the Health Professions Council of Namibia (HPCN) as an umbrella body, and various legislations on health professionals, such as the Code of Conduct (Nursing Act and regulations relating to the scope of practice of nurses (Government Gazette No. 6249, Notice No. 35 of 2017). Registered nurses, enrolled nurses, and medical practitioners are governed by HPCN legislation.

The aforementioned regulations ensure that health personnel carry out their duties in a professional manner. This goal is to create an environment that includes legal and ethical framework policies to assist recipients with actual service delivery information in the context. The HPCN legislations regulate the practice of registered nurses, enrolled nurses and medical practitioners. Registered nurses, enrolled nurses, and medical practitioners are governed by HPCN legislation. This goal was to create an environment that includes

legal and ethical framework policies to assist recipients with actual service delivery information in the context.

5.2.3.3 The psychological environment

The psychological environment is defined as the aspects of the workplace that influence workers' behaviour (Turner & Harder, 2018). Three types of psychological phenomena are considered by behaviour: affect (emotion, mood, psychological symptoms effective disorders), cognitive (e.g. attitude, perception, and decision making), and behaviours (e.g. effectiveness absence, motivation) (Turner & Harder, 2018). The psychological environment is a set of workplace characteristics that influence how employees feel, think, and behave. In this study, the psychological environment refers to the environment where PHC providers provide EC services to adolescents and how they cope with the nature of their work and understand their psychological wellbeing. Those PHC providers who had a negative attitude toward EC use among adolescents may have been influenced by their psychological and mental health. That environment causes the PHC providers to display a negative attitude towards adolescents. Therefore, the psychological environment needs to afford PHC providers an opportunity to debriefing. Effective debriefing would assist the PHC providers to address the negative attitude. The debriefing would enable them to gain knowledge, skills, and a positive attitude toward ECs as individuals. The psychological environment needs to include taking leave from work and taking part in recreation activities such as sports activities. These are essential to maintain physical and psychological well-being.

5.2.3.4 The social environment

The social environment is defined as the environment in which "defined groups of people function and interact" (Lee et al., 2020). The agent should create an enabling environment suitable for supporting PHC providers who provide EC services to adolescents with empowering training that includes competencies such as EC knowledge, attitude, and practice to provide quality EC services to adolescents in order to reduce unwanted pregnancies. Unwanted pregnancies are a social challenge that necessitates the participation of community members, family members, various organizations, and various stakeholders. Participants in this training program should thus interact with PHC providers who provide EC services to adolescents in a safe and supportive environment. This interaction should include discussions on how to solve the problem of unwanted pregnancies among adolescents. The community members, society and different stakeholders should take social responsibility for supporting programmes that are aimed at the prevention of unwanted pregnancies among the adolescents

5.2.4 Dynamics

The term dynamics refers to the energy sources or motivating factors that drive an activity (Dickoff et al., 1968). The dynamics for this study were the associated factors influencing EC use among adolescents and the challenges faced by PHC providers in providing ECs. These barriers were derived from the literature review as well as the study findings, and they were used to develop the educational program's content. *Figure 5.5* depicts the findings that were used to develop the programme's content.

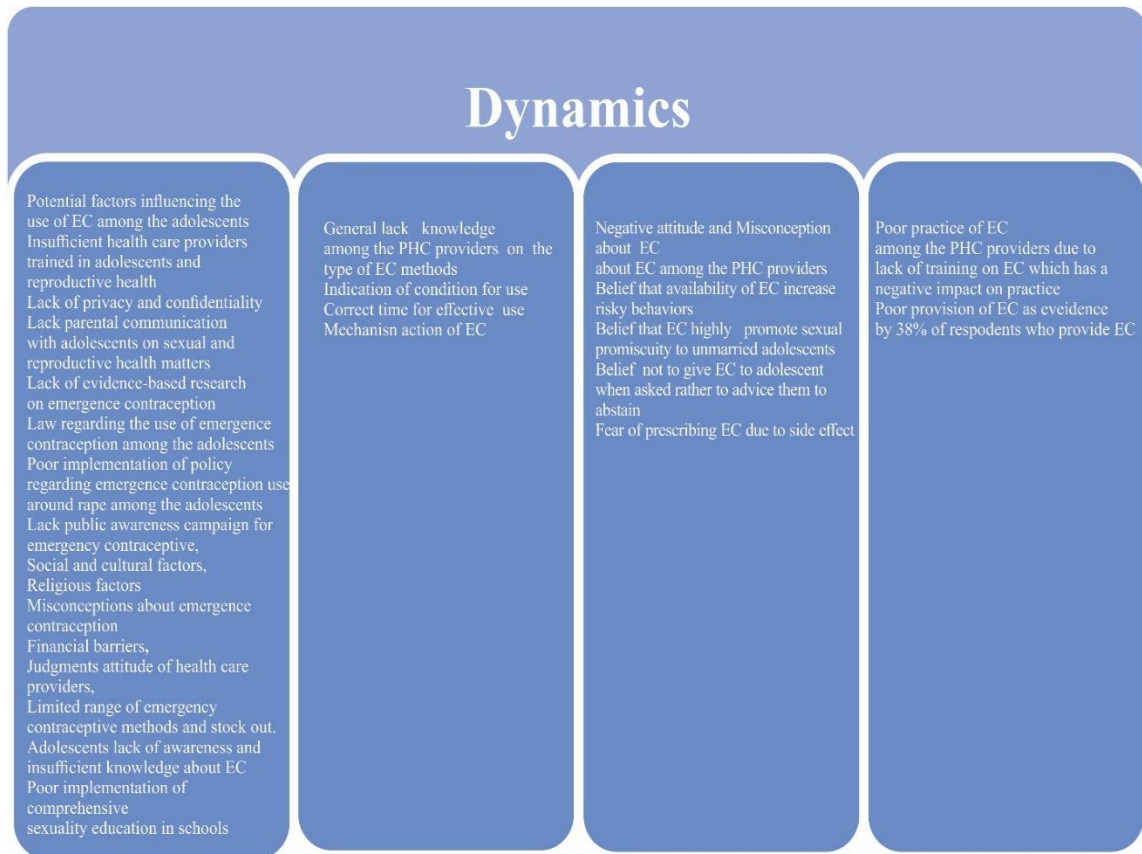


Figure 5. 5: Dynamics or motivating factors in this study

5.2.4.2 Potential factors affecting the use of emergency contraceptives among the adolescents

The following are the factors associated with adolescent use of emergency contraception:

Inadequate health care providers trained in adolescent and reproductive health, a lack of privacy and confidentiality, a lack of parental communication with adolescents about sexual and reproductive health issues, a lack of evidence-based research on emergency contraception, and a lack of legislation governing the use of emergency contraception among, poor implementation of policy regarding emergency contraception use around rape among the adolescents, lack of public awareness campaign for ECs, social and cultural factors, religious factors,

misconceptions about emergency contraception, financial barriers, judgmental attitudes of health care providers, limited range of emergency contraceptive methods and stock out, adolescents' lack of awareness and knowledge about EC, as well as the inadequate implementation of comprehensive sexuality education in schools. They are explained in Chapter two, page 45.

5.2.4.3 Challenges faced by the PHC providers related to EC service provision

Our study findings revealed that PHC providers are facing challenges related to EC service provision among adolescents, and they are described as follows:

5.2.4.3.1 Providers lack basic knowledge of EC

According to the findings of this study, primary health care providers have limited knowledge on some EC aspects such as the type of EC methods, appropriate candidates for EC, conditions for using EC, and the correct time for effective mechanical action of EC. The PHC providers thus needed more information on the above aspects through the educational programme.

5.2.4.3.2 Providers' negative attitudes and misconceptions towards the use of EC

The study's findings demonstrated that PHC providers have a negative attitude toward providing EC services to adolescents. Religion and cultural beliefs influence PHC providers' negative attitudes. PHC providers' negative attitude is a result of religions and cultural beliefs. Furthermore, PHC providers had misconceptions and the belief that the availability of ECs increases the risk of sexual behaviours and highly promotes sexual promiscuity among adolescents. Consequently, PHC providers as recipients of the

developed educational programme need the knowledge to change their negative attitude to increase the uptake of ECs by adolescents in the Ohangwena region.

5.2.4.3.3 Provider poor practice of EC

Additionally, study findings confirmed that PHC providers in the Ohangwena region have poor practices regarding the provision of ECs to adolescents. It was evidenced that they were not trained in FP and ECs which negatively impacted the practice of ECs. Poor practice is evidenced by only 38% of the PHC providers who prescribed ECs correctly to clients.

5.2.5 Procedure

Procedures are protocols or techniques that guide how activities should be carried out in order to achieve the goal (Dickoff et al., 1968). This process was followed in the development of the educational program in the study. The process was based on associated factors related to EC use among adolescents as well as the challenges identified in Phase 1 of the study's situational analysis. Figure 5.6 illustrates the procedure.

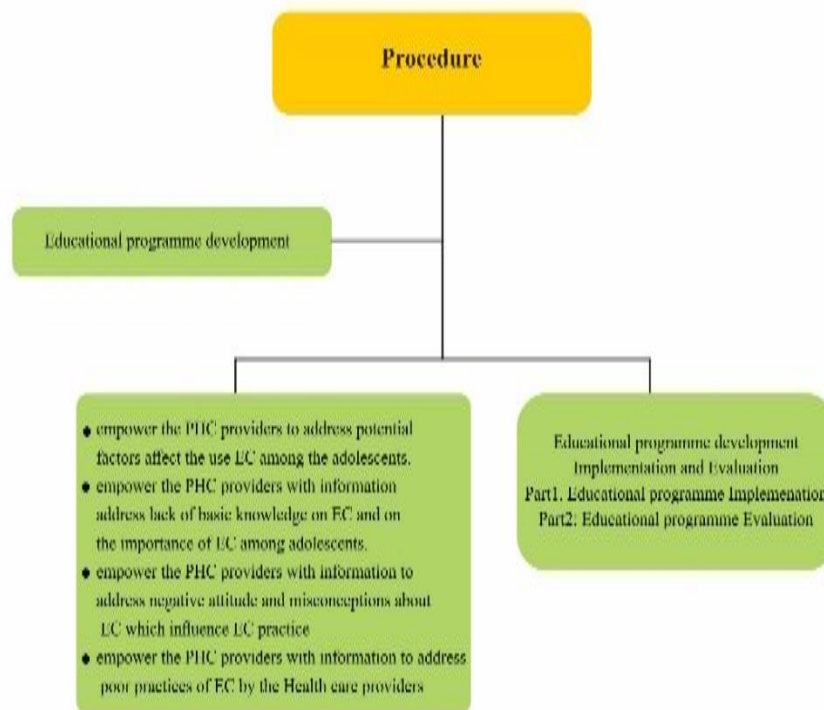


Figure 5. 6:Procedure of this study

5.2.5.1 Educational programme development to support PHC providers

An educational programme is designed to empower PHC providers regarding the factors that affect EC usage among the adolescents identified during the literature review and the challenges identified in the study findings. The Nicholls and Nicholls (1978) cyclic curriculum development model was used in the development of the educational programme. This model includes five (5) activities: conducting a situational analysis, choosing objectives, choosing and organising content, choosing and organising teaching methods, and assessing learning (Nicholls & Nicholls, 1978). The programme included the program's purpose, objectives, and structure, as well as the content, approaches, or teaching strategies discussed in Chapter seven. In this study, an educational program was developed to assist PHC providers in mitigating the identified challenges.

5.2.5.2 Implementation and evaluation of the educational programme

An educational program is a plan of action designed to achieve a long-term goal. The program was implemented using Kolb's experiential learning cycle and Knowles' model of andragogy in this study. The four stages of Kolb's experiential learning cycle were used: 1. exploring activity, 2. assimilation of new experiences, 3. in-depth understanding of experience, and 4. application of what was learned (Kolb et al., 2014).

Knowles' model entails creating a conducive learning environment, identifying learning needs, taking previous experience into account, setting clear objectives, and evaluating (Knowles, 1984). A suitable venue conducive to learning was used in this study. The participants' learning needs, as well as their prior knowledge and experience, were considered. Clear goals were established, and they were evaluated in terms of whether or not they were met.

The educational programme has been evaluated. Pre and post-tests were given to workshop participants in order to assess the program's usefulness and impact. The test questions were chosen in accordance with the objectives to be met. Every day, participants were given the opportunity to evaluate the program's implementation. This stage of program evaluation is covered in Chapter eight.

5.2.6 Terminus

A terminus is defined by Dickoff et al. (1968) as the end point of an intervention. Thus, the goal of this study was to improve PHC providers' knowledge, competence, and attitude

so that they can provide quality ECs to adolescents and prevent unwanted pregnancies. Figure 5.7 depicts how the implementation of the educational program is expected to empower PHC providers in managing EC services for adolescents.

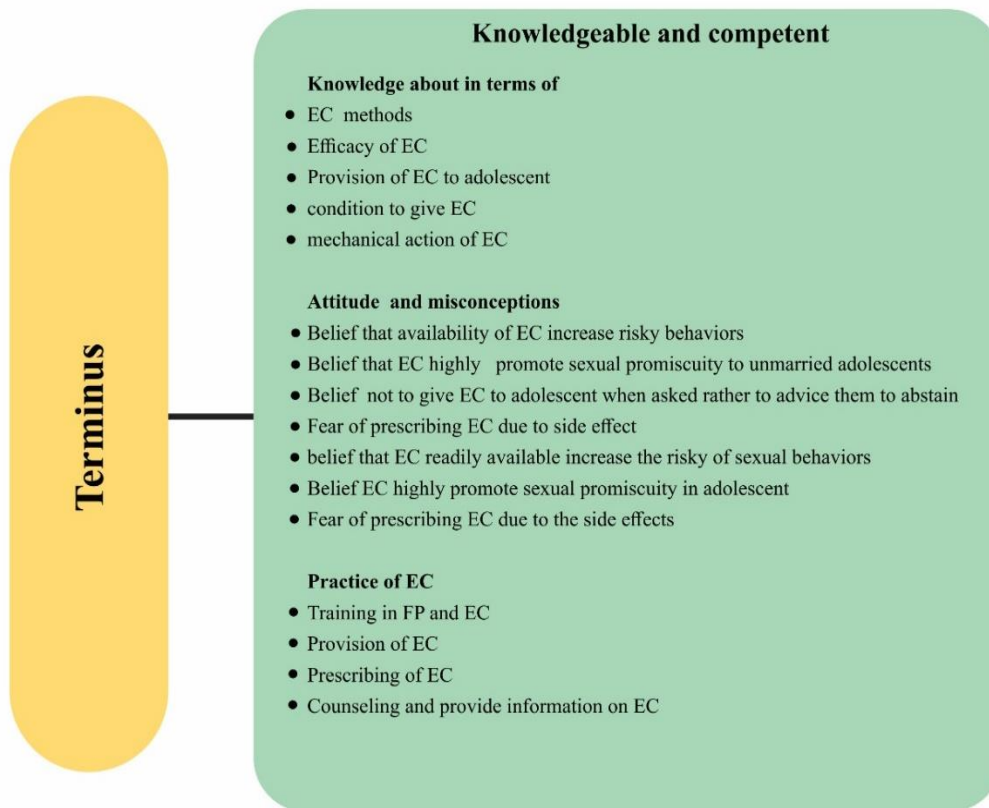


Figure 5. 7:Terminus of the study

5.3 CHAPTER SUMMARY

The conceptual framework of the educational program to assist PHC providers with ECs management was described. Dickoff et al.'s (1968) survey list of an agent, recipient, context, dynamics, procedure, and terminus was used to structure the conceptual framework. The educational programme designed to help PHC providers manage ECs is described in the following chapter.

CHAPTER SIX
DEVELOPMENT OF AN EDUCATIONAL PROGRAMME TO SUPPORT PHC
PROVIDERS IN THE MANAGEMENT OF EC AMONG ADOLESCENTS IN
OHANGWENA REGION

6.1 INTRODUCTION

This chapter focuses on developing an educational program for PHC providers in the Ohangwena region regarding the provision of EC, which is intended to support PHC providers in the Ohangwena region regarding the management of ECs among adolescents. The findings from the literature review and study results contributed to the educational programme's development.

6.2 JUSTIFICATION OF THE EDUCATIONAL PROGRAMME

The main purpose of this study was to assess the knowledge, attitudes and practices of Primary Health Care providers regarding the management of ECs among adolescents to develop an educational programme for PHC providers.

The educational program was created to assist PHC providers in the Ohangwena region with the management of emergency contraception among adolescents as a way to supplement their knowledge and skills. The long-term goal of this program was to have knowledgeable and well-informed PHC providers with positive attitudes and good service delivery practices who could provide EC to prevent unwanted pregnancies among adolescents in Ohangwena.

6.3 DEVELOPMENT OF AN EDUCATIONAL PROGRAMME

According to the study's literature reviews and findings, as illustrated in Chapter four (4), there are potential factors influencing the use of ECs among adolescents, and the study findings indicated that PHC providers lack basic knowledge about ECs, have a negative attitude and misconceptions about ECs, and practice ECs poorly. As a result of the literature review, data analysis, and development of a conceptual framework, there was a need for the development of an educational program to assist PHC providers with ECs provision. An educational program should have a specific focus and be based on a review of the literature and study results. The situational analysis conducted during the first phase of this study served as the foundation for the educational program. The program's structure included its goals, objectives, and content.

6.4 THE EDUCATIONAL PROGRAMME STRUCTURE

6.4.1 Title

This educational program is titled: *An educational programme to support PHC providers regarding the management of ECs for the adolescents in Ohangwena region, Namibia*

6.4.2 Aim

The aim of this educational programme is to empower the PHC providers to address potential factors that affect the management of EC for the adolescents.

6.4.3 Objectives

The objectives of this educational programme were derived from empirical data findings and conceptualised in Chapter six, namely:

- To empower the PHC providers with information needed to address lack of basic knowledge on ECs and the importance of ECs for adolescents
- To empower the PHC providers with information necessary in addressing negative attitudes and misconceptions about ECs which influence management of ECs.
- To empower the PHC providers with information to address poor practices toward ECs by the healthcare providers.

6.4.4 Recipient

As illustrated in the conceptual framework, the recipients are PHC providers at health care facilities who are the providers of EC service to adolescents. They are the ones who face difficulties in routinely providing EC services to adolescents, and thus they are the beneficiaries of the researcher's educational program. The PHC providers in the Ohangwena region are responsible for the provision of ECs among adolescents.

6.4.5 Facilitator

The facilitator is the researcher who collaborated with the Ohangwena Regional Management Team and the PHC supervisors for the three Ministry of Health and Social Services Districts (Eenhana, Engela, and Okongo).

6.4.6 Context

The setting is PHC health facilities in the Ohangwena Region, where adolescents receive emergency contraception and an educational program is implemented. This includes health care facilities such as hospitals, clinics, and health centres where PHC providers provide adolescents with emergency contraception.

6.4.7 Content of the educational programme

The programme content was created using information from the phase one (1); situational analysis and the literature review. The content covered potential factors influencing ECs use among adolescents as well as the challenges identified in the study findings. All of the activities were designed to assist and empower PHC providers in managing ECs among adolescents, thereby preventing unwanted pregnancies among this age group.

6.4.7.1 Potential factors affecting EC usage among adolescents

The literature and study findings from objectives 1 and 2 as conceptualised in Chapter five were used to identify potential factors influencing the use of EC among adolescents. Potential factors influencing EC use among adolescents must be addressed by arming PHC with knowledge. As a result, the goal of this program was to have knowledgeable and well-informed PHC providers on EC management among adolescents in order to prevent unwanted pregnancies among this age group. The following are the potential factors that influence adolescent EC use, and they are described as follows.:

6.4.7.1.1 Insufficient trained health care providers in issues related to adolescents sexual and reproductive health

One of the potential factors influencing the use of ECs among adolescents is a lack of health care providers who are specially trained and skilled to provide adolescent and youth-friendly sexual and reproductive health services. This is why, PHC providers must receive training in ‘sexuality and reproductive health’ of adolescents.

The content for adolescent health and reproductive health is as follows:

- adolescent growth and development,
- sexual education,
- Family planning (FP),
- safe motherhood,
- prevention and management of STIs
- HIV and AIDS
- Pregnancy prevention
- Access to prevention, diagnosis, counselling, treatment, care, information and services.

6.4.7.1.2 Lack of privacy and confidentiality

The lack of privacy and confidentiality between adolescents and health providers is a major barrier to adolescents accessing and using EC services. PHC providers must be receive training in maintaining privacy and confidentiality. The following are contents for privacy and confidentiality.

- Definition of privacy,
- Definition of confidentiality,
- Ensuring privacy,
- Ensuring confidentiality, and
- Benefits of ensuring privacy and confidentiality in the treatment of clients.

6.4.7.1.3 Poor parental communication of sexual and reproductive health matters with adolescents

Lack of communication with parents about sexual reproductive issues was also found to be a significant predictor of low EC uptake. As a result, PHC providers must be trained to encourage communication between parents and adolescents about sexual and reproductive health issues.

The content for parental communication on sexual and reproductive health matters with adolescents included the following:

- Definition of communication,
- Importance of communication between the parents and child, and how to promote it,
- Adolescent growth and development,
- Sexual education,
- Family planning (FP),
- Safe motherhood,
- Prevention and management of STIs,
- HIV and AIDS,
- Pregnancy prevention, and
- Access to prevention, diagnosis, counselling, treatment, and care information and services.

6.4.7.1.4 Lack of evidence-based research on emergency contraception

The absence of evidence-based research to assess EC service provision among adolescents and understand the major barriers. Evidence-based research can assist providers in identifying gaps and effectively and efficiently filling them. The PHC providers must be

provided with information on the importance of research activities. The content for evidence-based research on emergency contraception included the following:

- Define research,
- The type of research, and
- Purpose of carrying out research.

6.4.7.1.5 Adolescents' access to and use of emergency contraception is governed by law. Currently, the international law governing the use of ECs among adolescents is still unclear. However, PHC providers must be informed about the legal policy in place regarding the use of EC. The content for legal aspects that guides the use of EC among adolescents includes the following:

- The international regulatory landscape for emergency contraception,
- The Cairo International Conference on the population for 1994,
- The Bellagio conferences,
- International Emergency Contraception Consortium (ICE)
- The European Consortium for emergency contraception,
- Reproductive Health Policy,
- Gender policy,
- Family Planning (FP) policy, and
- Family Planning (FP) Guideline.

6.4.7.1.6 Poor implementation of the policy regarding emergency contraception use in the case of rape among the adolescents

There is poor implementation of the policy regarding the emergency contraception use around rape victims among adolescents in many settings. Therefore, it is vital to provide PHC providers with information concerning emergency contraception use in the case of rape among adolescents. The content for the policy regarding emergency contraception usage on adolescents in the case of rape is as follows:

- Namibian laws Combating Rape Act No. 8 of 2000
- Rape definition
- Provide HIV and STI testing, and
- Care and treatment to rape survivors.

6.4.7.1.7 Lack of public awareness campaign for emergency contraceptives

The lack of public awareness campaigns for ECs was identified as a potential factor affecting the use of ECs among adolescents. PHC providers need to be enlightened pertaining to the information provided for public campaigns on ECs. The content for the public awareness campaign for ECs includes the following:

- The definition of EC,
- Methods and types of EC,
- Time for practical use,
- Mechanism action of EC,
- Appropriate candidates for EC,
- Safety of EC,
- Indications and contra-indications for EC,
- Appropriate circumstances for EC,

- Where to obtain EC, and
- Benefits of EC.

6.4.7.1.8 Social and cultural factors

Adolescents' use of ECs is influenced by social and cultural factors. PHC providers should be aware of the social and cultural factors that influence adolescent EC use. The content for social and cultural factors includes the following:

- Premarital sex among adolescents,
- Society norms about contraceptive use,
- Adolescents' community beliefs about the use of EC and
- Social exclusion and stigmatisation of adolescents.

6.4.7.1.9 Religious factors

Adolescents' use of ECs is influenced by their religious beliefs. Religious beliefs that influence the use of EC among adolescents must be considered by PHC providers. The content for religious factors includes the following:

- Premarital sexual intercourse among adolescents,
- Sexual abstinence, and
- Religious belief on the use of ECs.

6.4.7.1.10 Misconceptions about emergency contraception

Misconceptions towards the use of EC are a major barrier in receiving ECs promptly, thus contributing to EC's low uptake. Therefore, PHC providers need to be cognisant of the misconceptions about emergency contraception. The content regarding misconceptions about emergency contraception includes the following:

- EC causes abortion,
- EC causes congenital disabilities should pregnancies occur,
- EC is dangerous to a woman's health,
- EC encourages risky sexual behaviours.
- EC causes infertility, and
- Only commercial sex workers use EC.

6.4.7.1.11 Financial barriers

Financial barriers contribute to the low uptake of ECs among adolescents due to the unaffordability of such, and as such, PHC providers need to be made aware of the financial challenges that adolescents face which contribute to the low uptake of ECs. The content about financial barriers includes the following:

- Transport to health care facilities,
- Long distance to health care facilities,
- Provision of EC at outreach services,
- The cost of EC at a private pharmacy, and
- Location of the health care services.

6.4.7.1.12 The negative attitude of healthcare providers

When some healthcare providers discourage adolescents from seeking contraception services from health facilities, they demonstrate a negative attitude. Therefore, PHC providers should be informed about unprofessional behaviours of some health care

providers, which hinder access to ECs by adolescents. The content to address the negative attitude of health care providers are such as:

- Unfriendly attitude,
- Judgmental attitudes, and
- Yelling, scolding, and refusal/ denial of EC services to adolescents.

6.4.7.1.13 Limited range of emergency contraceptive methods and stock out

The limited supply of ECs in some facilities negatively affected EC utilisation among the adolescent PHC providers. Therefore, awareness regarding the effects caused by limited supply of EC in some facilities hinders access to ECs by adolescents. The content regarding the limited range of emergency contraceptive methods and stock out includes the following:

- Stock-outs of EC methods, and
- Shortage of EC supplies.

6.4.7.1.14 Adolescents' lack of awareness and poor knowledge about EC

Inadequate knowledge about ECs was a significant contributor to adolescents' low EC uptake. PHC providers must be made aware of adolescent lack of awareness and knowledge about EC, which contributes to low EC uptake. The following content is included to address adolescents' lack of awareness and knowledge about ECs:

- The definition of ECs,
- Methods and types of ECs,
- Time for practical use,

- Mechanism and action for ECs,
- Appropriate candidates for ECs,
- Safety of ECs,
- Indications and contra indications for ECs,
- Appropriate circumstances for ECs,
- Where to obtain ECs, and
- Benefits of ECs.

6.4.7.1.15 Poor school-based comprehensive sex education

Inadequate counselling tools and services, limited or no sexuality education within or outside of schools, and no or incorrect information about the safety and effectiveness of ECs all contribute to individuals' inability to make informed decisions. PHC providers need to be provided with information about comprehensive sex education in schools. The content for comprehensive sex education in schools includes the following:

- Definition of comprehensive sexuality education,
- Reproductive development,
- Contraceptives,
- Prevention of pregnancies,
- Prevention of HIV and STI, and
- Benefits of comprehensive sexuality education.

6.4.7.2 Healthcare providers' knowledge of the emergence of contraception

One of the challenges affecting PHC providers' management of EC among adolescents was identified as a lack of basic knowledge of ECs. As a result, PHC providers should be equipped with information to address adolescents' lack of basic knowledge about ECs and the importance of ECs. The content on basic knowledge about ECs includes the following:

- The definition of ECs,
- Methods and types of ECs,
- Time for effective use,
- Mechanism action of ECs,
- Appropriate candidates for ECs,
- Safety of ECs,
- Indications and contraindications for ECs,
- Appropriate circumstances for ECs,

- Where to obtain ECs, and
- Benefits of ECs.

6.4.7.3 Health care providers' negative attitudes and misconceptions about emergency contraception

The attitude of health-care providers was negative and misconceptions about ECs. Health care providers have some influence on adolescent emergency contraceptive behaviour, and their attitude can affect adolescents' ECs utilisation. Therefore, health care providers should be encouraged to avoid negative attitude and misconceptions about ECs. The content on ways to address the negative attitude and misconceptions about ECs include the following:

- All primary health providers should be aware of the ECs and be able to prescribe it,
- ECs should be available at every health care facility,
- Wider use of ECs is less expensive than abortion and unwanted pregnancies,
- ECs is used by all women of reproductive age groups, including adolescents,
- Although challenging to determine, adolescents should be given contraceptive counselling before becoming sexually active.
- ECs are used by all women of reproductive age, including adolescents.
- ECs are used by all women of reproductive age, including adolescents.
- The prescription of ECs should be based on professional scope of practice rather than religious and cultural beliefs but rather based on the professional scope of practice.

The content on ways to address misconceptions about ECs and common misconceptions about EC includes:

- People believe that ECs promotes sexual promiscuity among adolescents,
- Easy access to ECs promotes risky sexual behaviours,
- It is better to tell sexually active unmarried adolescents to abstain from sex when they ask for contraceptives rather than to give them,
- Some health care providers fear prescribing EC because of the possible side effects,
- Belief that ECs are used only by commercial sex workers, and
- Dealing with these myths and misconceptions about EC.

6.4.7.4 Health care providers' practice on emergency contraception

Health care providers had poor practices with regards to emergency contraception. Health care providers have some influence on adolescent emergency contraceptive behaviour and their practice can affect adolescents' emergency contraceptive utilisation. Health care providers should also be trained to avoid the poor practice of emergency contraception. The content to address poor practices of emergency contraception includes the following:

- Training of health care providers in FP and EC,
- Availability and provision of EC at the health care facilities,
- Methods of EC,
- The recommended regimen (pills identification, dose and timing),
- Common side effects and their management,
- Indications and contra indications,
- Counselling and provision of EC information to clients,
- EC prescribing in health care facilities,
- EC availability in health care facilities and outreach points.
- Benefits of EC.

6.4.8 Teaching method

During the educational program, teaching methods such as lectures, group discussions, role-playing, and brainstorming would be used.

6.4.9 Educational approach

The educational program's structure was created for PHC providers who provide EC services to adolescents and is based on Knowles' adult learning theory (2012), Nicholls' cyclical curriculum development model, and Kolb's experiential learning theory.

6.4.9.1 Knowles' adult learning theory

Adult learning theory is based on a set of assumptions about how adults learn (Knowles, 1984). According to Knowles, there are some principles for facilitating adult learning. These principles were used in the development and implementation of an educational program to assist PHC providers in managing emergency contraception among adolescents. Adult learners, according to Knowles, are mature and should be involved in the planning and evaluation of learning activities. Adult learners have personal experiences and learn through experiences. They make use of their previous experience. Adult learners are self-directed; they learn what they believe will benefit them in their personal lives, and adult learners must understand why they are learning new knowledge before agreeing to participate willingly in the learning. This theory was significant because, in the context of the educational program, the facilitator attempted to persuade PHC providers to participate in the training by emphasising the benefits of acquiring current knowledge and new skills regarding ECs provision in order for them to incorporate the current knowledge and new skills into their daily practices.

Once PHC providers appreciate the need to acquire current knowledge and new skills, they would be ready to learn and to actively participate in discussions during the training.

Unlike children, adults tend to take responsibility for their learning through active participation instead of being directed or lectured. Because they have the experience and use it as a resource, PHC providers are mature and should be involved in planning and evaluating their learning activities. Adult learners are self-directed; they learn what they believe will be useful in their personal lives (Knowles, 1984).

During this programme, reasons for specific activities, and different methods to be used would be explained to the participants and they would be evaluated according to their learning activities to determine whether the objectives have been achieved.

6.4.9.2 The cyclical curriculum development model proposed by Nicholls

Nicholls and Nicholls (1978) identified five steps that need to be considered when developing a curriculum. Figure 6.2 depicts the steps taken in developing an educational program for PHC providers to facilitate the appropriate provision of ECs.

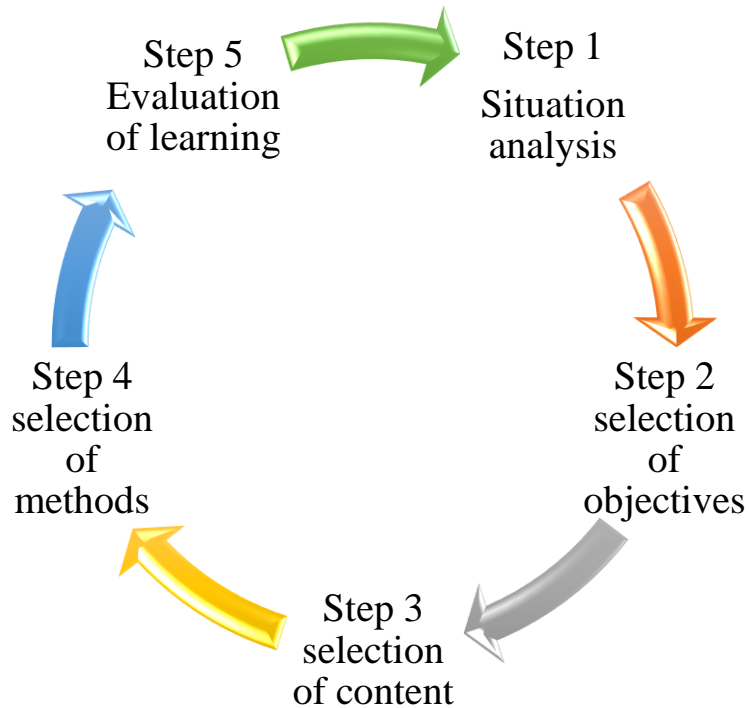


Figure 6. 1 Steps for Curriculum Development (Adopted from Nicholl, 1978)

As exemplified in figure 7.2 above, the first step according to Nicholl`s curriculum development model (1978) is a situational analysis which is the research itself.

The four steps for Curriculum Development (Adopted from Nicholl, 1978) were followed. According to Nicholl`s curriculum development model (1978), the first step is situational analysis, which is the research itself. This was conducted in the first phase where areas of concern were identified through literature review and the study findings. Potential factors influencing EC use among adolescents include a lack of basic knowledge about ECs among PHC providers, a negative attitude and misconceptions about ECs among PHC providers, and poor EC practice among PHC providers.

The second step is to choose objectives. The educational program's objectives were chosen as outlined in 6.4.3, and they were based on the literature review and situational analysis findings.

The third step is to choose and organize the content. The educational program's content was chosen and organized in accordance with the findings and objectives (the content is discussed later in this chapter 6.4.7).

The fourth step is method selection. The methods or strategies employed during programme implementation were chosen based on the content and objectives to be addressed. The methods used are discussed in the following chapter seven.

The final step is to assess learning. Following the completion of the activities, the learning was evaluated to determine whether the objectives were met. This is covered in detail in the following chapter.

6.4.9.3 Kolb's experiential learning theory

People learn from direct experiences and active participation, according to Kolb's theory of experiential learning (Kolb & Kolb, 2017). The researcher considered Kolb's experiential learning cycle, as illustrated in Figure 6.2, when developing the educational program to support PHC providers in the management of EC among adolescents.

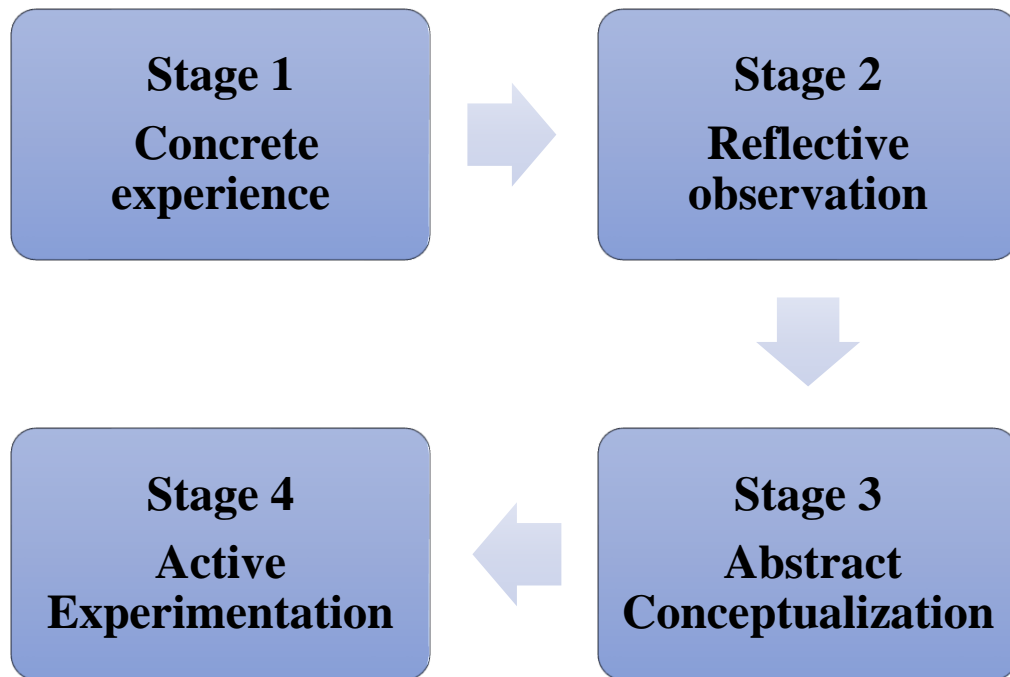


Figure 6. 2 Kolb `s experiential learning cycle (Adopted from Macleod, 2017)

Kolb's experiential learning cycle has four stages, as shown in figure 6.3. The researcher used Kolb's experiential learning cycle when developing an educational programme to assist PHC providers in managing EC in adolescents. Kolb's experiential learning cycle has four stages. The first stage is gained practical experience. During this stage, PHC providers investigate an activity by observing it objectively or by participating in it (Kolb & Kolb, 2017)

In this educational programme, the PHC providers acquired knowledge of ECs as method to prevent unwanted pregnancies. They received clarification of a negative attitude

towards ECs as method to prevent unwanted pregnancies, obtained skills for correct EC practices and reinterpreted their existing experiences on ECs as method to prevent unwanted pregnancies. PHC providers also, got new ideas about ECs from group discussions during the programme implementation.

Reflective observation is the second stage. At this point, PHC providers attempted to integrate new experiences in providing EC services as method to prevent unwanted pregnancies and draw new conclusions. In this educational program, PHC providers reflected on their previous experiences with EC service provision as method to prevent unwanted pregnancies and attempted to understand the discrepancies between past and current ECs service provision experiences.

Abstract conceptualisation is the third stage. At this stage, PHC provider participants attempt to gain a thorough understanding of new experiences in EC service provision as method to prevent unwanted pregnancies (Kolb & Kolb, 2017). Participants in the educational program for PHC providers reflected on current ideas about ECs as method to prevent unwanted pregnancies, which deepened their understanding of the need to modify their existing knowledge and attitude toward ECs and improve ECs service provision practice.

The fourth and last stage is active experimentation. This stage involves acting. In the educational programme, the PHC providers applied what they had learnt about ECs as method to prevent unwanted pregnancies. The application of this model is described in Chapter seven.

6.4.10 6.4.10 Process of educational implementation

In this study, the researcher followed the program process to create an educational program to help PHC providers manage emergency contraception among adolescents. The educational program was divided into three stages: orientation, work, and termination. The orientation phase covered the program's purpose, objectives, and logistics such as the location, date, and time of the two one-day workshops. The presentation of various sessions and group work activities was covered during the working phase, while the evaluation of the workshop activities was covered during the termination phase.

6.4.10.1 Orientation phase

During this phase, the researcher provided welcoming remarks, introduced the workshop's goal and purpose, and established ground rules for workshop participants. The participants introduced themselves, their workplaces, and the experience required to evaluate and contribute to the educational program's improvement.

6.4.10.2 Working phase

This phase focused on engaging participants in understanding the purpose and objectives of the educational program so that participants could imitate learners in real-life learning situations and provide accurate feedback to improve the educational program. Practical exercises based on role-playing an action were extracted for one of the modules used to demonstrate the need for an educational program to change the mind-set of PHC toward

a quality culture and meeting patient demand. Furthermore, the researcher gave the participants notes to read through the training material in order to gain an understanding and overview of the program's goals, objectives, and focus.

6.4.10.2 Termination phase

The participants evaluated the day's activities during this phase. Following the presentation of each topic, an evaluation was performed to determine whether there were any sessions that participants did not understand and required clarification, and if so, additional explanations were provided. This also allowed for any misunderstandings to be resolved. At the end of the training, the participants evaluated the entire program. This enabled the facilitator to assess the training's usefulness and effectiveness. At the end of the workshop, participants completed a post-training assessment test. The aim was to assess whether their knowledge and practice on EC had improved.

6.5 CHAPTER SUMMARY

This chapter described the program development process designed to assist PHC providers in providing EC. Based on the findings of the situational analysis and literature review, a program was created, guided by a conceptual framework based on Dickoff's survey list. The programme structure, including the process, approach, and content, was explained. This program was developed using a variety of models.

CHAPTER SEVEN

IMPLEMENTATION AND EVALUATION OF THE EDUCATION PROGRAMME

7.1 INTRODUCTION

The previous chapter focused on program development. This chapter focuses on the implementation and evaluation of the educational program developed by the researcher to assist PHC providers in the management of ECs for adolescents in the Ohangwena region. Part one (1) and Part two (2) comprise this chapter (2). Part one (1) pertains program implementation, and part two (2) program evaluation. Both however are covered in depth in this chapter. The program was completed over the course of two days at Eenhana hospital in the Ohangwena region.

Table7. 1 PART1: IMPLEMENTATION OF THE PROGRAMME

The program's content, the procedure used to carry out the planned activities, and the theories used during the program's implementation are all covered. A two-day workshop for PHC providers in the Eenhana districts was held.

7.2.1 Population for the implementation phase

The PHC providers providing EC services to adolescents in the Ohangwena region served as the research population for this implementation phase. Although invitations were extended to twenty-five (25) PHC providers, only twenty-one (21) attended the training

workshops. Twenty-one (21) participants attended the workshop at Eenhana hospital. This, translated into 84% attendance rate, which by all standards was a great success.

7.2.2 Sampling method

Because the target population was PHC providers providing FP and EC to adolescents in the Ohangwena region, a non-probability purposeful sampling method was used. The criteria that was employed to decide which PHC providers to invite was based on the healthcare providers administering FP and ECs, PHC providers had to be stationed in Eenhana, Engela and Okongo districts, and lastly, it the English language was a requirement for the PHC providers hence English was the mode of communication during the training workshops. Handouts were also in the English language.

7.2.3 The arrangement for the educational programme

The following arrangements were made to ensure the educational program's successful implementation:

7.2.3.1 The venue

District hospital conference halls were utilised. The hospital Senior Medical officers and Hospital Matron obtained permission to use the facilities. The training workshops took place on the 25th to the 26th October 2018 at Eenhana hospital in Ohangwena region.

7.2.3.2 Programme schedule

Each day, the programme was divided into three sessions: orientation, working, and termination. The facilitator and participants followed the program as planned; however, flexibility was acceptable. The programme was scheduled as follows:

A two days long (25-26 October 2018) training was conducted at Eenhana District Hospital from 08H30 to 17H00 with a 15 minutes tea break between 10H15 and 10H30, and a one-hour lunch break between 13H00 and 14H00. Twenty-one participants attended this training workshop.

7.2.3.3 Resources

Prior to the program's implementation, the facilitator organised the necessary training materials. The training materials were in English, the official language of Namibia. A laptop, projector, pens, flip charts, marker pens, and name tags were also provided. In addition, the facilitator covered the costs for tea and lunch and other resources not provided by the hospitals.

7.2.3.4 General guidelines

The five participants and facilitators agreed to establish ground rules that must be followed and adhered to throughout the two-day workshop. The ground rules were meant to contribute to the quality learning environment and adhere to the rule during the training.

The following were some of the ground rules set by participants:

- Cell phone on silent,

- Respect other participants' views,
- Active participation,
- Punctuality and flexibility, and
- No short -meetings

The participants were given the opportunity to express their expectations from the training, and the following were stated:

- Learn different types of ECs,
- Learn contraindications to ECs,
- Get information on the proper counselling of a client for ECs,
- Learn about the side effects of ECs.
- Learn the benefits of ECs, and
- Learn what people believe about the use of ECs.

7.2.3.5 Facilitation techniques

Facilitation techniques encourage a democratic way of decision-making in a workshop and contribute to the training outcomes (Martin et al., 2020). A facilitator is defined as "a person who is acceptable to all group members, substantively neutral, and has no decision-making authority and who assists a group in improving the way it identifies, solves, and makes decisions" (Hunter et al., 2017). A facilitator helps to structure and process interactions so that groups can function effectively and make good decisions." Facilitation techniques were used in this study to guide participants and assist them in learning, discovering their existing knowledge, and making decisions (Cranley et al., 2017).

The facilitators used a variety of teaching and learning strategies based on the assumption that participants were adult learners, as defined by Knowles' andragogy model, and that they had some experience with EC practices among adolescents.

Table 7. 1: Facilitation framework as adapted from Tinkering Studio (2015)

The aims for facilitation	Action	Procedure
Stimulate participants' initial interest	Welcome participants Introduce the icebreaker Introduce the activity and make opportunities for interaction available	Introduce yourself Performing the icebreaker Introduce participants to various materials Share examples that elicit a variety of responses
Sustain participation by following participants' ideas	Respect participants' ideas, including their mistakes and wrong turns Assist participants in their learning process	Examine the participants Pose questions to them. Take note of their suggestions Reply to statements or inquiries Instead of giving them instructions, make suggestions Demonstrate enthusiasm for their ideas

<p>Make connections with real-life experiences to broaden participants' understanding.</p>	<p>Encourage participants to learn more</p> <p>Try to connect or link the activities to the outside world, or provide real-life examples/experiences</p>	<p>Encourage participants to take a look around them</p> <p>Allow them to explain their ideas and define the next steps.</p> <p>Encourage trial and error</p> <p>Discuss how the experience was related to your previous experiences</p> <p>Celebrate unexpected and joyful moments</p>
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The following facilitation techniques were used during the programme implementation.

7.2.3.5.1 Group discussion

Group discussions proved to be an extremely effective facilitation technique for communicating information to PHC providers who provide EC services to adolescents (Nurmasitah et al., 2019). The participants were encouraged to participate in the discussion because doing so allows them to express their views or opinions on the topic at hand. PHC who provide ECs to adolescents were encouraged to share their ideas and experiences during group discussions in order to solve problems and promote understanding in this study. Participants discussed the attitudes, perceptions, knowledge, experiences and practices in groups then presented the discussed points in the plenary session. A group discussion aimed at encouraging active participation and to explore various points of view on specific topics (Nurmasitah et al., 2019). The use of group

discussions aided in the development of mutual trust and support among themselves. During the workshop, small and large group discussions were used. Seeing that all participants had the opportunity to exchange their ideas verbally, a group discussion was the best way to promote a conducive learning environment and convenient for teaching and learning.

7.2.3.5.2 Lecture

Lecturing is a teaching method by which the facilitator gives participants an oral presentation of facts or principles (Alaagib et al., 2019). This method is recommended for participants with little or no prior knowledge of the topic. Lectures have the advantage of effectively transmitting factual information to a large number of students (Alaagib et al., 2019). In this study, the researcher had to use lecturing method to present information on occasion, but always in conjunction with other methods. The lecture method was used in the study to promote effective learning and to encourage participants to participate actively.

7.2.3.5.3 Acting out roles

Role-playing is a pedagogical technique that is used in a wide range of contexts and content areas (Hidayati & Pardjono, 2018). It is typically based on realistic criteria, allowing participants to get as close to the real thing as possible. Role play was used because it provided an advantage for the participants by increasing their involvement. The facilitator observed that role-playing taught participants empathy and an understanding of

various perspectives on the human dilemma. The facilitators also observed participants who assumed a particular characteristic, learning and acting as the individuals had in real-life situations. During the preparation of this training's content, the facilitator created a relevant scenario, which was then presented to the participants during the workshop so that they could role-play it. The scenarios included the participants' roles and relevant information, and they were then given time to complete the task (Hidayati & Pardjono, 2018). The agent created two scenarios for the recipients to act out during the implementation of this training program. Below is an example of a role play that the participants played out.

A 15-year-old girl has heard about ECs from friends and believes she may require it, but she is afraid to try it. After all, she fears it will make her infertile and unsafe because she smokes. She has been pregnant before, had an abortion, and is terrified of having another one. She has not been sexually active in a long time, but she is beginning a new relationship. She is eager to learn more about ECs. The purpose of this role play was to introduce the topic of ECs to the participants to learn about the skills used in real-world situations, and to provide room for critical observation.

7.2.3.5.4 Ice breaking

Icebreakers were another technique that the facilitator used. An icebreaker is an activity, game, or event used to welcome and warm up participants in a meeting, training class, team-building session, or other event. Any event that requires people to interact comfortably with one another and with the facilitator is an opportunity to use an icebreaker

(Yeganehpour, 2017). Various icebreakers, such as the birthday game and interviews, were used in this training workshop

7.2.3.5.5 Debate

Debate promotes the exploration and appreciation of opposing points of view (Argyropoulou, 2021). Participants were given the opportunity to debate ECs related issues. Debating was used to allow them to explore issues in a safe environment, listen, and enjoy learning. The facilitator chose the topic for discussion and compiled guidelines such as how long each participant could speak for. Throughout the debate, all participants were required to listen to each other 's arguments of others. Finally, a debate scenario described below was used for them to evaluate the programme.

Ms Jane is a 15-year-old and a first-time FP client who had been involved in unprotected sexual intercourse within 24 hours. She chose ECs as her preferred method after discussing her contraceptive options with a healthcare provider. She had never used ECs before, but she listened carefully to the explanation. Debate whether you will advise this client about EC. Would you provide ECs to this client, and what information and instruction would you give her?

7.3 PART1: PROGRAMME IMPLEMENTATION

As part of the program implementation, the facilitator led two-day workshops to assist healthcare providers in providing EC. The following is a description of the educational program's phases.

7.3.1 Description phases of the Education programme

Table 7. 2 :The education programme was implemented in the following phases

<p>Orientation phase:</p> <p>Participants are welcomed</p> <p>The workshop's introduction and history</p> <p>The workshop's goal and purpose</p> <p>Ground rules and expectations</p>
<p>Working phase:</p> <p>Pre-training evaluation test</p> <p>Activities focusing on general information about potential factors influencing ECs use among adolescents (lecture and group discussion)</p> <p>Activities addressing the lack of basic knowledge about ECs among the PHC providers (lecture and group discussion):</p> <p>Activities addressing negative attitudes towards ECs among the PHC providers (Debate and group discussion):</p> <p>Activities addressing the poor practice of ECs among the PHC providers (lecture and role play)</p>
<p>Terminal phase:</p> <p>Workshop discussion and evaluation</p> <p>Post-training evaluation test</p> <p>Workshop conclusion</p>

7.3.3.1.1 Orientation phase

The district PHC supervisors welcomed the participants to the workshop during this phase. Participants were asked to introduce themselves, including their name, position, and the name of the healthcare facility where they work. They were introduced to the workshop's purpose, objectives, and logistical arrangements. The purpose and objectives were thoroughly discussed so that the participants understood why they had been invited to the workshop. During this stage, they were also discussed expectations and group norms.

7.3.3.1.2 Working phase

During this phase, the participants and facilitator collaborated to address the issues raised during the literature review and data analysis. The working phase was founded on Kolb's theory of experiential learning and Knowles' Andragogical model. This phase was aimed at assisting healthcare providers in the management of ECs in adolescents. The working phase was divided into four sections.

Part 1: Potential factors affecting the use of EC among the adolescents

This part aimed to empower the PHC providers to address different potential factors which influence the use of EC among adolescents. Table 7.3 summarises the topics covered in this section.

Table 7. 3: Approach used to cover associated factors influencing the use of EC

Content	Teaching/learning strategies	Theory applied
<p>Potential factors influencing EC use</p> <p>Inadequate training of health care providers in adolescent sexual and reproductive health issues The content for adolescent sexual and reproductive health issues:</p> <ul style="list-style-type: none"> • Adolescent growth and development • sexual education • family planning (FP) • safe motherhood • prevention and management of STIs • HIV and AIDS • Pregnancy prevention • access to prevention, diagnosis, counselling, treatment, and care information and services 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p> <p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
<p>Lack of privacy and confidentiality The content for privacy and confidentiality</p> <ul style="list-style-type: none"> ▪ Definition of privacy ▪ Definition confidentiality ▪ Ensuring privacy ▪ Ensuring Confidentiality ▪ Benefits of ensuring privacy and 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

<p>confidentiality in the treatment of a clients</p>	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	
<p>Poor parental communication with adolescents about sexual and reproductive health issues. The content for parental communication with adolescents about sexual and reproductive health issues.</p> <ul style="list-style-type: none"> • Definition of communication • Importance of communication between the parents and child and how to promote it • Adolescent growth and development • sexual education • family planning (FP) • safe motherhood • prevention and management of STIs • HIV and AIDS • Pregnancy prevention • access to information and services on prevention, diagnosis, counselling, treatment and care 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

<p>Lack of evidence-based research on emergency contraception, The content for evidence-based research on emergency contraception</p> <ul style="list-style-type: none"> • Define research • The type of research • Purpose of research of carrying out research 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
<p>Adolescents' access to and use of emergency contraception is governed by law. The content for legal aspects that guide the use of EC among adolescents</p> <ul style="list-style-type: none"> • International regulatory landscape for emergence contraception • The Cairo International conference on the population for 1994 • The Bellagio conferences • International Emergence Contraception Consortium (ICEC) • The European Consortium for emergence contraception 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

<ul style="list-style-type: none"> • Reproductive Health Policy • Gender policy • Family Planning (FP) policy • Family Planning (FP) Guideline 	<p>Brainstorming was used in group discussions</p>	
<p>Implementation of policy regarding emergency contraception use around rape among the adolescents</p> <p>The content for policy regarding emergency contraception uses around rape among the adolescents</p> <ul style="list-style-type: none"> • Namibian laws Combating Rape Act No. 8 of 2000 • Definition of rape • Provide HIV and STI testing • Care and treatment to rape survivors 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
<p>Public awareness campaign for ECs. The content for the public awareness campaign for emergency contraceptive</p> <ul style="list-style-type: none"> • Define EC • Type of EC • Mechanism action of EC • Side effect • Contraindication • Appropriate time 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

<ul style="list-style-type: none"> • A situation when to get EC • Where to obtain EC • An appropriate candidate for EC • Benefits of EC 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	
<p>Social and cultural factors The content for social and cultural factors</p> <ul style="list-style-type: none"> • Premarital sex • Society norms about contraceptive use • Community believe about the use of EC among the adolescents • Social exclusion and stigmatization of adolescents 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
<p>Religious factors The content for religious factors</p> <ul style="list-style-type: none"> • premarital sexual intercourse 	<p>PowerPoint presentation was</p>	<p>Kolb`s experiential learning theory (concrete experience)</p>

<ul style="list-style-type: none"> • Sexual abstinence • Religious belief on the use of contraceptive 	<p>used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Knowles` theory of andragogy</p>
<p>Misconceptions about emergency contraception</p> <p>The content about Misconceptions about the emergence of contraception</p> <p>List the common misconception about EC, such as</p> <ul style="list-style-type: none"> ▪ It caused abortion ▪ It results in birth defects if pregnancies occur ▪ It is harmful to a woman's health ▪ It promotes sexual risk-taking ▪ It promotes promiscuity ▪ It causes infertility <p>Dispelled the misconception about EC</p>	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

	Brainstorming was used in group discussions	
<p>Financial barriers</p> <p>The content about financial barriers</p> <ul style="list-style-type: none"> • Transportation to medical facilities • Long distance to medical facilities • The cost of EC at a private pharmacy • Location of the health care services 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
<p>Negative attitude of health care providers</p> <p>The content addresses health care providers' negative attitudes, such as</p> <ul style="list-style-type: none"> • Unfriendly attitude • Judgmental attitudes • Yelling, scolding, and refusal/ denial of EC services 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	
<p>Limited range of emergency contraceptive methods and stock out. The availability of a limited number of emergency contraceptive methods and stock</p> <p>Stock-outs of EC methods</p> <ul style="list-style-type: none"> • Shortage of EC supplies 		<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
<p>Adolescents are unaware of EC and have limited knowledge of it. The content addresses the lack of awareness and poor knowledge about EC among the adolescents</p> <ul style="list-style-type: none"> • Type of EC methods • Where to access EC • The effectiveness of EC • The safety of EC • The side effect of a medicine • Mechanism actions • Benefits of EC 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

<p>Comprehensive sex education in schools is not being implemented well. The material used in comprehensive sex education in schools.</p> <ul style="list-style-type: none"> • Definition of Comprehensive sexuality education • Reproductive development • Contraceptive • Prevention of pregnancies • Prevention of HIV and STI • Benefits of comprehensive sex education 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p> <p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
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Part 2: Addressing the lack of basic knowledge of EC by the PHC providers

This part aimed to empower the PHC providers with information to address the lack of basic knowledge of EC by the PHC providers. Table 8.4 summarises the topics covered in this section

Table 7. 4 :Approach used to cover basic knowledge of EC by the PHC providers

Content	Teaching/learning strategies	Theory applied
<p>Knowledge on EC</p> <ul style="list-style-type: none"> • The definition of EC • Methods and types of EC. • Time for effective use • Mechanism action of EC • Appropriate candidates for EC • Safety of EC • Indications and contra indications for EC • Appropriate circumstances for EC • Where to obtain EC • Benefits of EC 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions.</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>
<p>General information about EC</p>	<p>Group discussion</p> <p>General information about EC</p>	<p>Kolb`s experiential learning theory (concrete experience, reflective observation)</p> <p>Knowles` theory</p>

Part 3: Addressing the negative attitude and misconceptions about the use of EC

The main goal of this section was to equip PHC providers with a positive attitude toward EC provision. Table 8.5 shows the topics that were covered in this section.

Table 7. 5: Approach used to address negative attitude towards EC

Content	Teaching/learning strategies	Theory applied
<p>The content on addresses negative attitudes and misconceptions about EC</p> <ul style="list-style-type: none"> • All primary care providers should be aware of the EC and be able to prescribe it. • EC should be available at every health care facility • More widespread use of EC is less expensive than abortion and unwanted pregnancies. • EC is used not only by commercial sex workers, but also by all women of reproductive age, including adolescents. • Adolescents should be counselled on contraception before becoming sexually active • EC is used by all women of reproductive age group, including adolescents • Prescription of EC should not be based on religious and cultural beliefs but rather based on the professional scope of practice 	<p>Group discussion (brainstorming) and feedback</p>	<p>Kolb`s experiential learning (concrete experience, reflective observation and abstract conceptualisation</p> <p>Kolb`s experiential learning (concrete experience, reflective observation and abstract conceptualisation</p> <p>Knowles` model of andragogy</p>
<p>The content on addresses misconceptions about EC</p> <ul style="list-style-type: none"> • A common misconception about EC such as: 		

- EC is a form of abortion;
- EC encourages irresponsible and/or promiscuous sexual behaviour;
- EC is primarily aimed at unmarried adolescents and has the potential to undermine parental authority and community morals.
- If EC is easily accessible, women and couples may abandon traditional contraception.
- Women and couples may stop using regular contraceptives if EC is easily accessible. •
- Men may be less willing to use condoms if their partners can use ECs.

- EC promotes sexual promiscuity
- Easily availability of EC increases risky behaviours
- It is preferable to tell a sexually active unmarried adolescent to obtain contraceptives from sex rather than to give them contraceptives.
- Fear of prescribing EC because of possible side effects.

- Dealing with common myths and

misconceptions about EC

Discussion and sharing of experiences regarding the attitude about EC

Group discussion

Kolb`s experiential learning theory (concrete experience, reflective observation)

Knowles` theory

Part 4: Addressing poor practice of EC among the PHC providers

This part aimed to empower the PHC providers with information to address poor practices of ECs by the PHC providers at addressing poor practice of ECs. The areas that were covered are presented in Table 8.6 below.

Table 7. 6: Approach used to address poor practice

Content	Teaching/learning strategies	Theory adopted
<ul style="list-style-type: none"> • Training of Health care providers in FP and ECs. • Availability of ECs at the health care facilities • Methods of ECs • The recommended regimen (pills identification, dose and timing) • Common side effects and their management • Indications and contraindications • Counselling and providing information to clients 	<p>PowerPoint presentation was used to deliver a lecture</p> <p>Brainstorming was used in group discussions.</p>	<p>Kolb`s experiential learning (concrete experience, reflective observation and abstract conceptualisation</p> <p>Kolb`s experiential learning (concrete experience, reflective observation and abstract conceptualisation</p> <p>Knowles` model of andragogy</p>

- Provision of ECs at health care facilities
- EC is available at health care facilities and outreach points.
- Benefits of ECs

7.3.3.1.2.1 Application of Kolb`s theory of experiential learning

Kolb`s theory of experiential learning cycle stages was applied in the educational programme implementation to support the PHC providers regarding the management of ECs as method to prevent unwanted pregnancies among adolescents.

Concrete experience

According to Kolb et al. (2014), in a concrete experience, participants discover activities by observing objectively or by doing. During the implementation of the educational program, PHC providers could learn about ECs as method to prevent unwanted pregnancies among adolescents through power point presentations, group discussions, and observing or participating in role-playing. They also gained new perspectives on EC from the feedback of other participants.

Reflective observation

PHC providers adapted to their new experience at this stage by reflecting on their previous ECs provision experiences and how they used to handle clients in need of ECs as method to prevent unwanted pregnancies among adolescents. They recognised the differences

between their previous and new ECs experience in managing clients who required ECs as method to prevent unwanted pregnancies among adolescents.

Similarly, group discussions and role-playing allowed participants to reflect on their experience managing ECs as methods to prevent unwanted pregnancies among adolescents, identify inconsistencies between old and new ways of doing things, and decide whether or not to adopt the new experiences to help them practice appropriately providing EC as method to prevent unwanted pregnancies among adolescents.

Abstract conceptualisation

PHC providers learned from experience by gaining a better understanding of EC information and their new experience at this stage. They were exposed to role-playing and debate sessions in order to deepen their understanding and begin to modify their previous experiences in managing EC as method to prevent unwanted pregnancies among adolescents.

Active experimentation

This stage entails planning or putting what one has learned into practice. During the implementation of the educational program, all PHC providers applied what they had learned about ECs service provision as method to prevent unwanted pregnancies among adolescents. Furthermore, all PHC providers in this study took part in the discussions and role-playing, either as players or as observers. This also gave them the opportunity to actively experience what they had learned, resulting in program implementation

7.3.3.1.2.2 Application of Knowles` model of andragogy

Knowles proposed the principle of adult learning. During the implementation of the educational program, the principles of adult learning were considered. Adult learners must be treated, and those with knowledge and experiences must be given the opportunity to share their own experiences and situations. Adult learners require suggestions as well as the ability to decide what is useful. They enjoy contributing to their learning by offering suggestions and ideas. All of these adult learning principles were considered during the implementation of the educational programme to assist PHC providers in the management of EC in adolescents.

PHC providers were treated as people with knowledge and experience, and they were given opportunities to share their stories and situations and were given the opportunity to make suggestions and decide what would be useful. They helped them learn by contributing ideas and input. They learned a lot of information that will benefit them in their personal lives. As a result, there was a need to explain the reasons for the specific activities and different methods used during the educational program activities during this educational programme.

Various teaching/learning strategies were used. These provided opportunities for participants to share their experiences, present their ideas and inputs, and receive feedback from other participants and the facilitator. Participants also had each an opportunity to ask

questions and receive feedback and were required to evaluate their learning activities in order to determine whether the educational program's objectives were met.

7.3.3.1.3 Termination phase

The participants evaluated the day's activities during this phase. After each topic was presented, an evaluation was done to find out whether there were any sessions that participants did not understand and needed clarification, and if so, further explanations were offered. This also allowed for any misunderstanding identified to be rectified. The entire programme was evaluated by the participants at the end of the training. This enabled the facilitator to assess the training's usefulness and effectiveness. At the end of the workshop, participants completed a post-training assessment test. The goal was to see if their understanding of EC had improved.

7.4 PART 2: PROGRAMME EVALUATION

Following the completion of the program, an evaluation was carried out. According to Urbancová et al. (2021), an evaluation is a methodical collection of information on an event that has occurred in order to obtain feedback on whether the event was successful or not. The purpose of this study was to determine whether or not the program was implemented as planned. The evaluation also looked at the program's effectiveness and usefulness, as well as whether it had improved the participants' knowledge.

Pre- and post-training tests were carried out to determine whether there was an improvement in the knowledge and practice of ECs.

Following implementation, the program was evaluated to determine its impact and effectiveness.

7.4.1 Evaluation of the educational program's effectiveness

Participants were asked to complete a program evaluation tool to assess the usefulness of the program. A questionnaire was used to collect data for this evaluation. The training evaluation tool included 15 questions: 10 closed-ended and 5 open-ended. To allow participants to express themselves freely, open-ended questions were used. After the training, participants were asked to complete an evaluation questionnaire Annexure I is the training evaluation tool that was used.

7.4.2 Findings concerning the effectiveness of the Educational Programme

In the closed-ended questions, the participants were asked to indicate their level of agreement with the statement given. Their responses were quantitatively analysed as shown in Table 7.7.

Table 7.7 Responses of participants to closed-ended questions

Closed-questions	Responses in percentages (%)
The training's objectives were clearly defined	100% (n=21) agreed
Interaction and participation were encouraged.	100% (n=21) agreed
The topics covered were of interest to me.	<ul style="list-style-type: none">• 95% (n=20) agreed• 5% (n=1) did not agree or disagree
The information was well-organized and simple to understand.	100% (n=21) agreed
The materials provided were beneficial.	<ul style="list-style-type: none">• 71% (n=15) agreed

	<ul style="list-style-type: none"> • 29% (n=6) disagreed
My training experience will be beneficial to my work.	100% (n=21) agreed
The trainer was well-prepared and well-informed.	100% (n=21) agreed
The training goals were m	100% (n=21) agreed
The training time allocated was sufficient.	<ul style="list-style-type: none"> • 81% (n=17) agreed • 19% (n=4) disagreed
The training facility and room were adequate and comfortable.	<ul style="list-style-type: none"> • 81% (n=17) agreed • 19%(n=4) disagreed

Similarly, participants were asked to express their opinions in five open-ended questions. Their responses are presented qualitatively in Table 8.7 below. Again, their verbatim comments are presented in italics.

Table 7.8 Open-ended questions and the verbatim responses of the participants

Open-ended questions	Verbatim comments of the participants
What did you like most about this training?	<ul style="list-style-type: none"> • <i>All the topics</i> • <i>Use of EC pills as a form of FP</i> • <i>Information about different types of EC, the importance of EC uses</i> • <i>Eligibility criteria for ECs</i> • <i>Regimens for ECs</i> • <i>Explanation and correction of myths and misconceptions about ECs that hinder full and proper utilization of ECs</i> • <i>The methods of ECs, dosage and indications to consider when giving EC</i> • <i>How to handle challenges experienced with ECs.</i> • <i>Type of ECs and availability of ECs</i> • <i>ECs and adolescents and the importance and benefits of ECs</i>

<p>What aspects of training could be enhanced?</p>	<p>There was consensus that there was nothing that needed to be improved. Example of a response: <i>Nothing could be improved; all sessions were beneficial.</i></p>
<p>How do you expect this training to impact your practice?</p>	<ul style="list-style-type: none"> • <i>Make use of the information gained during the training to give ECs</i> • <i>Start giving ECs to their health care facilities</i> • <i>Disseminate information about ECs to the community so that clients will start using ECs</i> • <i>Friendly to clients who need ECs and help them</i> • <i>Give health education about ECs to the community and clients adolescents to reduce teenage pregnancies</i> • <i>Conduct in-service education to the clinic staff about ECs</i> • <i>Give detailed information about ECs to clients so that clients will make an informed decision</i> • <i>Pass the information gained to clients and staff</i> • <i>Mobilize clients for ECs</i> • <i>Train life skill teachers on the use of ECs</i> • <i>Sensitize the community on ECs</i> • <i>Start practicing and giving ECs at health care facilities</i> • <i>Change their attitude against ECs and give clients ECs</i> • <i>Encourage other health care workers to give ECs to teenagers especially older nurses</i> • <i>Dissolve myth and misconception surrounding ECs and put what they have learned into action</i>

<p>What additional ECs trainings would you like to have in the future?</p>	<ul style="list-style-type: none"> • <i>To be trained in ECs called an implant,</i> • <i>Need a refresher course in ECs and training on how to insert Intrauterine Device and its use.</i> • <i>Need to be trained in all available ECs methods and</i> • <i>To be trained in the new guideline for FP and EC and</i> • <i>To be provided with a FP guideline</i> • <i>To be trained in HIV Post Exposure Prophylaxis</i>
<p>Please add any additional comments or expand on previous responses here</p>	<ul style="list-style-type: none"> • <i>Doctors and nurses to be trained in ECs and how to insert an IUCD as an effective method of ECs and other health care workers to be trained in ECs</i> • <i>ECs training to be incorporated in the training curriculum of nurses, doctors and community health extension workers to give proper information about ECs and regular contraceptives before prescriptions</i> • <i>Traditional birth attendants to be trained in EC</i> • <i>Routine refresher courses on ECs</i> • <i>Each District hospital to have nurses and doctors trained on how to insert IUCD, to use media such as radio talk as a form of communication about ECs</i>

7.4.3 Evaluation of the educational programme's impact on the participants.

The participants were assessed to see if the educational program improved their knowledge. They were evaluated in two tests: one before and one after training. The pre-test was administered prior to the start of the training program to determine their knowledge level, and the post-test was administered after the training to determine

whether their knowledge level had increased. The same questions were used in both tests (see *Annexure J*). The pre-test results showed that their knowledge level ranged with an average of 45%. The post-test results had an average of 75%. The latter results indicate that there was a good improvement in the knowledge; this can positively influence their attitude and practice of ECs. It can thus be argued that the implementation of the educational programme was successful and successfully addressed common knowledge regarding ECs, negative attitudes and also poor practice of ECs. In other words, the PHC providers in the Ohangwena region were supported regarding the provision of ECs.

7.5 CHAPTER SUMMARY

The implementation and evaluation of the programme were discussed in this chapter to assist PHC providers in the management of ECs. The various strategies used during the programme's implementation were explained. The evaluation of the programme was also discussed. The evaluation results indicated that the programme was effective and improved the participant's knowledge, attitude and practice.

CHAPTER EIGHT

LIMITATIONS, CONCLUSIONS, RECOMMENDATIONS OF THE STUDY, CONTRIBUTIONS TO THE BODY OF KNOWLEDGE AND THE WAYFORWARD

8.1 INTRODUCTION

The previous chapter discussed the implementation and evaluation of the educational program to assist PHC providers in managing ECs in adolescents. This chapter presents the study's conclusions in accordance with the various study phases, beginning with the specific objectives in the situational analysis phase, followed by the development of a conceptual framework and the development of an educational program to assist PHC providers in managing ECs for adolescents. The chapter also discusses the study's contributions, limitations, and recommendations based on the study's findings.

8.2 LIMITATIONS OF THE STUDY

Despite the fact that the study was successful, some limitations were encountered during its execution. The methodological and implementation limitations, the availability of literature, and the validation of the limitations.

8.2.1 Methodological limitations

The accessibility of the population, sampling, data collection instrument, and literature availability limitations were all identified during this study.

8.2.2 Population limitations

The study was limited to public PHC providers working at public health care facilities in the Ohangwena region.

8.2.3 Sampling limitations

The initial proposed sample size was 125; however, only 103 PHC providers are the providers of EC services. This was due to the fact that not all PHC providers are providing ECs service.

The sampling process was incomplete and sample size was not calculated due to a small population that was found providing EC services in the Ohangwena region during the data collection.

8.2.4 Utilisation of a self-administered questionnaire

The use of a self-administered questionnaire carried the risk of biasness, as respondents could have provided information about their experiences managing EC services among adolescents in the Ohangwena region. Furthermore, there was a lack of assessment of infrastructures and of EC resources.

8.2.5 Stakeholder participation

The findings came from health care providers, not service recipients, community health care workers, pharmacists, or policymakers.

8.2.6 Limited resources

The study sought to comprehend the difficulties that PHC providers face in managing EC services. However, due to limited resources, the researcher was unable to include the adolescents who receive EC services.

- Workshop conducted limitation

Despite the fact that the educational program was developed, it was unable to accommodate all PHC providers in the region due to a lack of time and funds. Those who attended the workshop for educational training were encouraged to provide feedback to others, and the PHC supervisors in charge of the districts should be able to provide some in-service training on EC services to other PHC providers who were unable to attend the workshop.

- Implementation limitations

The educational programme to support the PHC providers regarding EC management was implemented in the clinical context; however, attendance was poor due to the shortage of staff in the region.

- Limited access to literature

There was also some limitation on the amount of literature available. There is little literature on PHC providers' knowledge, attitude, and practice of EC in Africa, particularly in the SADC and Namibia. This caused issues with the validation of literature.

8.3 CONCLUSIONS OF THE STUDY

The study's conclusion is divided into three sections: situational analysis, conceptual framework development, and development of an educational program to assist PHC providers in managing emergency contraception for adolescents. The conclusions are derived from the study's objectives, which are described below.

8.3.1 Purpose of the study

The study's goal was to assess Primary Health Care providers' knowledge, attitudes, and practices regarding the management of ECs among adolescents in order to develop an educational program in the Ohangwena Region. A questionnaire was used to collect data that provided evidence on the need to develop an educational programme in order to achieve the goal.

To achieve the study's goal, five objectives were developed. These goals were to assess PHC providers' knowledge, attitudes, and practices regarding the management of emergency contraception for adolescents, determine the factors associated with PHC providers' knowledge, attitudes, and practices create a conceptual framework that will

serve as the foundation for an educational programme to assist PHC providers in the management of emergency contraception, develop an educational program to assist PHC providers in managing emergency contraception for adolescents, and implement and evaluate the educational programme to assist PHC providers in managing ECs for adolescents.

8.3.2 Objectives of the study

8.3.2.1 Objective one: Assess the knowledge, attitudes and practices of PHC providers regarding the management of ECs for adolescents

This objective was met by using a self-administered questionnaire to collect data. The findings of this objective indicated that PHC providers face difficulties in managing emergency contraception for adolescents. These challenges include: insufficient knowledge on the type of pills used in ECs and the importance of ECs among the adolescents, negative attitude which is likely to be influenced by misconception and poor practice of ECs due to lack of training in FP and ECs. The following conclusion was made based on the findings:

- Lack of basic knowledge of ECs

According to the findings in Table 4.3, 14.1% (n = 13) of the participants had no knowledge of ECs, while 7.6% (n = 7) believed that ECs is used to induce abortions. While the majority (78.3%) of the participants knew that ECs effectively prevented pregnancy. The summary values from the emerging three factors indicated that the overall

mean level of basic ECs knowledge for the sample was 72.39% (S.D: 34.30), with the two groups that are aware of the function and timing of ECs in preventing pregnancies (82.43%) and inducing abortions (80%) having the necessary basic ECs knowledge. The findings, however, show a general lack of knowledge about the type of pills used in EC (M = 14.95%, S.D = 26.22) and the significance of adolescent EC (M = 23.37%, 26.16).

These findings have negative consequences for community-wide usage of ECs; as a result, focused training interventions for the healthcare professionals on EC knowledge, understanding the types and efficacy of ECs pills, and the provision of EC services for adolescent patients are required. In addition, the study findings are in line with previous research that has stressed the necessity of providing nurses with accurate and up-to-date information about ECs.

- Positive attitude, negative attitude and misconceptions towards ECs

PHC providers expressed concerns that ECs discourage the use of regular contraceptive methods, ECs promote sexual promiscuity among adolescents, adolescents require parental consent for ECs use, not prescribe ECs due to possible side effects, not prescribe ECs due to my cultural beliefs and religious beliefs, negative attitude could act as barriers to effective use of ECs, and these barriers need to be addressed.

The findings revealed that the standardised direct (unmediated) effect of negative attitudes on positive attitudes was -0.452 ($p < 0.01$). The value is the direct (unmediated) effect of negative attitudes on positive attitudes; as such, when negative attitudes go up by 1

standard deviation, positive attitudes go down by 0.452 standard deviations. Additionally, Figure 4.2 depicts the direct (unmediated) effect of negative attitudes on misconceptions, indicating that for every one standard deviation increase in negative attitudes, misconceptions increase by 0.381 standard deviations. (beta = 0.381, $p < 0.01$). Overall, these findings imply that a nurse with a negative attitude is likely to have a high misconception and low positive attitude on EC.

The 'Negative attitudes' towards ECs are strongly influenced (>0.7) by religious beliefs (Sec3_30; beta = 0.92) and cultural beliefs (Sec3_31; beta = 0.83), while mildly influenced (0.4 to 0.6) by attitudes towards commercial sex workers (Sec3_24; beta = 0.45). In comparison, the positive attitudes towards ECs are influenced by the knowledge and competence of nurses in counselling (Sec3_27; beta = 0.49) and prescribing EC to patients (Sec3_15; beta = 0.78). As well as the affordability (Sec3_17; beta = 0.78), easy access and availability of EC at every health facility (Sec3_16; beta = 0.85).

Regarding misconceptions, the study reveals that nurses believed that making ECs readily available would moderately increase risky sexual behaviours (Sec3_21; beta = 0.58), and highly promotes sexual promiscuity in unmarried adolescents (Sec3_25; beta = 0.75). Furthermore, they believed that it is preferable to advise a sexually active unmarried woman to abstain from sex when she requests contraception rather than providing it (Sec3_26; beta = 0.59). Lastly, the nurses feared prescribing EC because of possible side effects (Sec3_29; beta = 0.49).

- The poor practice of ECs

The practice PHC providers concerning their ECs training and education, prescription or dispensing practice or interaction with the consumer was inferior. PHC providers indicated that they were not trained in ECs and could not prescribe ECs or give the correct dose.

The findings indicated that only 46.7% (n = 43) of the participants trained in FP (Sec4_33), with most of those trained to practice in the Engela district (n = 30; 56.7%). In addition, the findings show that those who received training in both FP (FP) and EC (Sec4_34) were fewer, with only 15.2% (n=14) of the participants reportedly saying yes to the question.

A follow-up question on the availability of ECs at their facility (Sec4_35) indicated an average EC availability of 91.3%, with Okongo district having 100% availability, Eenhana with 88.9% and Engela with 89.5% availability. In Namibia, all public PHC facilities are expected to provide FP and ECs as part of reproductive health services. However, despite having a high ECs availability, the participants had little experience providing ECs to clients (Sec4_36), with only 38% of the participants reportedly providing ECs to clients. The findings also revealed that 38% of participants who had worked with ECs clients were the only ones who could write down the correct ECs prescription (Sec4_37). Consequently, most cases under which ECs was prescribed (Sec4_39) in Eenhana district centres were for unprotected sex the night before or a bursted condom (44.4%). While information given to clients concerning ECs (Sec4_38) was mostly given after bursted

condom or unprotected sex (32.6%), forced sex, rape cases, or abortion requests (25%), and general services or during screening (19.6%).

Regarding side effects caused by prescribed ECs (Sec4_41), only 9.7% of the participants reported side effects like numbness, irregular bleeding, and headaches. Lastly, the participants' suggestions for improvement (Sec4_40) mainly were related to competence in providing and availing ECs to clients (54.3%).

In conclusion, the respondents' overall general practice of ECs was poor, as evidenced by less than 50% of the correct responses. An educational training programme should thus focus on the knowledge and practice of ECs. Improvement of the study respondents' knowledge of ECs would positively impact their practice towards EC.

8.3.2.2 Objective two: Determine the factors associated with knowledge, attitude and practice of emergency contraceptive for adolescents

The following potential factors have been identified in the literature as factors influencing the use of emergency contraception and causing unwanted pregnancies in adolescents. Adolescent and reproductive health-trained health care providers, a lack of privacy and confidentiality, poor parental communication with adolescents on sexual and reproductive health issues, a lack of evidence-based research on emergency contraception, and the law governing the use of emergency contraception among adolescents, poor implementation of the policy regarding emergency contraception usage, rape among the adolescents, lack of public awareness campaigns for ECs, social and cultural factors, religious factors, misconceptions about emergency contraception, adolescents' access to health care

facilities, a limited range of emergency contraceptive methods (out of stock), adolescents' lack of awareness and knowledge about EC, as well as the poor implementation of sexual education in schools. The following factors associated with PHC providers' knowledge, attitude, and practice regarding EC services, as identified by study findings are discussed in the following session.

- Factors associated with knowledge, attitudes and practices of ECs

To determine the relationship between demographic data and knowledge, attitude, and practice, an inferential data analysis method was used. These findings suggested a relationship between demographic information and knowledge, attitude, and practice.

Age groups have a statistically significant relationship with basic knowledge ($p=0.00$), negative attitudes ($p=0.01$), positive attitudes ($p=0.00$), and program design ($p=0.00$). To determine the relationship between demographic data and knowledge, attitude, and practice, an inferential data analysis method was used. These findings suggested a relationship between demographic information and knowledge, attitude, and practice.

There is a significant relationship between age groups and basic knowledge ($p=0.00$), negative attitudes ($p=0.01$), positive attitudes ($p=0.00$), and program design ($p=0.00$).

Marital status has no significant relationship with adolescent knowledge ($p=0.06$), basic knowledge ($p=0.65$), pill knowledge ($p=0.47$), negative attitude ($p=0.25$), positive attitude ($p=0.75$), misconceptions ($p=0.90$), and EC practice ($p=0.18$)

There is no significant association between the religion and basic knowledge ($p=0.07$), pill knowledge ($p=0.21$), adolescents' knowledge($p=0.98$)- negative attitude($p=0.12$), positive attitude($p=0.46$) and EC practice ($p=0.06$).

Professional qualification has a significant association with basic knowledge ($p=0.01$), practices ($p=0.00$), and program design ($p=0.00$), but no significant association with attitudes (negative attitude $p=0.29$, positive attitude $p=0.42$).

There is a significant association between working experiences and basic knowledge ($p=0.02$, but no significant associations with attitude (negative attitude $p=0.17$), positive attitude ($p=0.45$ and practice ($p=0.39$).

8.3.2.3 Objective three: Develop a conceptual framework that will guide the study

The findings of the situational analysis phase served as the foundation for Phase 2 of the study. Dickoff et al Practice's Theory was used to develop the conceptual framework (1968). The agent in this study was the researcher who developed the educational program, the recipients were primary healthcare providers, the context was the health care facilities in the Ohangwena region where the activity was performed, and the procedure was the development and implementation of the educational program to support PHC providers in the management of EC for adolescents.

The potential factors influencing the use of EC among adolescents identified during literature reviews, as well as the findings from the study on the challenges experienced by PHC providers in the management of EC for adolescents, motivated the development of the educational program, and the terminus of the was the goals the agent wanted to achieve

after carrying out an activity, which is to have knowledgeable and competent PHC providers. As a result, developing a conceptual framework would aid in establishing the link between practice and theory.

8.3.2.4 Objective four: Develop an educational programme to assist primary care providers in managing emergency contraception for adolescents

The final phase of the study (Phase 3) had two objectives. The first goal was to create an educational program to help PHC providers manage emergency contraception for adolescents in the Ohangwena region. The findings of the study's situational analysis influenced this program. The educational program that assisted PHC providers was based on the five steps identified by Nicholls and Nicholls (1978) when developing a curriculum. The steps taken in developing an educational program for PHC providers to facilitate appropriate ECs provision and to support PHC providers in managing ECs for adolescents. The situational analysis (first step), which is the research itself, was used in the development of an educational program for PHC providers to facilitate appropriate management of ECs for adolescents. This was conducted in the first phase, where areas of concern were identified through the study findings.

The second step is to choose objectives. The objectives of the educational program for PHC providers to facilitate appropriate management of ECs for adolescents were chosen based on the findings of the situational analysis, as outlined in Section 7.2.2 of Chapter seven.

The third step is to choose and organise the content. The educational program for PHC providers to facilitate appropriate management of ECs in adolescents was chosen and

organised in accordance with the findings and objectives (the content was discussed later in Chapter seven). The fourth step is method selection. The methods or strategies used during the implementation of the educational program for PHC providers to facilitate the appropriate management of ECs for adolescents were chosen based on the content and objectives to be covered. Chapter seven goes over the methods that were used. The final step is to assess learning. Following the completion of the educational program's activities, learning was assessed to determine whether the objectives were met. This is covered in this chapter. In this Chapter, the cyclic curriculum development theory is presented.

8.3.2.5 Objective five: Implementation and evaluation of a PHC provider education program on emergency contraception management for adolescents

The fifth goal of the study in phase 4 was to implement and evaluate the educational program for PHC providers on the management of ECs for adolescents, which was divided into parts one (1) and two (2). (2). Part one is the educational program's implementation. The experiential learning cycle of Kolb and Knowles' model of andragogy was used in the educational program's implementation. Kolb's experiential learning cycle was used, with four stages: exploring activity, assimilation of new experiences, in-depth understanding of experience, and application of what was learned (Kolb & Boyatzis, 1999). As a program facilitator, the researcher needed to give participants time to explore and assimilate new experiences so that they could have a thorough understanding of what they had learned.

Knowles' model entails the following steps: the creation of a conducive learning environment, the identification of learning needs, the consideration of prior experience, the setting of clear objectives, and the evaluation (Knowles, 1980). In this study, a suitable

venue that was conducive to learning was used. The participants' learning needs, as well as their prior knowledge and experience, were considered. There were specific goals that needed to be met. Objectives were assessed based on whether or not they were met. On October 25-26, 2018, Eenhana Hospital hosted a two-day workshop.

The second section is an evaluation of the educational programme. Pre and post-tests were given to workshop participants in order to assess the program's usefulness and impact. The test questions were chosen in accordance with the objectives to be met. Participants were given the opportunity to evaluate program implementation on a daily basis. This stage of programme evaluation is covered in Chapter eight.

8.4 RECOMMENDATIONS

Based on the study's findings, several recommendations were made. These include practice recommendations (MoHSS), education, and future research.

8.4.1 Recommendations for the Ministry of Health and Social Services practice

The study found that PHC providers lacked EC knowledge, had a negative attitude and misconceptions, and practiced ECs poorly. Concerning practice, the researcher recommended the following:

- The Ministry of Health and Social Services prioritises capacity building in ECs through in-service, pre-service, and on-the-job training.

- Long-term and short-term ECs courses, workshops and seminars should also be offered for all levels of health care providers.
- Leadership at national, regional and district levels, respectively, should expand their involvement in ECs management and spearhead the implementation and provision of ECs among adolescents.
- Effective management should be enhanced by ensuring that ECs policies are in place, and stakeholders should be involved in the EC policy formulation.
- There is a need for a policy that protects adolescents' right to privacy and confidentiality when accessing reproductive health care services, including ECs.
- A policy that increases awareness and use of ECs by making it available over the counter to anyone of any age or gender without the need for a prescription would go a long way toward reducing the barriers to ECs.
- In the same vein, there is a need for a policy that ensures that medical insurances cover EC and other reproductive health services.
- Establishment of an adolescent-friendly health care clinic at every health care facility.
- The development of an educational program for the management of ECs should be expanded to other regions in order to educate other health care providers about the provision of ECs.
- To lessen the impact of these barriers to increasing access to EC services and preventing unwanted pregnancies, it is critical to dispel myths, correct misconceptions, and increase knowledge among community members, health care

providers, and individuals about the reproductive age of those at risk of unwanted pregnancies, particularly adolescents.

- To address the issue of lack of confidentiality and privacy, health care providers must educate and emphasize the importance of following the code of conduct while performing their duties.
- Outreach points for adolescents in rural areas to get timely access to ECs should be provided.
- PHC providers should provide health education to adolescents regarding ECs, made aware of the availability of ECs at health care facilities and should be able to obtain advanced ECs through the emergency department.
- Another way to promote ease of access to EC is the establishment of a national ECs website to be operated by the Ministry of Health and Social Services.
- Adolescent health and reproductive health care training for health care providers

8.4.2 Recommendations for education

Three recommendations about education are as follows:

- Educational institutions should include an ECs component in the curriculum so that future health care providers have the necessary skills and knowledge when they begin working.
- Life skills teachers should receive training in FP and ECs so that they can refer students to such services.
- School-based reproductive and sexual education programs to teach adolescents about various types of contraception, including ECs. As a result, a comprehensive,

medically accurate, and age-appropriate curriculum for educating adolescents about their sexual and reproductive health should be developed.

- There is a need for a comprehensive adolescent-focused education program that can assist in assessing their knowledge of ECs at the individual level, thereby making ECs easily accessible in a confidential manner.
- Creating an awareness programme for ECs at the school and community level involving different stakeholders to influence the cultural and social norms, laws and policies that affect adolescents and young's people rights to FP access would be helpful.
- The national multimedia public service campaign should aim to reduce the number of unintended pregnancies, particularly among adolescents and young adults. Adolescents and young people should be directed to a comprehensive, online, youth-friendly program on contraceptive methods, including ECs.
- TV shows to incorporate educational points regarding ECs in the programs that addresses adolescent and youth.

8.4.3 Recommendations for further research

Future research studies should be conducted in the following:

- Landscaping and availability of programming at health care facilities.
- Challenges experienced by PHC providers regarding the management of programming.

- The knowledge, attitude and practice of programming among the learners/students, adolescents and women of childbearing age.
- Future research is recommended on the following topics: stakeholders, systematic review or scoping review, implementation and evaluation, training impact, and educational program rollout.

8.4.4 Research on stakeholders

This study only included PHC providers; therefore, future research could include adolescents, community health care workers, and pharmacists. This will then lead to the identification of obstacles to ECs access faced by adolescents.

- Systematic review research/ scoping reviews

The systematic/scoping review was not covered in this study. Thus, future research of this type is required.

- Investigation into the implementation and evaluation of a learning program

This research educational programme was implemented and evaluated; it is thus recommended that future research into the impact of training conduct be conducted:

- Research on the impact of training

The impact of the educational programme has not been evaluated, therefore, the following studies are recommended:

- The evaluation of the impact of the training conducted;

- Research on the rollout of an educational program to support PHC providers in the management of ECs.

The educational programme was only developed and implemented for public health care facilities in the Ohangwena Region; therefore, it is recommended that the same research be expanded to other regions and private hospitals throughout the country.

8.4.5 General recommendations

It was discovered that there is a need to support PHC providers in their provision of EC services to adolescents. As a result, continuous service training is advised.

There is a need for PHC providers to participate in CPD activities related to reproductive health, and learning how to prevent unwanted pregnancies among adolescents is recommended.

An official national ECs policy should be developed and implemented.

8.5 CONTRIBUTION TO THE BODY OF KNOWLEDGE

The study's findings provided valuable information about the difficulties PHC providers faced when managing emergency contraception among adolescents at the health facilities where the study was conducted. As a result, this study added to the body of scientific knowledge in the following ways:

8.5.1 Identification of PHC providers' challenges in managing ECs services among adolescents in the Ohangwena region

Firstly, this study added to new knowledge on PHC providers' challenges in ECs service management among adolescents, which has limited knowledge in the country. This was done in phase one of the study, where PHC providers' challenges with ECs service management for adolescents in the Ohangwena region were identified. These challenges were identified as the provision of training services to PHC providers through the educational program at health care facilities, the training of PHC providers on ECs knowledge, a positive attitude toward ECs, and how to provide ECs to adolescents.

8.5.2 Develop a conceptual framework for educational programme

A conceptual framework was developed to conceptualize the findings of the situational analysis and connect it to Dickoff et al. (1968)'s practice theory. The conceptual framework formed the study's foundation and helped establish the connection between theory and practice. Future researchers will use this as a reference document (Chapter five).

8.5.3 The development of an educational programme to support PHC providers regarding the management of ECs for adolescents in the Ohangwena region

Another critical contribution is the creation of an educational programme to assist PHC providers with EC management, which is currently unavailable in the country. The educational programme was developed to support PHC providers regarding managing ECs for adolescents (Chapter six).

8.5.4 Educational programme implementation to support PHC providers regarding the management of ECs for adolescents in the Ohangwena region

The educational program was implemented, and PHC providers were able to share their experiences and practices in providing EC services to adolescents. Furthermore, the implementation of this educational programme ensured that the identified challenges were addressed during the implementation in Chapter seven.

8.6 THE WAY FORWARD

Following this study, the researcher shall disseminate the study's findings in the following ways:

8.6.1 Publication proposed

The following manuscripts are being considered for publication.

Assessment of the knowledge, attitudes and practices of PHC providers regarding managing ECs for adolescents [Phase1].

- Factors associated with PHC providers' knowledge, attitudes, and practices (dependent variables) [Phase 1].
- Development of a conceptual and theoretical foundation for an education program to assist PHC providers in managing ECs in adolescents.
- Development of an educational program to assist PHC providers in the management of ECs in adolescents.

- Implementation and evaluation of an educational programme to support the PHC providers regarding the management of ECs

8.6.2 Paper publication

The following are some of the journals that will be considered for paper publication:

- Reproductive Health and Contraception Journal.
- BMC Health Services Research Journal
- Global Journal of Health Sciences
- Contraception Journal
- Obstetrics and Gynaecology Journal
- Family Practice Journal

8.6.3 Presentation of papers

The papers listed below are proposed for presentation at national and international venues.

- The necessity of for an educational program to assist PHC providers in managing EC in adolescents.
- PHC providers' knowledge, attitude, and practice regarding the management of EC in adolescents.

8.6.4 Education and communication materials chapters and information

It is proposed that this dissertation be turned into a book, with chapter contents focusing on the following topics:

- Introduction and background of ECs (national and international)
- Overview of ECs (Worldwide, Africa, and Namibia)
- Factors influencing the use of ECs among women
- Factors influencing the use of ECs among adolescents
- Factors affecting the use of ECs among adolescents
- PHC providers' knowledge, attitude, and practice regarding the management of ECs in adolescents.

8.7 CHAPTER SUMMARY

This chapter summarised the study's findings. The conclusions were based on the five study objectives listed above. The study's purpose and objectives were also met. Furthermore, the chapter discussed the limitations encountered during the study. These limitations included the SADC and Namibia's limited population, sample size, data collection methods, stakeholder participation, limited resources, workshop limitations, implementation limitations, and limited literature. The chapter also discussed how the study added to the body of knowledge. The main contributions noted here included the creation of a conceptual framework, the creation of educational programs, and the implementation and evaluation of educational programs. The chapter covered greater detail about the study's recommendations. The recommendations centred on practice, education, additional research, and general suggestions. Finally, the researcher believes that implementing the developed programme and recommendations will effectively promote the quality of EC services for adolescents in the Ohangwena region, Namibia.

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ANNEXURE A: PERMISSION LETTER FROM UNAM POSTGRADUATE COMMITTEE

University of Namibia, Private Bag 13301, Windhoek, Namibia
340 Mandume Ndemufayo Avenue, Pioneerspark
☎ +264 61 206 3111; URL: <http://www.unam.edu.na>



19 February 2015

TO WHOM IT MAY CONCERN

RE: RESEARCH PERMISSION LETTER

1. This letter serves to inform that student: **Loide Nghifika** (Student number: **9205160**) is a registered student in the School of Nursing and Public Health at the University of Namibia. Her research proposal was reviewed and successfully met the University of Namibia requirements.
2. The purpose of this letter is to kindly notify you that the student has been granted permission to carry out postgraduate studies research. The School of Postgraduate Studies has approved the research to be carried out by the student for purposes of fulfilling the requirements of the degree being pursued.
3. The proposal adheres to ethical principles.

Thank you so much in advance and many regards.

Yours truly,

Name of Main Supervisor: **Dr K Hofnie - //Hoebes**

Signed: _____

Dr. C. N.S. Shaimemanya

Signed: _____

Director: School of Postgraduate Studies
Tel: 2063523
E-mail: cshaimemanya@unam.na

ANNEXURE B: ETHICAL CLEARANCE CERTIFICATE



UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: SONPH/15/2015

Date: 10 February, 2015

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, attitudes and practices of primary care healthcare providers regarding management of emergency contraceptives in Ohangwena Region, Namibia, for Educational Program

Nature/Level of Project: Doctorate

Researcher: Loide Nghifkwa

Student Number : 9205160

Host Department & Faculty: School of Nursing and Public Health

Supervisor : Dr. H. Hofnie-//Hoebes ; (Main) (Co) Dr. K. Amakali

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,
 - (ii). request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.


Prof. I. Mapaure
UNAM Research Coordinator
ON BEHALF OF UREC

**ANNEXURE C: APPROVAL LETTER FROM MINISTRY OF HEALTH AND
SOCIAL SERVICES**



REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 – 203 2510
Fax: 061 – 222558
E-mail: hngombe@mhss.gov.na

OFFICE OF THE PERMANENT SECRETARY

Ref: 17/3/3

Enquiries: Mrs. H. Nangombe

Date: 07th July 2015

Ms. Loide Ambuga Nghifikwa
P.O. Box 2696
Oshakati
Namibia

Dear Ms. Nghifikwa

Re: Assessment of knowledge, attitudes and practices of Primary Health Care providers regarding management of emergency contraceptives in Ohangwena region, Namibia, for educational programme.

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 operational 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;

A handwritten signature in black ink, appearing to be 'L. Nangombe', is written over the end of the third list item.

- 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,



"Health for All"

ANNEXURE D: REQUEST AND APPROVAL LETTER FROM OHANGWENA REGIONAL HEALTH DIRECTOR



REPUBLIC OF NAMIBIA
Ministry of Health and Social Services
DIRECTORATE OHANGWENA REGION
Office of the Regional Director
Private Bag 88006
EENHANA

Tel. 065 – 263239/263260/263261/263293 Fax. 065 – 263225
Email: opetuhango@yahoo.co.uk

Enq: John Hango

15th July 2015

To: Mrs. Loide Ambuga Nghifikwa
UNAM
Oshakati

Re: Conducting a doctoral study in Ohangwena region health facilities

Your request letter dated 14 July 2015 refers

Considering that you have already got the approval from the ministerial Research Unit, you are hereby granted permission to conduct your academic study titled ***Knowledge, Attitudes and Practices of Primary Health Care Providers regarding management of emergency contraceptives in Ohangwena region, Namibia, for educational programme*** in Ohangwena region health facilities.

Before you commence with your study, please present this letter and other letters from the MoHSS and UNAM to the district management where you are intending to conduct your studies.

We hope the results will also help the region to improve service delivery for our esteemed clients and patients.

We wish you success in pursuing this mammoth task.

Faithfully yours

John N. Hango
Regional Director
Cc: 1) DCC - Engela
2) DCC - Eenhana
3) DCC - Okongo



ANNEXURE E: CONSENT FOR PARTICIPATION IN THE STUDY

UNIVERSITY OF NAMIBIA

CONSENT TO PARTICIPATE IN RESEARCH

KNOWLEDGE, ATTITUDES AND PRACTICES OF PRIMARY HEALTH CARE PROVIDERS REGARDING MANAGEMENT OF EMERGENCY CONTRACEPTIVES IN OHANGWENA REGION, NAMIBIA

You are asked to participate in a research conducted by Mrs Loide Nghifikwa, a Doctoral student in Public Health at the University of Namibia and the, Main Supervisor: Dr Käthe Hofnie-//Hoëbes and Co-Supervisor: Dr Kristofina Amakali, Faculty of Health Science, School of Nursing and Public Health, at the University of Namibia.

The purpose of the study is to assess the knowledge, attitudes and practices of Primary Health Care Providers regarding management of emergency contraceptives and to develop educational program to facilitate the management of emergency contraceptives in Ohangwena region.

Your participation in this study is voluntarily, feel free and answer all the questions. - You will receive the questionnaire to fill out your own at the time of the study and hand it to your supervisor. Completion of a questionnaire will take about 15 minutes.

There are no risks associated with the research questions. If you are not comfortable with certain questions, you may decline to answer them. Family planning (FP) and emergency contraceptive sometime is a sensitive issue to be discussed and some people may feel uncomfortable to reveal their knowledge, attitude and practice and sometimes people may feel embarrass. You are encouraged to feel free and express your views and opinions on the issue.

All primary health care providers in Ohangwena region will participate in the study because they are the one who are providing FP in the health facilities including emergency contraceptives. The outcomes from this study will lead to better understanding of management of emergency contraceptives by Health Care Providers in the region. Furthermore, it may facilitate changes in the implementation of emergency contraceptive

policies, and as a result, the usage of emergency contraceptives may increase, resulting in minimizing of pregnancies in the region. Although not all primary health care providers will benefit directly, those who will be willing to attend an educational seminar will benefit.

There will be no reimbursement for participation. The information you provide will benefit you and others by enabling decision makers to learn more on the management of emergency contraceptives by Health Care Providers in the region.

You are rest assured that confidentiality will always be maintained. No name or other personal details will appear on the questionnaire. The researcher and the supervisors are the only people that will have access to the data collected. The information you provide remains confidential and can be disclosed only with your permission or as required by law. The findings of the research study will be presented in a report with the permission granted by the Ministry of Health and Social Services for the benefit of improving the management of emergency contraceptives by Health Care Providers in the region

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The researcher may withdraw you from this research if circumstances arise which warrant doing so. Should you agree to participate, please sign your consent with full knowledge of the nature and purpose of the study.

If you have any questions or concerns about the research, please feel free to contact:

Mrs. Loide Nghifikwa on (264 -65) 22332250.cell 264812470759, or

The main supervisor Dr Käthe Hofnie-//Hoëbes 061-20623207: E-mail: khofnie@unam.na and Co-Supervisor: Dr Kristofina Amakali, Faculty of Health Science, School of Nursing and Public Health, at the University of Namibia. Tel 061-20623297: E-mail: kamakali@unam.na

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

Should you agree to participate, please sign the consent provided. If you have any question that need clarification you are welcome to contact me.

I -----

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

Signed at -----

Participant signature

Date

Researcher signature

Date _____

ANNEXURE F: RESEARCH INSTRUMENTS(QUESTIONNAIRE)

DATA COLLECTION QUESTIONNAIRE FOR PRIMARY HEALTH CARE PROVIDERS:

SECTION ONE: BACKGROUND INFORMATION OF PRIMARY HEALTH CARE PROVIDERS

Please write in the space provided and where applicable, tick in the box with an appropriate answer by making an (X) sign/ symbol

1. District.....

2. Health care facility.....

3. Age of the participant-----

4. Marital status

Single	
Cohabitant	
Married	
Divorced	
Widowed	
Others-----specify	

5. Religion

Lutheran	
Catholic	
Anglican	
Christian	
Non-Christian	
Others----- (specify)	

6. Professional qualification

Doctor	
Registered nurse/ Midwife	
Enrolled nurse	
Enrolled Nurse/midwife	
Other----- (specify)	

7. Have you ever worked in family planning (FP) clinic before? Yes----- No-----

8. If yes, for how many years have you worked in family planning (FP) clinic-----

SECTION TWO: QUESTIONNAIRE FOR ASSESSING THE KNOWLEDGE OF PRIMARY HEALTH CARE PROVIDERS ON EMERGENCY CONTRACEPTIVE

9. Have you ever heard of emergency contraceptive? Yes ---- No _____-

10. What emergency contraceptives do you know? **(Tick all applicable)**

Combined pills	
Progesterone only pills	
Estrogen only pills	
Copper IUD	
Nur- Estrate injection	

11. What is the correct time for effective use of EC.

Within 72hours after unprotected intercourse	
Within 24 hours after unprotected sex	
After missed period	
During menstrual period	
Do not know	

12. How do emergency contraceptives works?

Prevent pregnancy	
Induce abortion	
Prevent pregnancy and induce abortion	
Do not know	

13. Who are the appropriate candidates for the use of EC? **(Tick all applicable)**

Women who have had unprotected sex	
Incontinent contraceptives users	
Women who have infrequency sex	
Adolescents	
Women with multiple partners	
Peri -menopausal women	
Do not know	

14. Under what conditions do you give EC? **(Tick all applicable)**

Rape	
Unprotected intercourse	
Condom breakage	
Missed pills	
Infrequent sex	
Do not know	

SECTION THREE: QUESTIONNAIRE FOR ASSESSING THE ATTITUDES OF PRIMARY HEALTH CARE PROVIDERS ON EMERGENCY CONTRACEPTIVE:

Choose one of the following responses and indicate with an X in the corresponding box

Strongly Agree (SA), Agree (A), Don't know (DK), Disagree (D) and Strongly Disagree (SD)

	Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree
--	----------------	-------	------------	----------	-------------------

15. All primary care providers should be aware of EC and be able to prescribe it when necessary.					
16. Every health facility should have easy access to EC.					
17. A greater use of EC saves money over abortion and unwanted childbearing.					
18. The EC is safe to use					
19. The EC is less effective than regular contraceptives.					
20. EC would not discourage the use of other forms of contraception. =					
21. The easy availability of EC does not promote risky sexual behaviour.					
22. If I had a client who had unprotected sex during the unsafe period, I would recommend EC.					
23. EC should be recommended for both married and unmarried women.					
24. Only commercial sex workers use EC.					
25. Giving unmarried adolescents emergency contraception encourages sexual promiscuity.					
26. It is preferable to advise a sexually active adolescent to abstain from sex rather than provide contraception.					
27. Adolescents should be counselled on contraception before becoming sexually active.					
28 Adolescents do not need parental permission to use contraception.					

29. I'm hesitant to prescribe EC because of the possibility of side effects.					
30. Because of my religious beliefs, I do not prescribe EC.					
31. Because of my cultural beliefs, I do not prescribe EC.					

SECTION FOUR: QUESTIONNAIRE FOR ASSESSING THE PRACTICE AND MANAGEMENT OF EC BY PRIMARY HEALTH CARE PROVIDERS.

32. Have you ever been trained in family planning (FP)? Yes or no

33. Have you ever been trained in family planning (FP) and EC? Yes----- or no-----

34. Do you have EC available at the facility Yes-----No_____?

35. Do you provide EC to clients? YES --or no--- If no-----, go to question no 41. If yes, answer the next questions.

36. Which method have you prescribe?

37 Under which condition have you prescribed EC.?

--

38. Write down the recommended EC that you prescribed (pills identification, dose and timing)?

39. Was there any side effect caused by EC?

40. Under which situations do you gave information to clients concerning emergency contraceptives.-----

41. What are the problems you are facing regarding the provision of EC?

42. What suggestions do you have to improve the provision and management of
emergency contraceptives.-----

**ANNEXURE G: INVITATION LETTER TO PARTICIPATE IN THE
TRAINING AT EENHANA DISTRICT HOSPITAL**

ENQUIRY: Ms. L. Nghifikwa

CELL: 0812470759

TO: Ms. /Mr. -----

**SUBJECT: Invitation to the training to support the Primary Health Care Providers
in Ohangwena Region regarding the management of emergency contraceptives**

Dear Sir /Madam

You are cordially invited to attend a training to support the Primary Health Care Providers
in Ohangwena Region regarding the management of emergency contraceptives

Date: 25-26 October 2018

Venues: Eenhana District hospital

Time: 8h00 -17h00

Your presence will be highly appreciated

Thank you

Yours Faithfully

Loide Nghifikwa

ANNEXURE H: TRAINING PROGRAMME IMPLEMENTATION AND EVALUATION

TRAINING PROGRAMME TO SUPPORT THE PRIMARY HEALTH CARE PROVIDERS IN OHANGWENA REGION REGARDING THE MANAGEMENT OF EMERGENCY CONTRACEPTIVES

VENUE: EENHANA HOSPITAL

DATE: 25-26 OCTOBER 2018

TIME	ACTIVITY
8H30- 8H40	REGISTRATION
8H40- 9H00	INTRODUCTION OF PARTICIPANTS
9H00- 9H15	TRAINING INTRODUCTION, EXPECTATIONS AND OBJECTIVES
9H15- 9H20	GROUND RULES
9H20 -9H35	PRE- TEST
9H35 -10H15	GENERAL INFORMATION ABOUT: <ul style="list-style-type: none">• Adolescent's sexual and reproductive health• Privacy and confidentiality• Parental communication of sexual and reproductive health matters with adolescents• Research on emergence contraception,• Legal aspects that guiding the use of EC among adolescents
10H15-10H30	TEA BREAK
10H30-13H00	GENERAL INFORMATION AND DISCUSSION ABOUT: <ul style="list-style-type: none">• Policy regarding emergence contraception uses around rape among the adolescents

- Awareness campaign for emergency contraceptive
- Social, cultural and religion factors influence the use of EC
- Misconceptions about emergence contraception
- Financial barriers to access EC by adolescents

13H05 – 14H00 LUNCH

14H00-17H00 GENERAL INFORMATION AND DISCUSSION ABOUT:

- Emergency contraceptive methods availability and stock out
- Adolescents awareness and knowledge about EC
- Comprehensive sexuality education in schools

17H00-17H05 END OF THE DAY

DAY 2

8H30- 8H40 REGISTRATION

8H40- 9H00 RECAP

9H00-10H15 TEA BREAK

10H30-12H00 KNOWLEGDE ABOUT EMERGENCY CONTRACEPTIVE

12H00-13H00 ATTITUDE TOWARDS EMERGENCY CONTRACEPTIVE

13H05 – 14H00 LUNCH

14H005- 15H00 PRACTICE OF EMERGENCY CONTRACEPTIVES

15H00- 15H15 POST TEST

15H15- 15H30 TRAINING EVALUATION

15H30- 16H00 CLOSING

ANNEXURE I: PRE/POST - TRAINING TEST

Participant Name: -----

Date: -----

District and Region -----

Instructions: Circle the letter(s) of the answer(s) you consider correct. There may be more than one correct answer.

1. Emergency contraceptives may be used:
 - a. Up to 24hours after unprotected sexual intercourse
 - b. Up to 120 hours after unprotected sexual intercourse
 - c. Up to 72hours after unprotected sexual intercourse
 - d. Up to one week after unprotected sexual intercourse

2. The most common side effects of emergency contraceptives are:
 - a. Nausea
 - b. Vomiting
 - c. Blurry vision
 - d. Weight gain
 - e. None of the above

3. If using low-dose combined oral contraceptives, the correct formulation for emergency contraception would be:
 - a. Two pills immediately followed by two pills 12hours later
 - b. Four pills immediately followed by four pills 12hours later
 - c. Twenty pills immediately followed by twenty pills 12hours later
 - d. One pill immediately

4. If using progestin-only pills, the correct formulation for emergency contraception is:
 - a. 25LNG 0.03mg pills followed by twenty-five pills 12hours later
 - b. 4LNG 0.03pills followed by four pills 12hours later
 - c. 20 LNG 0.003pills followed by twenty pills 12hours later
 - d. none of the above

5. The following methods may be started immediately following emergency contraceptives use:

- a. Female Sterilization/Voluntary Surgical Contraception
- b. Injectable
- c. Combined Oral Contraceptives
- d. Condoms
- e. Norplant implants

6. Following emergency contraceptives use, the percentage of women who become pregnant is approximately:

- a. 20 percent
- b. 10 percent
- c. 5percent
- d. 2percent

7. Emergency contraceptives are appropriate for use in the following situations:

- a. In cases of contraceptive failure
- b. In cases of sexual assault
- c. In cases of contraceptive non-use
- d. All of the above

Instructions: Mark “True” or “False” in the blank provided for each statement.

8. Only pills containing oestrogen and a progestin may be used for emergency contraception.

9. Emergency contraceptives cause nausea in a range of 20 percent and 40 percent of users.

10. Emergency contraceptives provide contraceptive protection for the duration of the menstrual cycle in which they are used.

11. Emergency contraceptives cannot cause an abortion.

12. Emergency contraceptive can cause sterility among the adolescents

13. Condoms and other barrier methods may be started immediately following emergency contraceptives use.

14. The only contraindication to emergency contraceptives use is a current pregnancy.

15. Easily availability of emergency contraceptives does not increase risky sexual behaviours

16. Depending on FP guideline, emergency contraceptives can be provided by properly trained physicians, nurses and pharmacists.

17. Emergency contraceptives can be effective when used as a regular contraceptive method.
18. All clients should undergo a full pelvic exam before receiving emergency contraceptives.
19. A single dose of 1.5mg of levonorgestrel is equally effective as 2doses of 0.75mg of levonogestrel.
20. It is better to tell a sexually active adolescent to abstain from sex when they ask for contraceptive rather than give them.

ANNEXURE J: TRAINING EVALUATION FORM

Date: _____

Title of the training: _____

Trainer _____

Instructions: Please indicate your level of agreement with the statements listed below as from 1-11 with an X

Statements	Agree	Neutral	Disagree
1. The training's objectives were clearly defined.			
2. Interaction and participation were encouraged.			
3. The topics covered were of interest to me.			
4. The information was well-organized and simple to understand.			
5. The materials provided were beneficial.			
6. My training experience will be beneficial to my work.			
7. The instructor was well-prepared.			
8. The trainer was well-versed in the training topics.			
9. The training goals were met.			
10. The training time allotted was sufficient.			
11. The training facility and room were adequate and comfortable.			

12. What was your favourite part of this training??

13. What aspects of the training could be made better?

14. How do you expect this training to impact your practice?

15. What additional emergency contraception trainings do you want in the future?

16. Please add any additional comments or expand on previous responses here.

ANNEXURE K: EDITOR CONFIRMATION LETTER

ACET Consultancy
Anenyasha Communication, Editing and Training
Box 50453 Bachbrecht, Windhoek, Namibia
Cell: +264814218613
Email: mlambons@yahoo.co.uk / nelsonmlambo@icloud.com

13 June 2022

To whom it may concern

LANGUAGE EDITING – LOIDE AMBUGA NGHIFIKWA

This letter serves to confirm that a **DOCTOR OF PHILOSOPHY IN PUBLIC HEALTH** dissertation entitled *AN EDUCATIONAL PROGRAMME TO SUPPORT THE PRIMARY HEALTH CARE PROVIDERS REGARDING THE MANAGEMENT OF EMERGENCY CONTRACEPTIVES AMONG ADOLESCENTS IN OHANGWENA REGION, NAMIBIA* by LOIDE AMBUGA NGHIFIKWA was submitted to me for language editing.

The dissertation 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