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A MODEL TO PROMOTE THE USE OF IMPLANT CONTRACEPTIVE METHOD IN VHEMBE DISTRICT, LIMPOPO PROVINCE

by

Shihundla Rhulani Caroline

Student Number: 9624007

Thesis submitted in fulfillment of the requirement of the degree:

Doctor of Philosophy

Department of Advanced Nursing Science
School of Health Sciences
Faculty of Health Sciences
University of Venda

Supervisor
Professor R.T. Lebese

Co-Supervisor
Professor M.S. Maputle

18 May 2021

DECLARATION

I, Rhulani Caroline Shihundla, hereby declare that the research project entitled "***A Model to Promote the use of Implant Contraceptive Method in Vhembe District, Limpopo Province"*** submitted for the **Doctor of Philosophy (PhD)** degree at the University of Venda, is my own work. Sources used and cited indicated and acknowledged by means of complete references. This research project has never been submitted previously for any degree to any other institution.

Rhulani Caroline Shihundla Signature: 

Student Number: 9624007

DEDICATION

I dedicate this thesis to:

My late parents Mahatlane Petrus John (German) Shihundla, and Nyanisi Mujaji (Nwavukeya) Shihundla.

My adoring and supportive children, Hulisani, Sharon and Khanyisa. Thank you for the affection and care shown during this research study.

My loving husband, Mr. Takalani Elvis Nemandalale, thank you for the limitless support and inspiration imaginable.

ABSTRACT

Background: Around 80 million unintended pregnancies occurred worldwide annually, and most of them are due to the non-use or the inconsistent use of contraceptive methods. Implant contraceptive method provides long-term pregnancy prevention for a period of three to five years, depending on the type of the device. Implant contraceptive method is typically associated with lower failure rates in preventing unintended pregnancies than methods that required self-administration. Types of implants includes Norplant, Implanon, Jadelle and Sino-implant and are currently available in more than 30 countries of the world.

Purpose: The purpose of this study is to develop a model to promote the use of implant contraceptive method at Primary Health Care facilities in Vhembe District, Limpopo Province.

The study is conducted in two phases. **Phase1:** Objectives; To explore the perceptions of sexually active women about the usage of Implant contraceptive method; To identify the factors that influence the utilization and non-utilization of Implant contraceptive method by sexually active women in Vhembe District. To explore professional nurses' views about factors contributing to the utilization of Implant contraceptive method by sexually active women and to determine the available strategies to promote the utilization of Implant contraceptive method. **Phase 2:** Objectives; To conduct a concept analysis of the core-concept identified; To develop a model to promote the use of Implant contraceptive method by sexually active women; To validate the developed model to promote the use of Implant contraceptive method by sexually active women.

Theoretical framework: The study is conceptualized within the Health Belief Model. This study focused on the six components of Health Belief Model, which are perceived seriousness, perceived susceptibility, perceived benefits, perceived barriers, modifying variables and cues to actions. It is used to understand sexually active women's health-related behaviours and the reasons for non-compliance on the use of Implant contraceptive method.

Methods: This study engaged a qualitative, explorative and descriptive research design in Phase 1. Study population comprised of two groups: sixty-two (62) sexually active women aged 18 to 45 years' and ten (10) senior professional nurses trained on insertion of implant contraceptive method. Study population are obtained through non-probability purposive sampling method. Data was collected through semi-structured interviews for professional nurses and focus group

discussions for sexually active women. Data is analyzed utilizing Tesch's open-coding method. Trustworthiness is ensured by using the principles of credibility, dependability, conformability and transferability. Ethical clearance was obtained from the University of Venda Research Ethics Committee. Permission to conduct study obtained the Limpopo Provincial Department of Health, Vhembe District Executive Manager, Musina and Thulamela Sub-Districts Managers.

Results: The findings revealed that few professional nurses trained on insertion of Implanon, inadequate training affected the quality of services provided. A major barrier for use of Implanon is lack of knowledge and fear of side effects. Furthermore, challenges affecting the use of Implanon is inadequate family and sexual partners' support.

In **Phase 2:** From the findings of the study, the core concept analyzed is 'promote the uptake of Implanon.' The method followed is guided by concept analysis proposed Walker and Avant (2014). Following concept analysis, a model to promote the use of implant contraceptive method at Primary health care facilities in Vhembe District, Limpopo Province is developed. The model was developed using six steps according Dickoff et al., (1968). The steps are context, agents, recipients, procedures, dynamics and terminus/goals. The developed model is validated by using the quantitative design; participants include facility operational managers and professional nurses.

Process: The process of the model to promote the use of implant contraceptive model at Primary health care facilities in Vhembe District, takes place in the following three levels, namely: Level 1; Inadequate training of professional nurses, Level 2; Promote the uptake of implants and Level 3; Compliance with the outcomes.

Recommendations: Nursing practice, comprehensive training of professional nurses on newly introduced family planning methods including, how to meet the reproductive health services for sexually active women. Effective educative interventions could promote broader knowledge about a range of implantable contraceptives. Nursing research, challenges faced by sexually active women in childbearing ages regarding newly introduced Implant contraceptive method need further investigation in nursing education. The developed model should be included in continuous professional development programme to increase the knowledge and understanding of the Implant contraceptive method as one of long acting reversible contraceptives.

KEYWORDS

- Long acting reversible contraceptives
- Implant contraceptive method
- Sexually active women
- Promote.

ACKNOWLEDGEMENTS

I thank The Almighty God, for giving me life free of charge and super protection day and night, and the strength to pursue this study.

I would like to extend my deepest appreciation to the following individuals and institutions who contributed to this study:

- Professor R.T. Lebese, my supervisor, for continuous support, patience and encouragement.
- Professor M.S. Maputle, my co-supervisor, for her passion to encourage, showing possibility in everything throughout this study.
- Special thanks to my husband, Elvis Nemandalale, for the great support throughout this study.
- The Department of Health, for allowing me to conduct this research study at PHC facilities in Vhembe District, Limpopo Province.
- The University of Venda, for giving me opportunity to acquire valuable skills and knowledge.
- All the committees and members involved in reviewing my work, the Higher Degrees Committee of the University of Venda, for their advice and trust in me.
- All my colleagues, especially professional nurses at PHC facilities, who encouraged me to go for it.

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ACRONYMS

CHC	Community Health Centre
DHIS	District Health Information System
DoH	Department of Health
FDA	Food and Drug Administration
FDG	Focus group discussion
ICM	Implant Contraceptive Method (Implanon)
IUCD	Intra-uterine copper device
LARC	Long Acting Reversible Contraceptives
HBM	Health Belief Model
HCS	Health Care Services
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
OC	Oral Contraceptives
OMN	Operational manager nurse
PHC	Primary health care
PMTCT	Prevention of mother to child transmission
RHS	Reproductive health services
SA	South Africa
SAW	Sexually active women
SACM	Short acting contraceptive methods
SDG	Sustainable Development Goals
STIs	Sexual transmitted infections
TOP	Termination of pregnancy
UN	United Kingdom
US	United States of America
WHO	World Health Organization

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction

Implant contraceptive method (ICM) was one of the modern long-acting reversible contraceptive (LARC) methods used globally. This method provides long-term pregnancy prevention for a period of three to five years, depending on the type of implant in use (Stewart & Bateson, 2016). The first scientific publication of ICM-releasing progestogen appeared in 1969. In 1983, the Finnish National Drug Regulatory Authority (Stewart & Bateson, 2016) approved another type of ICM Norplant. In July 2006, the Food and Drug Administration (FDA) in the United States of America (US), officially approved ICM and is currently available in over 30 countries, of the world including Sub-Saharan Africa (Darney et al., 2009), since 2006, different types of ICM were developed. These contraceptives varied from each other depending on the manufactures. That also included lifespan, but the mode of insertion is sub-dermal on the upper inner arm (Stewart & Bateson, 2016).

The types of ICM have included Norplant, Implanon, Jadelle and Sino-implant. These ICM were available all over the world (Jacobstein & Stanley, 2013). The Johns Hopkins Bloomberg School of Public Health (2007) clarified that Norplant manufacturers intended to produce this product until 2008. Freeman and Shulman (2010) argued that in 2002 Norplant was voluntarily withdrawn from the market in the US for non-medical reasons by manufacturers.

Then, six years later the US removed Norplant, as reported by Newberry (2007) for non-medical reasons. The FDA approved another type of ICM, Implanon in July 2006. According to the National Contraception Clinical Guidelines in South Africa, Norplant ICM is no longer in use as it is off the market in South Africa (Mhlanga et al., 2012). In February 2014 another type of ICM (Implanon NXT), was introduced in South Africa, as announced by Health Minister Aaron Motsoaledi in Cape Town during the debate on the President‘s State of the Nation address in Parliament. The main reason for introducing the LARC method was to support the sexual and reproductive health, also to address the unmet contraceptive needs for sexually active women

(SAW) in South Africa (Adeagbo, 2017). Therefore, the purpose of the current study is to develop a model to promote the use of ICM.

1.2 Background of the Study

Yacobson et al. (2012) indicated that effective use of modern contraceptives such as ICM have saved more than one million lives of SAW worldwide. Implant contraceptive methods (ICM) were small, thin, soft flexible plastic rods, like a capsule, preloaded in disposable applicators which allowed them to be properly inserted under the skins of upper inner arms of women (Cea Soriano et al., 2014). The ICM capsules contained the medication, released through the capsule walls into the human body in a continuous low dosage. Its contraceptive effect primarily mediated by constantly suppressing ovulation and producing thick scanty cervical mucus, which hampered sperm cells transportation (Jacobstein & Stanley, 2013). Once ICM was inserted in the upper inner arm of a woman, its effectiveness did not rely on the supply by the provider or daily compliance by the SAW. The failure rate reported by the time of their study for different types of ICM was zero (0) percentage pregnancies for Implanon, 1.1% per 100 women for Norplant and Jadelle, respectively (Stewart & Bateson, 2016).

The use of effective contraceptive methods such as ICM was an integral component of reproductive health and had positive effects on the health of women. However, ICM coupled with a number of side effects but the most common one was menstrual irregularities (Bracken & Graham, 2014). Irregular bleeding was blamed for interfering with sexual activities and disturbed relationship with their SAW partners. As such, SAW around the world preferred not to utilize contraceptives that caused irregular bleeding as a side effect (Samal & Dehury, 2015). ICMs were effective family planning methods that protected women from unwanted pregnancy, thereby saving them from unsafe abortion and other complications (Stewart & Bateson, 2016).

In most countries around the world, health providers were guided by clinical guidelines and protocols on the use and prescription of contraceptive methods to SAW (Dehlendorf et al., 2011). However, in Pakistan unavailability of written policies or guidelines hindered effective provision of family planning services. Hence, the availability of such documents improved staff knowledge and had relevant direction about information to be given to SAW for effective use of available contraceptives (Nishtar et al., 2013). In the study conducted by Short et al. (2014) in four European countries, the guidelines in each country allowed only trained medical doctors to insert the ICM device. However, even in South Africa before implant rollout, health providers' training

programme was initiated to capacitate designated staff members. For that, matter trained medical doctors and professional nurses were the ones who insert ICM, following the prescribed Contraceptive Policy objectives, by the South African National Contraceptive Clinical Guideline (Mhlanga et al., 2012).

Utilization of ICM among SAW was initially low in the European countries. However, the use of ICM rose from 0.5 % to 3.4% within the period of six years from 2004 to 2010, following the information given to SAW about its availability and effectiveness (Cea Soriano et al., 2014; Rowlands & Searle, 2014). In a study conducted in Africa, (Stephenson et al., 2011) argued that irrespective of the information given to SAW about the effectiveness and availability of LARC, the use of ICM remains very low in Zambia. The perceived factors that make the use of ICM lower than expected is the little information received by SAW about the availability, effectiveness and ineffective management of side effects. In addition, negative attitudes by SAW towards the ICM, fear of side effects, lack of partner support, medical related challenges, unavailability of methods, desire to have more children, age, and preference of SACM. The duty of health providers is to give the truthful information regarding ICM (Joseph, 2010; Alemayehu et al., 2015; & Kimani et al., 2015).

Similarly, studies in Kenya and Nigeria revealed misconceptions, side effects and lack of support by sexual partners, were the reasons for the discontinuation of ICM utilization (Anguzu et al., 2014). In South Africa, Kimani et al. (2015) reported low utilization of ICM due to marked side-effects especially irregular bleeding tendencies. Adeagbo et al. (2017) found that in South Africa, there was a marked decline following the initial high usage of the newly introduced ICM in the two provinces, Gauteng and North West where their studies were conducted. The main reason for that considerable decline was said to be frequent side effects.

In Limpopo Province, however, there were no studies found on the use of ICM. Besides the availability of enough ICM supplies at PHC facilities, in Limpopo, there was underutilization of ICM (Conversation with co-workers, 2017). From February 2014 to April 2017, 436,016 SAW aged 18-45 years attended reproductive health services in the two Sub-Districts, Thulamela and Musina in Vhembe District of Limpopo Province. However, only 7,964 were on ICM and majority were found to be using SACM (Vhembe District, DHIS 2014/2015, 2015/2016, 2016/2017).

1.3 Rationale of the study

Implant contraceptive method was one of the modern long-acting reversible contraceptive methods used all over the world. It offered SAW the option of safety in preventing the serious social and public health problem, unintended pregnancies. That method was typically associated with lower failure rate in preventing pregnancies than short-acting contraceptive methods (SACM). ICM usage in South Africa is at less than 10%, as compared to (SACM), regardless of its availability and effectiveness. The effective use of ICM might lead to meeting the need for family planning for SAW in Vhembe District. The study focused on exploring SAW's perceptions on the use of ICM and then developed a model to promote the use of the device among SAW.

1.4 Problem Statement

Implant contraceptive method (ICM) was presented as a cost-effective and highly reliable form of Long acting reversible contraceptives (LARC) that was more widely accessible to all SAW with consideration that it will prevent unintended pregnancy (Lakha, 2013). However, regardless of the effectiveness and availability of ICM, in Vhembe District unintended pregnancies were still high as evidenced by the rate of abortion recorded between 2014/2017 at 35% in Vhembe District (District Health Information System (DHIS 2014/2017). Through experience and research findings, it was revealed that the prevalence of teenage pregnancy and termination of pregnancy (TOP) were high, which tend to be risky for the victims. These unintended teenage pregnancies progressed from 7.0% in 2014 to 7.9% in 2017. The researcher, who is a worker at one of the Primary Health Care (PHC) facilities in Vhembe District, Limpopo Province, discovered that after the introduction of ICM, the uptake has been low, compared to SACM. That was confirmed in all PHC facilities of Thulamela and Musina Sub-Districts during data review meetings with facilities operational managers (OMN) (Conversation with OMN, 2017).

That was the reason the researcher identified this gap for ICM to be used effectively to prevent unintended pregnancies. Despite its effectiveness in prevention of unintended pregnancy, ICM did not protect against sexual transmitted infection (STIs), including Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS); the use of condoms for every sexual encounter was advised (Stewart & Bateson, 2016). During the data review meeting, the projected figures of ICM inserted in all the 43 PHC facilities were very low (PHC Facilities Input Forms 2017). The facilities' statistics were ranging between one and two per month. That low uptake of ICM stimulated the researcher's interest to develop a model to promote the use of ICM in Vhembe

District, Limpopo Province.

Table 1.1: Presents the utilization of short- and long-acting contraceptive methods in Thulamela and Musina Sub-Districts

Sub-District	Total PHC facilities	Financial year	Oral pill cycle	Medroxyprogesterone	Norethi-sterone	ICUD	ICM Inserted
Thulamela	43	2014/2015	36 171	25 859	49 036	00	4 718
		2015/2016	44 472	24 031	43 355	00	1 300
		2016/2017	46 830	25 958	42 664	00	110
Musina	10	2014/2015	8 781	7 024	7 747	03	1 243
		2015/2016	12 771	11 560	10 715	00	349
		2016/2017	12 459	9 925	8 641	20	244

Vhembe District DHIS 2014-2017

Table 1.1 presented the utilization of short and long contraceptive methods in Thulamela and Musina Sub-Districts. The use of ICM compared to the short acting contraceptives is very low less than 10%. Consequently, the data for insertion of Implant contraceptive method for both Thulamela and Musina Sub-Districts are low and its graph is dropping, indicating poor usage of the device in the presence of high teenage pregnancies and unintended pregnancies.

1.5 Research purpose

The purpose of this study was to develop a model to promote the use of Implant Contraceptive Method in Vhembe District, Limpopo Province.

1.6 Research objectives

The objectives that guided this study were presented in phases as:

1.6.1 Phase 1

- To explore the perceptions of SAW about the usage of ICM
- To identify the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District

- To explore professional nurses' views about factors contributing to the utilization of ICM by SAW
- To determine the available strategies to promote the utilization of ICM

1.6.2 Phase 2

- To conduct a concept analysis of core-concepts identified
- To develop a model to promote the use of ICM by SAW
- To validate the developed model to promote the use of ICM by SAW

1.7 Significance of the study

The study was associated with contributions to the body of knowledge for the people and input it would make after completion (Delport & Fouche, 2011). This study might contribute to the Department of Health (DoH), policy-makers, SAW, service providers, and research students.

DoH: The budget allocated for transporting and managing complicated maternity cases and complicated termination of pregnancies' (TOP) cases might be utilized for other health-related issues in the DoH. Effective use of the device until the prescribed time of removal meant an improvement of the service in the DoH and no waste of material would ever be experienced.

Policy-makers: Policy-makers might improve policy guidelines, specifically for contraceptive devices that were inserted in human bodies.

SAW: Maternal mortality rate might be reduced, as there might be a reduction in unintended pregnancies, its complications and consequences of TOP. When ICM was inserted, there was no need for follow-up visits for review or collection of treatment, thereby saving SAW's time and transport fees.

Service providers: Service providers might advance contraceptive knowledge and effective support given to SAW prior, during and after insertion to enhance the use of ICM.

Research students: Recommendations for this study might increase the body of knowledge about ICM as one of the LARC. In completion of the research study researchers might use information from this study for reference purposes in their research studies too.

1.8 Theoretical Framework

The study was conceptualized within the Health Belief Model (HBM) (Figure 1). It was used in this study to understand SAW's health-related behaviours and the reasons for non-compliance on the use of ICM. The HBM was developed in the 1950s in the health sectors (public and private) to account for the unsuccessful screening health programmes offered in the US. The main concern was that people were reluctant to be screened for health-related problems or take other preventive measures that were either free of charge or available at lower cost (Jones et al., 2015).

In the current study SAW were reluctant to utilize the cost-effective ICM which is being offered free of charge at PHC facilities in Vhembe District, hence there was also high unintended pregnancies that were being reported. The researcher discovered that after the introduction of ICM in 2014 February, the uptake has been low, compared to SACM. That was confirmed in all PHC facilities of Thulamela and Musina Sub-Districts during data review meetings with facilities OMN (Conversation with OMN, 2017).

The fundamental of HBM in health-related behaviours was regulated by individuals' personal beliefs or experiences of the health-related problems and the available strategies to overcome those health-related problems. The individuals' personal beliefs or experiences were influenced by a variety of interpersonal factors that affected health-related behaviours. In this study, HBM was used to clarify inconsistent findings on factors relating to the use of ICM and to develop a model to promote the use of ICM in Vhembe District, Limpopo Province. This study focused on the six components of HBM, which are perceived seriousness, perceived susceptibility, perceived benefits, perceived barriers, modifying variables and cues to action.

1.8.1 Six constructs of Health Belief Model

1.8.1.1. Perceived seriousness

Perceived seriousness is the degree of concern that communicates to an individual's beliefs about the severity or seriousness of the disease or health-related problems associated with the use of contraceptives, such as absence of menstruation in SAW using ICM. That perception of seriousness was associated with the basis of knowledge or information one had and might be from some personal beliefs regarding the complications that the health-related problems would bring to an individual's life in general. However, the fear of side effects and willingness to tolerate them partly determine the attractiveness to utilize different contraceptive methods. Thus, SAW's fear of side effects might be more likely to choose contraceptive methods, which do not have

those risks. Subjective-norm factors relate to method of choice. Subjective-norms refer to the perceived support of important others for using contraceptive methods.

1.8.1.2. Perceived susceptibility

Jones et al. (2015) defined perceived susceptibility as the degree at which people notice personal risk that might affect them and prompt individuals to adopt healthier-related behaviours to prevent such risks. The greater the risks that one could come across, the more the plans were made to engage in activities or actions that might reduce the occurrence of the health-related problems. In this study, it might mean that SAW may utilize highly effective contraceptive methods to prevent unintended pregnancies. These could be done properly if they were aware that they were susceptible to unintended pregnancies and its' complications in the absence of use of contraceptives or use of less effective contraceptives.

The present study wished to explore SAW's perceptions on utilization of ICM and to find out whether SAW recognize themselves to be susceptible to unintended pregnancies or not; if so, what types of contraceptive method were they using? Perceived susceptibility to pregnancy and its' complications might positively prompt some SAW to utilize highly effective contraceptive method like ICM as a LARC. Perceived risk/susceptibility was linked with healthy behaviours to prevent the risk but that was not always the case.

SAW were falling pregnant in the presence of different types of contraceptives, including cost-effective contraceptive methods (ICM) at nearby PHC facilities. Therefore, perceived susceptibility explain health-related behaviours in some situations, but not all. This could indicate that those SAW having unintended pregnancies in the presence of different contraceptive methods did not perceive themselves to be susceptible to unintended pregnancies or they lacked knowledge about the availability of such RHS (Jones et al., 2015).

1.8.1.3. Perceived benefits

That was the person's ideas about the usefulness of changing to new health-related behaviours to reduce the occurrence of unhealthy behaviours. According to the HBM the reason for using effective contraceptive methods is to prevent unwanted pregnancy or promote child spacing as desired by SAW or family members (Jones et al., 2015). Jones et al. (2015) asserted that for SAW to benefit from reproductive health services, it was crucial for them to utilize contraceptive methods that they believed work effectively for them.

Higgins, Kramer and Ryder (2016) found that people were more likely to follow instructions from health providers if they know that the treatment or method they chose would prevent or treat the condition as required. They further argued that for patients to benefit from different types of family planning methods, pre-counselling sessions should be a patient-centered approach, as provider-centered approach might lead to early discontinuation or poor compliance. In this study, the researcher desired to explore the perceptions of SAW on benefits and risks of using ICM in preventing unintended pregnancies.

1.8.1.4. Perceived barriers

Perceived barriers were possible issues or factors that might prevent people from engaging in healthy preventive behaviours. Perceived barriers might be physical, psychological and individual characteristics. In this study, the researcher intended to find out the physical, psychological and individual characteristics of the SAW in relation to the use of ICM. Barriers to utilize contraceptives might include the country's laws, medical barriers, social and ethical issues. In addition, the researcher explored the professional nurses' views on factors contributing to the use of ICM (Jones et al., 2015).

1.8.1.5. Cues to action

Cues to action refer to precipitating or facilitating factors that motivate an individual to take action. Cues to action can be internal or external stimuli that SAW come across in their daily living that may motivate them to use contraceptives to prevent pregnancy. Physiological cues are examples of internal cues to action, e.g. missed menstrual period, experienced complicated delivery. External cues include events or information from others, the media or health care providers promoting engagement in the health-related behaviours. Examples of cues to action include a reminder postcard from a doctor, the illness of a friend or family member and product of health warning labels (Jones et al., 2015). Learning from seeing others using the method or hearing that someone is using such method are internal cues of action.

The intensity of cues needed to prompt action varies between individuals by perceived susceptibility, seriousness, benefits and barriers. For example, individuals who believe that they are at high-risk of falling pregnant and who have established relationships with health providers or community health workers, may be easily persuaded to utilize cost-effective contraceptive

methods to prevent the risks of unintended pregnancies. Moreover, those who do not have reliable access to health care may require more intense external cues in order to utilize the method. In this study, the researcher will attempt to find out the external and internal cues to promote the use of ICM (Jones et al., 2015).

1.8.1.6. Modifying variables

Individual characteristics, including demographic, socio-psychological and structural variables, can affect perceptions of health-related behaviours. Demographic variables include age, parity, and level of education. Socio-psychological variables include personality, social class and economics, and peer group pressure. Structural variables include knowledge about given health problems. The HBM suggests that modifying variables affect health-related behaviours indirectly by affecting perceived seriousness. In this study, the researcher will find out the influence of these demographic, socio-psychological and structural variables on the use of ICM as one of family planning methods (Jones et al., 2015).

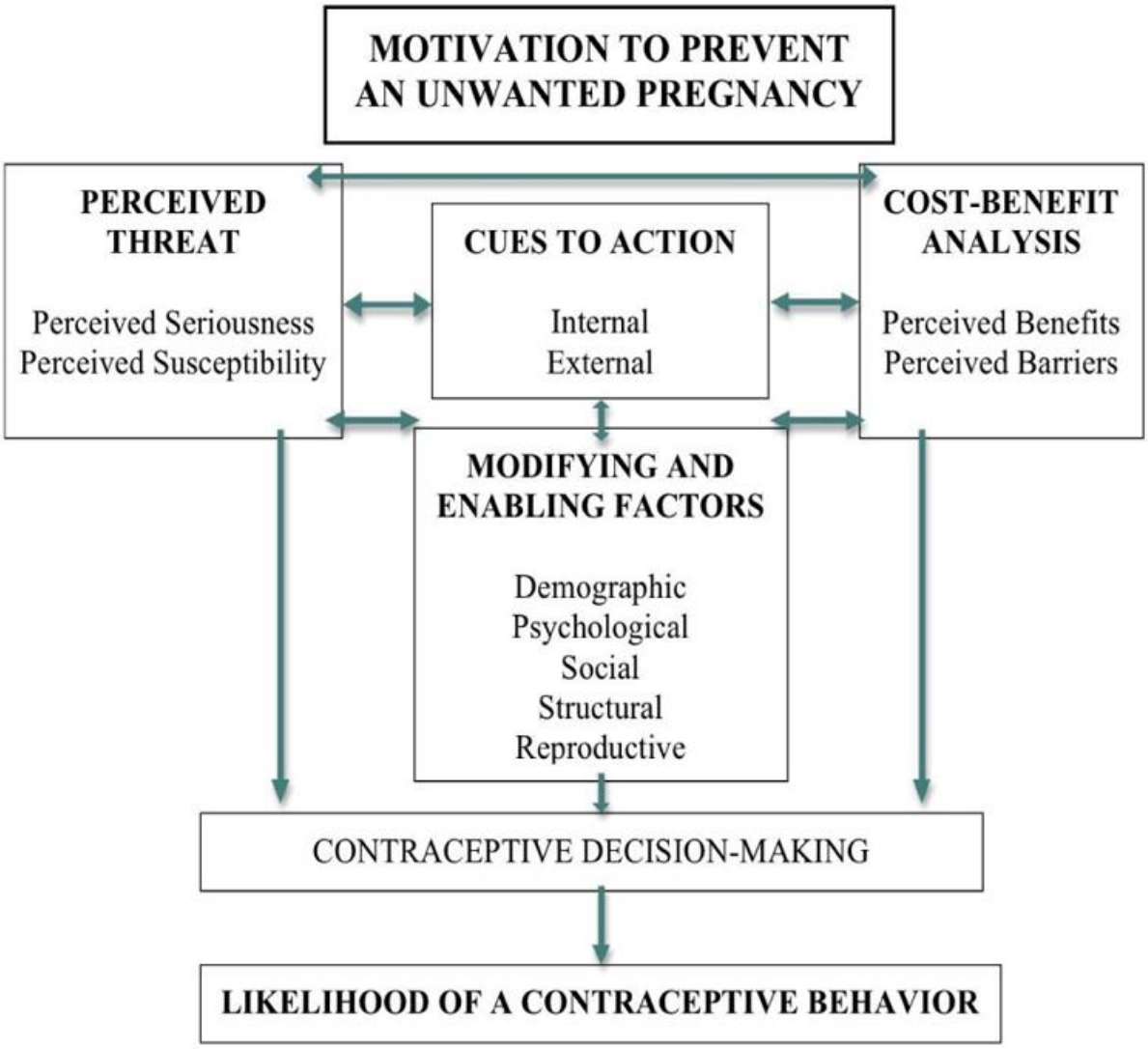

Figure 1.1: The Health Belief Model can guide Modern Contraceptive Behaviour Research and Practice (Hall 2013).

1.8.1.7 Application of the model

From the Health Belief Model highlighted above, the few six constructs will be undertaken to guide the topic under study and develop the model. The suitability of HBM is measured by its ability to provide guidance and direct the research study (Polit & Beck, 2008). The HBM empowers the health professionals to improve patients' unhealthy behaviour by informing them how to break down their perceived barriers to adopt healthy required actions. The following are the selected six constructs of HBM:

1.8.1.7.1. Perceived seriousness: Pregnancy is a perceived situation that, temporarily or permanently changes physical beings of SAW and accompanied by other consequences that may arise as it progresses. The consequences of unintended pregnancy include morning sickness encountered during pregnancy, as one can feel it as a more serious problem when the pregnancy is not wanted. The complications that may arise during labour and delivery, for example fetal distress leading to caesarean section, put more pressure on a woman as she will always be blaming herself for not adhering to or not using family planning methods. If SAW fear the consequences of an unintended pregnancy and believe that it is important enough to try to avoid, they may use ICM which has a failure rate of less than 1%.

1.8.1.7.2. Perceived susceptibility: In as much as SAW have the knowledge that they are expected to have to prevent unintended pregnancy, its' consequences and complications, they will make appropriate plans to avoid these risks. According to Cea Soriano et al. (2014), one-third of unintended pregnancies in the population of UK are regarded as contraceptive failure, meanwhile LARC; ICM are typically linked with lower failure rates. Even if they utilize contraceptives that are not highly effective or when they are failing to follow prescription of self-administered contraceptives as indicated by health providers they know that they may fall pregnant. These may trigger people to use safer family planning methods like LARC, ICM (Jones et al., 2015).

1.8.1.7.3. Perceived benefit: This is the person's ways of thinking about the usefulness of changing from unhealthy to a new health-related behaviour to reduce the occurrence of risks, which is an unintended pregnancy (Jones et al., 2015). Understanding behaviour displayed by the patients is crucial. If SAW understand and know that by using ICM the chances of falling pregnant are very slim, they will utilize this method to prevent unintended pregnancy (Cea Soriano et al., 2014).

1.8.1.7.4. Perceived barriers: According to Jones et al. (2015) perceived barriers play an important part in behaviour change; SAW will be able to find out the issues or factors that prevent them from utilizing ICM as a cost-effective method of family planning. According to Alemayehu et al. (2015) and Kimani et al. (2015) perceived barriers for not using ICM include little information received by SAW about the availability and effectiveness of ICM, fear of side effects, lack of partner support, medical related challenges, unavailability of methods, desire to have more children, age, and preference of SACM. In the US, the primary reason for not utilizing ICM was fear of the pain inflicted by needles during insertion of the device (Bracken & Graham, 2014). This

is the time SAW will find ways to reduce or break down their perceived barriers to utilize the contraceptive method, ICM.

1.8.1.7.5. Cues to action: Cues to action referred to precipitating or facilitating factors that will motivate SAW to act to utilize ICM, as it is a cost-effective method for preventing pregnancy. Cues to action can be internal or external. In this study, health providers giving information to SAW (Jones et al., 2015) will use external cues. Health providers can play a major role in helping SAW to implement external cues to action to change unhealthy behaviours. They will explain the relationships of the constructs of HBM to SAW as external cues to action, to motivate them to change unhealthy behaviour to health-related behaviour. Health providers will use posters to remind SAW about availability, effectiveness, and benefits of using ICM including management of side effects thereof. Health providers will also use reminder cues for action in the form of incentives or messages and postcards to serve as reminders for patients to visit the PHC facilities for reproductive health services (Jones et al., 2015).

1.8.1.7.6. Modifying variables: Factors that can be modified for SAW's contraceptives choices are individual characteristics that include demographic, socio-psychological and structural variables, as they may affect perceptions of health-related behaviours. Demographic variables include age, parity, and level of education. Socio-psychological variable that could affect SAW's decisions to use ICM include personality, social class, economic status and peer group pressure. Structural variables may mean the distance between health facilities and villages where SAW come from to access reproductive services. Furthermore, structural variables cover the times for rendering reproductive health services stipulated by different PHC facilities and availability of health providers trained on insertion of ICM.

1.9. Definition of Terms

1.9.1. Long-acting reversible contraceptives

A category of contraceptives with long-term contraceptive coverage, ranging from three years to ten years. The effects of these contraceptives are reversible; include intrauterine devices (IUD) and contraceptive arm implants (ICM). In this study, long-acting reversible contraceptives is the newly introduced Implanon NXT that is inserted on the upper arm of SAW to prevent pregnancy for three years or more depending on the duration estimated for the device.

1.9.2. Implant contraceptive method

Implant contraceptive method are small soft flexible plastic rods or capsules containing medication, preloaded in disposable applicators which allow them to be properly inserted under the skin of women's' upper inner arms to prevent pregnancy (WHO/RHR: 2011). For this study, implant contraceptive method is one of the long-term acting family planning methods where a small artificial plastic device is inserted in the upper inner arm of SAW, which then releases medication into the body to temporarily prevent pregnancy.

1.9.3. Promote

To advertise or encourage use of a service/product by selling it at a very low affordable price (Hornby, 2010). In this study "promote" means to talk about ICM and make it more popular to users, through giving motivational information to encourage SAW to utilize this method of contraceptives as it is highly effective and free of charge at public health facilities (PHC and hospitals).

1.9.4. Sexually active women

Sexually active women(SAW) are all females who may practice the physical activity of sex with partners of opposite sex that may lead them to fall pregnant (Hornby, 2010). This study includes all women aged 18 to 45 years who practice the physical activity of sex with partners of opposite sex who require a method of birth control to prevent unintended pregnancy.

1.10. Research Setting

Research setting denotes to the specific chosen place or area where data was collected or the physical location where data gathering takes place for specific study (Brink, Van der Walt & Van Rensburg, 2013). Vhembe District is situated in the Northeastern corner of the Limpopo Province in South Africa and shares borders with Mozambique and Zimbabwe. The District is divided into four Sub-Districts: Thulamela is the biggest made up of 43 PHC facilities, Musina is the smallest comprised of 10 PHC facilities, Collins Chabane and Makhado Sub-Districts, each comprised of 33 PHC facilities. Amongst others, Vhembe District is deemed the most rural area of Limpopo Province. The researcher observed ICM low uptake from Vhembe DHIS, then purposefully

selected Thulamela and Musina Sub-Districts as the areas of interest to conduct the study. In addition, facilities in these Sub-Districts render multiple PHC services, including insertion of the ICM device as one of the RHS seven days per week.

1.11 Research Design

Research design as a set of guidelines and instructions followed in addressing research problems throughout the study, from identification of the problems progressing to the results (Babbie & Mouton, 2009). To some extent, this plan dictates the different techniques, methods and procedures the researcher selects to follow (Leedy & Ormrod, 2010). There are two well-known research designs in the research world, which are qualitative design and quantitative design. The purpose of qualitative research according to Creswell et al. (2009) is to gather full information in a real setting, in order to develop understanding of people's behaviours, actions and attitudes in their natural settings. In the current study, qualitative strategy was employed to collect and analyze data from professional nurses and SAW aged 18 to 45 years.

The study was conducted in two phases:

Phase 1, the researcher considered and applied the qualitative strand that involved collecting data and analyzing data from SAW and professional nurses. This phase addresses objectives one, two, three and four. **Phase 2,** addressed objective 5, that is the purpose of the current study: to develop a model to promote the use of Implant contraceptive method in Vhembe District, Limpopo Province.

1.12 Summary of Research Approach

The research design employed in the current study, briefly sketched below (See Table **3.1:** Chapter 3. The two well-known research designs in the research world mentioned are qualitative design and quantitative design. The third design was offered by Creswell (2013), called the mixed method or multiple methods. The study was conducted in phases, which includes Phase 1 and 2. The qualitative design used in Phase 1 where data from SAW and professional nurses was collected and analyzed. That addressed objectives one to four, meanwhile Phase 2 addressed the fifth objective, which is the main objective of this study. The main objective was to develop a model to promote the use of Implant contraceptive method in Vhembe District, Limpopo Province.

1.13 Organization of Chapter

1.13.1 Chapter 1

Chapter 1 provides overview of the study and takes account of the background, problem statement, purpose of the study, objectives, research question, significance of the study rationale, theoretical framework, definition of terms, research setting, and research design summary of research approach and organization of chapters.

1.13.2 Chapter 2

Covers the literature review

1.13.3 Chapter 3

Summarizes the research methodology. The qualitative research approach was employed. The research methods, research design, research setting, population, sampling data collection methods, data analysis for the qualitative research approach.

1.13.4 Chapter 4

Is the discussion of findings, which describe the perceptions of SAW about the usage of ICM, the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District were outlined? Professional nurses' views about factors contributing to the utilization of ICM by SAW and describes the available strategies to promote the utilization of ICM.

1.13.5 Chapter 5

Covers concept analysis and model development

1.13.6 Chapter 6

Comprises the conclusion, summary and limitations of the study and validation of the developed model.

1.14 Summary

This chapter provided an overview of the study, including the introduction, background and rationale of the study which outlined challenges encountered by regions and countries that need to be attended to, to promote the use of ICM. The significance and purpose of the study was described to give a sense of the expected outcomes of this study. The research question, objectives and definition of terms explained. The conceptual framework selected to support this study, “Health Belief Model” discussed. The next chapter comprises of the literature review.

CHAPTER 2

Literature Review

2.1 Introduction

The objective of literature review is the process to review relevant creative written information. It covers a large area of information according to the researcher’s plan, through reading and understanding pertinent publications related to a research study. Therefore, it includes differences and similarities between the topic under study and previous related studies; it also indicates concepts used throughout the studies (De Vos et al., 2011).

Therefore, this chapter will review existing literature on the use of ICM with focus on SAW, bearing in mind that the decisions to use the device (ICM) are made in a complexity and variety of social situations SAW come across. It is important to consider the factors and constraints on decision-making change, as people move through different stages of life. The researcher identifies the previous and present research studies that discussed experiences, knowledge, perceptions, use and non-use associated with ICM. The search words used for this study include perceptions about Implanon**,** experiences about Implanon, knowledge, factors influencing use and non-use of ICM (Brink et al., 2012). The purpose of this study is to develop a model to promote the use of an implant contraceptive method in Vhembe District, Limpopo Province.

WHO (2015) alluded on Sustainable Development Goals (SDG) 3, 3.7, that by 2030 the universal access to sexual and reproductive health services (RHS) including family planning, information and education, and the integration of reproductive health into national strategies and programmes

must be ensured. Eliason, Baiden, Quansah-Asare, Graham-Hayfron, Bonsu, Phillips and Awusabo-Asare (2013) outlined that these aimed at reducing maternal mortality by three quarters, which are closely associated to complications of unintended pregnancies.

A significant intervention towards achieving this goal is through promoting the use of modern contraceptive methods among SAW in Sub-Saharan Africa to prevent unintended pregnancies (Eliason et al., 2013). Therefore, the purpose of this study is to develop a model to promote the use of ICM in Vhembe District, Limpopo Province, which is an intervention towards prevention of unintended pregnancies to improve the required standard of family planning among SAW.

2.2 Description of Implant contraceptive method

Implant contraceptive method (ICM) is a subdermal, progestin-only and hormonal contraceptive that contains 68 mg ENG, the active metabolite of desogestrel. It is one of the modern long-acting reversible contraceptive (LARC) methods used all over the world (Di Carlo, Sansone, De Rosa, Gargano & Tommaselli, 2013). Nappi, Bifulco, Tommaselli, Gargano and Di Carlo (2012) clarified that ICM is an extremely effective LARC currently in existence and contains progestin-only which releases an ultra-low amount of progestin continuously into the bloodstream. These contraceptive devices are inserted under the skin of the upper inner arm, which is less active (Eliason et al., 2013). The device remains in the human body for a specific prescribed period depending on the type of the method. Once the ICM is inserted, minimal requirements for medical follow-up are necessary, although other contraceptives, especially SACM requires frequent visits as to review regimen. Kumar and Brown (2016) pointed out that ICM is more convenient as it offers 3-5 years' contraceptive protection without the users' actions to maintain, depending on the duration of the LARC an individual chose to use.

Implant contraceptive method (ICM) provide SAW with effective long-acting reversible contraception, hence its efficacy is not user dependent for that prescribed period. These methods have low failure rates of less than one percent compared to SACM (Eliason et al., 2013). They are easier to insert, remove and effectively prevent pregnancy. They are cost-effective and can result in significant cost savings for both individuals and government, thus contribute directly to influencing national and international reproductive health goals, the SDG (Adal, 2017).

2.2.1 Types of Implant contraceptive method

Currently there are three known and available types of ICM namely: Implanon NXT implants, Sino-implant II, and Jadelle implants (Jacobstein & Stanley, 2013).

Implanon NXT: These are small soft flexible plastic rods or capsules. Each consist of a single-rod containing 68 mg of Etonogestrel, 4cm in length and 2mm in diameter (Jacobstein & Stanley, 2013). Adeagbo et al. (2017) indicated that Implanon NXT marketed internationally, as Nexplanon, and is effective for a period of three years. Mansour (2010) clarified that Nexplanon is the same as Implanon NXT, has similar colour, flexibility and overall dimensions as Implanon NXT. However, Nexplanon contains 68mg Etonogestrel with 3% barium sulphate, 37% ethylene vinyl acetate (EVA) copolymer and 3% barium sulphate (15mg) (Mansour, 2010)**.**

Sino-implant II: Consists of six thin, flexible, silastic capsules, which allow them to be properly inserted under the skin of SAWs' upper inner arms. Each capsule consists of two rods that contain 75mg progestin Levonorgestrel and is effective for four years (Jacobstein & Stanley, 2013).

Jadelle implant: Consists of two flexible rods, white to off-white rods 43mm in length and 2.5mm in diameter, each containing 75mg Levonorgestrel. Jadelle contraceptive is commonly used in Germany and is effective for five years (Jacobstein & Stanley, 2013). **Table** 2.1: Indicating the key characteristics of the known and available ICM.

Table 2.1: Key characteristics of the three (3) known / available Implant Contraceptive Methods

	Implanon NXT	**Sino-implant II**	**Jadelle implant**
Manufacturer	Merck	Bayer HealthCare	Shanghai Dahua
Active ingredient and amount	68 Etonogestrel	150 Levonorgestrel	150 Levonorgestrel
Prescribed period of effective use	3 years	4 years	5 years
Number of rods	1	2	2
Estimated insertion time	1 minute	2 minutes	2 minutes
Estimated removal time	2-3 minutes	5 minutes	5 minutes

Source: Jacobstein and Stanley 2013

2.2.2 Implant contraceptive method's mechanism of action

Implant contraceptive method (ICM) offer extreme contraceptive protection for three to five years depending on the manufacturers' prescribed period and they are effective immediately after 14 days of insertion. According to Adeagbo et al. (2017) these methods provide highly effective

pregnancy protection of less than one pregnancy per 100 women. According to Bracken and Graham (2014) needles inflicted SAW experience during insertion of the device. After the device is inserted under the skin of the upper inner arm of the women the medication, progestin, is released through the capsule walls into the bloodstream in a continuous low dose (Eliason et al., 2013).

Teunissen, Grimm and Roumen (2014) stated that progestin released into the bloodstream is transported to the reproductive system of the women. The released medication prevents pregnancy, making it difficult for the sperm cells to swim towards the ovum, through producing scanty thick cervical mucus. Teunissen et al. (2014) further added that even the ovulation process is disturbed by suppressing the oestrus and the medication causes the thinning of endometrium thus interfering with the implantation process.

Jacobstein and Stanley (2013) investigated the effectiveness and practices regarding the correct use of devices among SAW during their study and found that ICM are 120 times more effective than the injectable, 180 times more effective than the oral pills, and 360 times more effective than the condom. There are no activities or actions to be done before sexual intercourse as in a case where a condom should be worn before or remembering the time for taking treatment in a case of SACM (Park, Rodriguez, Hulett, Darney & Thiel de Bocanegra, 2012). There are no medical examinations to be performed prior insertion of the device and waiting time is very short 07-14 days (Adeagbo et al., 2017).

2.3 Historical background of Implant contraceptive method

The first scientific publication of ICM-releasing progestogen appeared in 1969. In 1983 another type of ICM, the Finnish National Drug Regulatory Authority (Stewart & Bateson, 2016) approved Norplant. In July 2006, ICM was officially approved by the Food and Drug Administration (FDA) in the United States of America (US) and is currently available in over 30 countries including Sub-Saharan Africa (Darney et al., 2009). Since 2006, Stewart and Bateson (2016) indicated that different types of implant contraceptives have been developed. The lifespan of these contraceptives vary, depending on their manufacturers, but the mode of insertion is sub-dermal on the upper inner arm.

The types of ICM include Norplant, Implanon, Jadelle and Sino-implant; these types of ICM are available all over the world (Jacobstein & Stanley, 2013). The Johns Hopkins Bloomberg School of Public Health (2007) clarified that Norplant manufacturers intended to produce this product until 2008. Freeman and Shulman (2010) argued that in 2002 Norplant was voluntarily withdrawn from

the market in the US for non-medical reasons by manufacturers. Then, six years after Norplant was removed from the US as reported by Newberry (2007) for non-medical reasons, the Food and Drug Administration (FDA) approved another type of ICM, Implanon in July 2006. According to the National Contraception Clinical Guidelines in South Africa, Norplant ICM is not used as it is no longer on the market in South Africa (Mhlanga et al., 2012).

Fischer (2008) indicated that Implanon was developed in the 1980s and was scientifically tested widely in 17 different countries. Darney et al. (2009) concurred that ICM is currently available in over 30 countries including Sub-Saharan Africa. The single-rod Etonogestrel-containing implant (Implanon NXT, MSD (Pty) Ltd.) was released in South Africa in February 2014 (Adeagbo et al., 2017). Implanon NXT has been made available internationally since 1998 and in use in over 40 countries worldwide. Adeagbo et al. (2017) indicated that Implanon NXT is also marketed internationally as Nexplanon and is effective for a period of three years. It is considered as a highly effective method of contraception, with an effectiveness rate of about 99.9% and it is not user dependent (Mrwebi, Goon, Owolabi, Adeniyi, Seekoe & Ajayi, 2018).

2.4 South African National Contraception Clinical Guideline on subdermal implants (Implant contraceptive method)

According to the South African National contraception clinical guidelines, Implant contraceptive method (ICM) is a small plastic rod, the size of a matchstick, administered under the upper arm (subdermal); it releases small amounts of progestogen into the blood stream for a period of three years. This implantable contraceptive does not contain estrogen, therefore, it is more appropriate for most women, including; breastfeeding SAW and SAW that do not want to use estrogen. ICM are a very effective contraception method, they have very low failure rates and high continuation rates. Irrespective of their high cost, they have proven to be cost-effective when compared with other SACM over the course of one year.

Trained health providers, doctors or professional nurses are recommended to insert and remove the device. Health providers, cautioned to stay alert of new developments of national contraception clinical guideline policy, for the medical eligibility criteria for progestogen-only ICM. According to national contraception clinical guideline (Health, 2012), the contraceptive methods are excellently discussed, considering the key characteristics of efficacy, age limitations, parity

limitations, mode of action, common side effects, non-contraceptive benefits, effects on STIs and HIV/AIDS risks, drug interactions, duration of use and return to fertility.

Other information detailed about contraceptives includes the procedure essential for initiation and screening medical eligibility (including HIV/AIDS-related issues, attentions and drug interaction), scheduling of initiation, methods-specific counselling, follow-up: schedule content, managing common side effects, availability of such treatment: the availability of contraceptive methods in South Africa and key recommendations for the future. The key characteristics of ICM are described in general below, supporting those explained for subdermal implant in the national clinical guidelines for contraception:

2.4.1 Effectiveness

ICM has been proven internationally as an extremely effective contraceptive in preventing mistimed pregnancy. It is 99, 9% effective for a period of three years as long as the one meets the suitability criteria.

2.4.2 Age limits

No age boundary has been set

2.4.3 Parity restrictions

No restrictions with parity

2.4.4 Common side effects

The most common one is bleeding tendencies, including lighter bleeding, irregular bleeding, infrequent bleeding and amenorrhea. Other side effects are weight gain, headaches, nausea, dizziness, breast tenderness, mood changes, insomnia and abdominal pain caused by enlarged ovarian follicles.

2.4.5 Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) / Sexually Transmitted Infections (STI)

This method does not protect a person against HIV and other sexually transmitted infections. The consistent and correct use of condoms is the most efficient means of protecting against HIV and other sexually transmitted infections.

2.4.6 Duration of use

Implant contraceptive method can be used throughout the reproductive years.

2.4.7 Return to fertility

This type of LARC does not affect SAW's fertility. It has guaranteed immediate return to fertility after removal, meaning there is no waiting period to conceive once the device is removed.

2.4.8 Follow-up

Routine follow-up is not necessary, only when challenges pertaining to the device inserted are encountered that necessitates a discussion with the health provider, or when there are major issues that requires change of contraceptive methods.

2.4.9 Advice given to sexual active women on Implant contraceptive method that need immediate attention at a health facility:

- Sudden change of inserted ICM shape
- Pain on the site where the device is implanted
- Changes of the skin colour or burning sensation with redness appearance of the skin
- If one has fallen pregnant
- Development of a new condition contraindicated to continue with ICM

2.5 Sexual active women's knowledge about Implant contraceptive method

Knowledge is the ability of a person‘s mind to store learned information that one is able to apply practically, displaying the existing skills that one possesses (Bracken & Graham, 2014). In this

study, SAW's knowledge about ICM refers to information they learned before, during and after the period they used the contraceptives. Although LARC such as the available ICM, US adolescents are more likely to use less effective methods, such as SACM and barrier method (condoms) (Russo et al., 2013).

Russo et al. (2013) further indicated that 54% of SAW, who had an abortion in the US, generally were using SACM or condoms. This may be a report that health providers are not doing appropriate counseling to SAW at risk of unintended pregnancy that they are candidates for the LARC. Nevertheless, Dansereau, Schaefer, Hernández, Nelson, Palmisano, Ríos-Zertuche, Woldeab, Zúñiga, Iriarte, Mokdad and Bcheraoui (2017) found that SAW's knowledge about contraceptive methods (especially female-controlled methods) like ICM is higher in the US, Mexico, as health talks in facilities are mostly given to women while males are at work.

According to the study conducted by Eliason et al. (2013) in Ghana, the two most widely known contraceptive methods were the male condoms and injectable. In Ethiopia SAW, interviewed displayed knowledge of at least one method of contraception and 82% of women were able to identify at least one of the LARC methods (Tekelab, Sufa & Wirtu, 2015). Dansereau et al. (2017) in their study revealed that SAW have knowledge about availability of modern contraceptives at facilities but the use of such available methods is hindered by gender roles and other religious objection. Ramathuba et al. (2012) found that 60% of adolescent mothers who were interviewed during their study in Limpopo Province displayed knowledge of some contraceptives but very few used injectable, condoms and the OC.

Gebremariam and Addissie (2014) pointed out that worldwide the use of modern contraceptives has increased over the last period of ten years. Furthermore, Gebremariam and Addissie (2014) revealed that 25% of SAW who are supposed to be using contraceptives for child spacing were found to be totally not utilizing them during the time of their study in the Sub-Saharan Africa. Lack of information and misunderstanding attached to these contraceptives are the main reasons for not using them for child spacing.

Mekonnen et al. (2014) concurred that even in Ethiopia; SAW's knowledge on types of contraceptive methods is high though contraceptive prevalence rate is lower than expected. However, in Mexico SAW believe that the use of such contraceptives may lead one to ill health and infertility in the future. Thus, SAW using contraceptives were associated with being unfaithful to their sexual partners. According to Dansereau et al. (2017), adolescent women were denied family planning services at health facilities and they received such reproductive health information

at home and schools. Ramathuba, Khoza and Netshikweta (2012) further added that even though SAW had information about available contraceptives, their male sexual partners dislike the use of contraceptive methods in such a manner that they are afraid to utilize them.

This is because male partners had opposite information about these contraceptives, for example, they said it interfered with the feeling of sexual relationship. For SAW to have knowledge about availability, utilization of contraceptive methods they must be informed by health providers at health care facilities. Failure of health providers in giving information tend to waste patients' time trying to find out on their own the methods that best suit them (Jacobstein & Stanley, 2013). According to a research study by Keesara et al. (2015), the responsibility of health providers is to educate SAW in making a decision on the type of contraceptive method suitable for their personal state of affairs.

Jacobstein and Stanley (2013) debated that there are no frequent visits for follow-ups; review period is at three or five years. No medical examination to be performed prior insertion of the device and waiting time is very short, i.e. 07-14 days. The removal of ICM means immediate return to fertility, unlike with injectable where it may take six to nine months depending on an individual. ICM do not interfere, delay a persons' fertility. ICM are harmless and appropriate for most women within child bearing ages, including adolescents, HIV positive, breast feeding mothers, non-breastfeeding mothers, women who had an abortion and those who had never fallen pregnant (Jacobstein & Stanley, 2013).

ICMs do not impede with sexual intercourse and their use does not need cooperation from the other sexual partner (Eliason et al., 2013). In support to this statement, Ramathuba et al. (2012) clarified that condoms need sexual partners' cooperation for proper and effective use. In Kenya, SAW indicated insufficient information about ICM; health providers do not have time to explain the different contraceptive methods available. Therefore, the method one request is given without any further explanation of its side effects, advantages or disadvantages and no information about availability of different types of contraceptives (Keesara, Juma & Harper, 2015). Contrary to the above statement, Casey and Wallis (2011) debated that professional nurses should benchmark for communication skills, to effectively communicate with their clients. Accessible, acceptable and accurate information that may assist SAW to accomplish their health-related needs; professional nurses should always communicate family planning clearly and always.

Kipps (2014) further added that the foundation of accurate history taking is good communication between the professional nurses and SAW. It is important to communicate with a woman because the method that appears 'ideal' in the mind of the professional nurses may not be acceptable to

the SAW. The South African National Contraception Clinical Guidelines concurred that most SAW have some degree of knowledge but limited knowledge about contraceptives leads to underutilization of those methods (Mhlanga et al., 2012). Dissimilar to the study in Nigeria and Ethiopia that revealed that those who are highly educated literally displayed a greater understanding of modern contraceptives including ICMs, but that did not predict future use of such contraceptives (Mon 2009; Gebremariam & Addissie, 2014).

2.5.1 Perceptions of sexually active women about Implant contraceptive method

The use of modern contraceptive methods remains low in Sub-Saharan Africa thereby increasing the likelihood of unwanted pregnancy and disturbing life programmes of most SAW in the world. These incidences are mostly linked with SAW's behaviours of failure to use LARC methods that have lower risks of a woman falling pregnant. The contributory factors for SAW to have unintended pregnancies may be due to personal beliefs, myths and insufficient insight about available LARC contraceptives at the nearby PHC facilities (Eliason et al., 2013). In a study in the US, New Mexico, Carr and Espey (2013) identified that the use of LARC, the IUD and ICM, is more common in other developed countries than in the US where the rate is increasing, although it rests at 7.7%. In Pakistan SAW have no insight about modern contraceptive methods because they do not use them; they still believe in not utilizing modern contraceptive methods at all. Some SAW in Pakistan utilize traditional methods; tie a cloth, put it in the vagina, as it is believed to impede movement of sperms and prevent conception (Nishtar et al., 2013).

In Pakistan SAW clarified their fear of needles and pain during insertion and removal of the device as the other reason for not using ICM. In a study, on the conversation about contraceptive services in Ghana, Nsubuga, Sekandi, Sempeera and Makumbi (2016), found that students remarked that it is not easy to exchange sexual matters with partners and believed that contraceptives were for females only. Some of the participants had the feeling that contraceptives were not for poor people or that it is wrong to use contraceptives (Nsubuga et al., 2016).

2.5.2 Perceived benefits of Implant contraceptive method

According to Higgins, Kramer and Ryder (2016) people are more likely to follow instructions from health providers if they know that the family planning method they chose will prevent unwanted pregnancy as required. ICM are very suitable and an effective method of family planning that can

be used in birth control to prevent unwanted pregnancies by SAW. According to Nsubuga et al. (2016) SAW cited common benefits for using effective contraceptives such as child spacing and prevention of unwanted pregnancies among the most. Improvements in obedience and continuation rates are anticipated to further increase the contraceptive benefits and cost-savings connected with contraceptive use as indicated by Mavranezouli (2009).

Darney et al., (2009) in their study, gave an overview of clinical trials submitted, reviewed, and approved by the FDA in 2006 on the efficacy and safety of the Etonogestrel (ENG) ICM. ICM is a highly effective contraceptive method based on evidence. They further indicated that no pregnancy occurred in 942 SAW included in the clinical trials during their study in the US (Darney et al., 2009). Furthermore, Mavranezouli (2009) indicated that roughly 210 million pregnancies happening each year, 38% are predictable to be mistimed and 22% end in abortion, globally.

Implant contraceptive method do not impede with sexual intercourse, and its removal means immediate return to fertility. They do not interfere, delay or have negative impact on fertility. ICMs are harmless and appropriate for nearly all SAW within childbearing ages, including adolescents, HIV positive, breast-feeding mothers, non-breastfeeding mothers, those who had an abortion and those who had never fallen pregnant before (Jacobstein & Stanley, 2013). Di Carlo et al. (2014) added that ICM improve the quality of SAW's lives as it promotes their well-being and does not cause reduction or loss of libido as is reported with other contraceptive methods.

2.5.3 Perceived barriers to use Implant contraceptive method

Perceived barriers are possible issues or factors that may prevent SAW from engaging in a healthy preventive behaviour, which is utilization of highly effective contraceptive methods like ICM (Jones et al., 2015). Mekonnen, Enquselassie, Tesfaye, Semahegn (2014) reported that at least 35% of SAW's deaths every year due to unplanned pregnancies, its complications and unsafe abortions would be prevented if the available effective contraceptive methods are used. Burdette, Haynes, Hill and Bartkowski (2014) clarify that one reason for unreliable use or non-use of contraceptives is that some young SAW have faith in perceived infertility.

According to the study conducted in the UK, principles of contraceptive care: choice, acceptability and access (Belfield 2009) outlined that individuals or couples' contraceptive needs, choices, use or non-use and their expectations, depend on several factors, including: knowledge, information, socio-economic status, lifestyle need, age, religion, ethnicity, perceptions (their own and others),

anxiety and embarrassment. There are multiple factors that influence SAW's access to resources for RHS worldwide. According to Mehata, Paudel, Dariang, Aryal, Lal, Khanal and Thomas (2017) certain social factors that affect the use of health care services together with RHS in Nepal were selected, and they include mothers' education, individual status and society, wealth, rural-urban residence, and environmental regions.

Mgobhozi (2017) added that environmental restrictions might also act as barriers to obtaining or using contraceptive method of choice. The sexual partner's participation is significant in the decision-making process and when a health provider is consulted, he or she may exert another pressure that may elicit contraceptive failure, use or non-use. Moreover, in the US, the primary reason for not utilizing ICM was reported as fear of pain inflicted by needles during insertion of the device and it had negative influence on those who have never used the device (Bracken & Graham, 2014).

Kumar and Brown (2016) indicated that the documented barriers in the US include; financial constraints, unclear or confusing legal frameworks around confidentiality for minors, providers' attitudes toward and misconceptions about LARC, and limited patient awareness of LARC. In addition, the study in Sweden shows that many SAW still believe in using traditional methods to prevent pregnancy, such as calendar method and coitus interruptus or no method all (Engstrand & Kallner, 2018). Eisenberg, McNicholas and Peipert (2013) observed that infrequent use of ICM by adolescents in the US is due to high up-front cost of contraception, and particularly LARC.

Therefore, in the US where contraceptives are not issued free, cost is seen as a major barrier to adolescents' ability to utilize LARC and other factors include; parental involvement, and recent pregnancy (Eisenberg et al., 2013). The provision of family planning methods has been confirmed to be cost-effective internationally as well the contraceptive benefits; the huge cost-savings from unintended pregnancies prevented and balance the costs for provision of contraceptive methods (Mavranezouli, 2014). Eisenberg et al. (2013) found that another barrier to contraceptive use is the differing attitudes about RHS and family sizes, as well as differing levels of knowledge on how to access safe contraceptive methods.

In the Sub-Saharan region, Cleland, Ndugwa and Zulu (2011) added that personal attitude and fear of becoming sterile are contributory factors of SAW to objecting the use of modern contraceptives. Tekelab et al. (2015) outlined that in Ethiopia the main reasons for not using LARC

in the future were rumors they heard about LARC and fear of side effects associated with these methods. Mansour (2010) added that the rumors that is circulating about Nexplanon is the myth that it will 'glow in the dark' under ultraviolet light. Mgobhozi (2017) found that SAW in rural areas lack sufficient knowledge and awareness about existing health care services at PHC facilities, including modern LARC such as ICM.

Samal and Dehury (2015) debated that there is a marked increase in usage of modern contraceptives but in contrary very low uptake of LARC, including ICM was observed in India. Findings further illustrated that in India, men who were involved in that study, who had no desire for more children were opting for LARC like ICM to prevent unplanned pregnancies and reduce frequent movement of their sexual partners to visit health facilities (Stephenson et al., 2011).

In addition, ICM provide 99% pregnancy protection (Adeagbo et al., 2017). According to Stephenson et al. (2011), during their study in Zambia found that men are also regarded as barriers, which prevent SAW from utilizing contraceptive methods of choice. Stephenson et al. (2011) alluded that power differences that exist between sexual partners causes another barrier to contraceptive use by SAW throughout their life span. That is the reason that leads to contraceptive failure because even though SAW make choices about the types of contraceptive method to use, they do not make those decisions alone, sexual partners are also involved. Because of their risk-taking behaviours and reluctance in seeking medical assistance, adolescents fall pregnant with unique consequences, including poverty, rapid repeat pregnancy and reduced educational achievement (Carr & Espey, 2012).

Communication skills and decision-making practices are important variables in choosing the preferred and trusted method of contraceptives. The underprivileged communication between SAW and their sexual partners affected most women as they fail to communicate about their sexual feelings and contraceptive methods of their choice (Stephenson et al., 2011). Meskele and Mekonnen (2014) pointed out that communication challenges between sexual partners is a central factor when examining contraceptive use for the purposes of preventing unwanted pregnancy.

This communication must be encouraged by professional nurses so that involvement of sexual partners may help reduce the occurrence of unwanted pregnancy and unintended births around the world. Ramathuba et al. (2012) stated that in Limpopo Province, cultural beliefs also play an important part in preventing SAW from advancing more information about RHS, as in most Black communities, parents or guardians do not discuss reproductive health issues with their children.

Asekun-Olarinmoye, Adebimpe, Bamidele, Odu, Asekun-Olarinmoye and Ojofeitimi (2013) during their study in Nigeria, indicated that the most commonly stated reasons for not using contraceptives were the desire for more children, fear of side effects and complications that may arise, ignorance of contraceptive methods, and perception of low risk of getting pregnant. Additionally, other barriers mentioned were because they are not subjected to regular sexual intercourse and some reported the negative support they get from their sexual partners.

Adelekan, Omoregie and Edoni (2014) found that in Nigeria and elsewhere in Sub-Saharan Africa major obstacles to the implementation of modern contraceptive behaviours include myths and misinformation or rumours and unconfirmed information passed on within social networks. Some reasons for lack of such contraceptive use include fear of complications, lack of understanding of methods, and fear of opposition from their sexual partners. Hence, the other issue is that of ignoring or excluding men from participating in many contraceptive programmes even though they are known decision makers in their families.

This is the reason that RHS programmes are viewed as part of women's affairs (Adelekan et al., 2014). Based on evidence, understanding the present knowledge and skills of health providers together with barriers preventing SAW from utilizing this type of contraceptive can bring improved achievement to use ICM (Bracken & Graham, 2014). SAW's attitudes towards pregnancy prevention, health providers' attitudes, and experience with contraceptive methods, socioeconomic status and sexual partners' characteristics are some factors that affect use of ICM (Anguzu et al., 2014). Yu (2013) states that SAW are reluctant to use contraceptives because of the importance they placed on physical appearance and self-image, as they believed that some methods result in weight gain. According to Jones et al., (2015) this is termed physical perceived barrier as weight gain changes the physical appearance and characteristics of an individual. The changing bleeding pattern is also a perceived barrier that may affect the psychological well-being of SAW leading them not to use LARC that causes such nuisance (Yu 2013).

According to Motivational Interviewing Framework, actions that prevent participation in changing behaviours depends on individuals' understanding of both advantages and disadvantages of utilizing the service offered by the health providers. Change in behaviour may be negative or positive preventing individual actions to participate in health-related issues by reducing commitment to take informed decision and actions (Markland et al., 2005). In addition, for SAW to utilize modern contraceptives they need to be ready, willing and have abilities to take actions

and follow given instructions required when using contraceptives (Cleland et al., 2011). Dhont, Ndayisaba, Peltier, Nzabonimpax, Temmerman and Wijgert (2009) argued that irrespective of the cost-effectiveness of ICM in Rwanda, infrequent use of the device was reported, due to shortage of well-trained staff and stock unavailability at certain facilities. Di Carlo et al. (2014) added that shortage of trained staff members in facilities is one of the barriers that may lead to underutilization of the method by SAW. They further alluded that there are strategies to do away with identified barriers that include teaching health providers on the use of patient-centered approach counselling.

In the Vhembe District, most common reasons for underutilization of ICM by SAW is inadequate support by sexual partners and relatives. SAW's relatives perceived ICM as a foreign body that is not good for one to live with on a daily basis. Sexual partners perceive ICM as a troublemaker by causing unexpected bleeding patterns, which disturbs their sexual relations (Conversation with OMN, 2017).

2.6 The factors that influence the utilization and non-utilization of Implant contraceptive method by sexually active women

2.6.1 Current utilization of Implant contraceptive method

The use of effective contraceptive methods has an imperative role in reducing unintended pregnancy by providing access to effective contraception. Moreover, in the US, Eisenberg et al. (2013) found that contraceptive use is cost saving to the health care system in general and has been likely to save an estimated amount of $19 billion US dollar in direct medical costs every year. Mavranezouli (2009) described that the global use of contraception is 61% by SAW 15–49 years, the percentage show a discrepancy across the regions, (14.5%) perceived in West Africa and (79%) found in Northern Europe.

The difference between high levels of unintended pregnancy and high levels of contraceptive use globally are due to several factors, which include:

- Lack of contraceptive protection due to unawareness of or poor access to modern contraceptive methods.
- Sexual partner's use of forms of contraception that provide insufficient protection against pregnancy.

- Inconsistent or incorrect use of contraception.
- Contraceptive method failure (Mavranezouli, 2009).

Hoke, Mackenzie, Vance, Boyer, Canoutas, Bratt, Mbulo and Waceke (2015) in their study in Kenya found that low family planning uptake is reported, even though contraceptive use is increasing in Sub-Saharan Africa. SAW may receive reminder cues for action in the form of messages in their family planning booklets, written the dates of when to return to clinic for follow-up (Hoke et al., 2015). Messages may be indicated on big pamphlets at facilities, small handbooks and through media if possible.

Further indications were made that availability of contraceptive messages may facilitate and publicize existence of LARC. Such messages should be displayed in local languages that people can understand for them to take informed decision (Hoke et al., 2015). However, Dhont et al. (2009) clarified that there is very low uptake of LARC in Rwanda; they are not often used even though they are cost-effective. The study in India revealed that among Muslim SAW in Kamataka there was no child spacing in most families due to poor birth spacing practices, even though SAW had sound knowledge about family planning methods (Samal & Dehury, 2015).

McCarty (2008) reported that LARC have been recommended as first-line contraceptives for adolescents, also conveyed that in the US there are many LARC options available for use by SAW; these include both short and long reversible contraceptives. It was stated that the past or current LARC use, might lead one to believe that the alternative hypothesis is true. That should be noted and understood because; the existing literature about LARC corroborates these findings (McCarty, 2008). Samal and Dehury (2015) argued that insufficient knowledge by sexual partners (husbands) in Jharkhand poses a challenge of partner opposition in using contraceptives. In Indonesia and Thailand studies revealed that, more than 80% of SAW were using ICM as method of family planning after given information about the effectiveness of the contraceptives (Samal & Dehury, 2015). Ramathuba et al. (2012) further alluded that health providers' attitudes towards SAW contribute to the non-use of contraceptives, since adolescents are denied access by being mocked.

2.6.2 Availability of Implant contraceptive method

Contraception availability and provision has advanced extremely over the last 50 years and this is an advantage to individuals, couples and families to decide when to have children (Belfield,

2009). According to Birhane, Hagos and Fantahun (2015) availability of ICM means that the facilities that render family planning services have enough stock at hand that is obtainable or is there and ready for use by the SAW (users). Fischer (2008) indicated that ICM was developed in the 1980s and was scientifically tested widely in 17 different countries. Darney et al. (2009) concurred that ICM is currently available in over 30 countries of the world including Sub-Saharan Africa.

Rose and Lawton (2012) in their discussion of the previous study in US, reported that the current statistics suggest that over 1 million unintentional pregnancies end in abortion each year, which are persistent issues around the world. They further debated that this represents a main public health problem, in the presence of effective contraception like ICM; if effectively utilized may improve this ongoing public health challenge (Rose & Lawton, 2012). According to a study by Mohammed-Durosinlorun, Abubakar, Adze, Bature, Mohammed, Taingson and Ojabo (2016), awareness campaigns should be raised on the availability and safety of wider varieties of contraception for SAW in Northern Nigeria.

In the UK ICM is available and effectively used by SAW as indicated by Cea Soriano et al. (2014). That is like what is happening in Australia where the service is provided at a lower cost making it affordable for use by all SAW from different social classes (Weisberg et al., 2014). Eliason et al. (2013) reported that uptake of modern contraceptive methods including ICM remains low in Sub-Saharan Africa. This is linked with a high occurrence of unintended pregnancies, repeated unsafe abortion cases, unplanned deliveries and maternal mortalities. According to Adal (2017) if challenges of availability, accessibility, and acceptability of ICM can be overcome, this method can improve family planning programmes in meaningful ways globally. The reason for very low uptake of ICM in Rwanda was said to be SAW's insufficient knowledge regarding the availability of the device, its use, side effects and advantages (Dhont, et al., 2009). Shabiby, Joseph, Francis, Rose, Minnie, James and John (2015) also clarified that ICM in Kenya is readily available in facilities but the uptake is very low and stands at 1.3% of the population (SAW).

Alemayehu, Belachew and Tilahun (2012) reported that the prevalence of LARC in Tigray region in Ethiopia was very low which accounts for 0.1% for ICM and no users for other LARC such as intra-uterine contraceptive device and female sterilization. It was found that almost all modern contraceptive users in Ethiopia were dependent on SACM (Alemayehu et al., 2012). Birhane et al. (2015) added that during their study in Ethiopia ICM was readily available and its use by SAW aged 15-49 years is low and rests at 3.4% even though it is proven a safe and effective contraceptive method.

In a study conducted in Africa, (Stephenson et al., 2011) argued that irrespective of the information given to SAW about the effectiveness and availability of LARC, the use of ICM remains very low. Shabiby et al. (2015) further pointed out the negativity identified during their study was that very little information about ICM was given to SAW by professional nurses before and during postnatal period in the wards. In contrast, SAW's ability to take actions over their birth control is a significant right in their lifetime as indicated by Teunissen, Grimm and Roumen (2014).

In Limpopo Province, the availability of contraceptive and (TOP) services did not empower school learners to use them, because of social, cultural, financial and service barriers. Most sexually active learners were not knowledgeable about available contraceptives including emergency contraceptives. According to Cates, Stanback and Maggwa (2014) this is an individual level measure of the potential demand for contraception by SAW who currently do not wish to conceive, but are not using a family planning method.

The demographic variations in the past few decades have headed to the biggest populations of youths in the world today, with unique requirements and main concerns that are not met by a focus on family planning (Cates et al., 2014). A conclusion was drawn that contraceptive method mix has been improving over time in many countries, the range of contraceptive choices is not perfect; current contraceptive availability still has far to go (Cates et al., 2014). In 2009, even in the same region, different countries often offer different methods in Asia; female sterilization is dominant in India; whereas in Bangladesh, pills predominate. In much of Sub-Saharan Africa, injectable, pills and condoms are the main choices available. This is because LARC are used inconsistently or discontinuation rates are high (Cates et al., 2014).

2.6.3 Accessibility of Implant contraceptive method

Accessibility of ICM at facilities is the easily reachable service by users who are knowledgeable about the availability and can request such a service (Birhane et al., 2015). Hence fewer trained health providers on provision of ICM render the method to be inaccessible to SAW, which is termed perceived barrier according to (Jones et al., 2015). However, in Australia ICM has been accessible since 2001 even though it was not provided free but the charges were lower to accommodate all SAW from different economic classes (Weisberg et al., 2014). Similarly, studies

have revealed inequalities to access and use RHS as one of the maternal health services by background and culture, rural-urban residence, and economic status (Mehata et al., 2017).

Meirik et al. (2003) clarified that to ensure accessibility of ICM at facilities, well trained and dedicated service providers must be allocated in facilities rendering this type of service. In this study, perceived benefits are beliefs about the effectiveness of ICM to prevent unintended pregnancy and its accessibility for use by SAW. Moreover, professional nurses who render family planning services should always investigate about SAW contraceptive history, for clarity, guidance and giving information about available family planning services (Coombe, Harris & Loxton, 2017). Meirik et al. (2003) added that facilities not rendering the service should know and effectively refer SAW to appropriate sites to access the required service.

Irrespective of the availability of ICM at PHC facilities, Kimani et al. (2015) asserted that SAW visiting the hospitals in Zambia and Kenya during their study had no information about ICM. They further reported that professional nurses at PHC facilities are not giving enough information to SAW about the types of contraceptives available that led to inaccessibility of available services to users. Inaccessibility of the services brought an issue of unmet family planning demand to prevent unintended pregnancy by SAW (Kimani et al., 2015). Even in Uganda after the two major surveys conducted among university students, findings indicated that students did not have access to sexual and RHS, hence high levels of unplanned pregnancies (Nsubuga et al., 2016).

According to Meskele and Mekonnen (2014), access prevents wider use of LARC in Sub-Saharan Africa; its use was very low during the time of their study and has not kept the pace with SACM. (Jones et al., 2015) referred to some as perceived barriers, as they are possible issues or factors that may prevent SAW from engaging in a healthy preventive behaviour, which is utilizing the available health services. Teunissen et al. (2014) added that knowledgeable professional nurses must be delegated to render the service and give emphasis on information related to contraceptive methods, its cost effectiveness, side effects and management. This will enable SAW to make informed decisions to choose ICM as method of contraceptive with full understanding on management of side effects when they come across them. Currently there is no documented information found about the knowledge of professional nurses on use or non-use of ICM in the Vhembe District of Limpopo Province.

2.6.4 Acceptability of Implant contraceptive method

Acceptability of ICM describes the willingness of the SAW (users) of the device irrespective of the side effects and ability to manage them effectively, so to continue utilizing the service. According to Cea Soriano et al. (2014) in the UK, the uptake of ICM displayed the increased tolerance from 2004 to 2010. Short, Dallay, Omokanye, Stauch and Inki (2014) in their study in Europe, reported that SAW who switched from short acting to long-acting contraceptives, such ICM displayed understanding and acceptability of the device in birth control.

Introduction of new contraceptive methods may experience delays from users (SAW), not having evidence based information about the new method. The cross-sectional retrospective study on users' perspectives on ICM in Malaysia, certain Multicultural Asian countries (Mastor et al., 2011) reveal that most of the population choose ICM for its effectiveness as LARC and requires no compliance. Samal and Dehury (2015) in their study in India found that acceptability rate of ICM ranged from 0.5% to 3.4% respectively. Birhane et al. (2015) commented that the removal of ICM in Ethiopia within the first year of insertion is a sign of unacceptability of the device and indication that very little or no information was given prior insertion of the device.

Samal and Dehury (2015) further pointed out that several studies revealed that ICM side effects, which create problems in terms of acceptance as more than 91% of SAW in India, do not wish to utilize any contraceptive method that causes bleeding problems and amenorrhea. Irregular bleeding is reported as a nuisance, which interferes with their sexual activities. Another study in Thailand stated that SAW who experience amenorrhea due to contraceptive use are treated as unhealthy and affected women's appearance in public (Samal & Dehury, 2015). Even in Vhembe District SAW who came for removal of ICM at first year of insertion indicated that irregular bleeding patterns interfere with their sexual activities and that displayed the behaviour of not accepting the method (conversation with OMN). According to Biggs et al. (2014), the health providers' behaviours of holding beliefs about LARC from sites offering family planning services limit the provision of RHS and a clear sign of unacceptability of such methods. This contraceptive practice promotes non-use of contraceptive and results in unmet family planning needs of SAW. Belfield (2009) indicated that research shows that SAW and their sexual partners know about contraception, but do not always use it, may use it poorly or inconsistently which has a serious consequence of failure to accept the methods of contraceptives.

2.7 Culture and contraceptive use

Culture is not inherited, but is a way of doing things in the different societies where people belong, depending on how the society in which one grew up behaved. Van Staden and Du Toit (2009) defined culture as the knowledge, belief art, morals, laws, attitudes, material objects, customs, other skills and habits acquired by any member of society. The influence of culture in different societies and level of education received by both sexual partners play an indispensable part in the truthful and consistent use of modern contraceptives. Netshikweta (2007) indicated that cultural recognition, behaviours and practices could negatively or positively affect the reproductive health practices in the communities.

A survey study in the Western Cape Province, South Africa conducted on factors associated with contraceptives used in a rural area, established that cultural values, beliefs and communication with sexual partners negatively affects use of contraceptives. Majority of South African societies are male-dominated, particularly in rural areas; hence SAW feel pressure to prove their fertility to their sexual partners and family members (Peel & Morojele, 2013). A study on knowledge, perceptions and attitudes regarding contraception among secondary school learners in the Limpopo Province, found that cultural taboos were major obstacles to informed discussions about sexual and reproductive health issues, particularly with concerns to young people (Netshikweta, 2007).

In the study, “culture and religious beliefs in relation to reproductive health”, Arousell and Carlbom (2016) debated that it is unmistakable that SAW with migrant upbringing face greater inequalities in health issues, RHSs due to cultural values, language barriers and socioeconomic factors. Ramathuba et al. (2012) debated that cultural beliefs within Black communities disadvantaged youth from learning more on reproductive health issues and sexuality because culturally, parents could not discuss sex related information with their children. Netshisaulu, Netshikweta and Tshitangano (2015), in their study in Vhembe District of Limpopo Province found that youths’ parents assumed that sexual education to children would mean giving them permission to take part in sexual activities. They were also fearful that teenagers would develop dishonesty and disrespect for elders.

Netshikweta (2007) found that negative preventive laws made sex a forbidden subject for young generations in many African cultures. For example, in certain African cultures, SAW seek their sexual partner’s approval for using modern contraceptives. According to the traditional customs among the Vha-Venda, Shangaan and Pedi, sexual intercourse was allegedly adjourned until

after marriage (Netshikweta, 2007). Ramathuba et al. (2012) concurred that existing sexual information was talked about when they (youth) were faced with trauma of mistimed pregnancies and birth complications and due to erroneous decisions and misconceptions about contraceptives. Netshikweta (2007) further added that young men and women are educated about sexual behaviour before and after marriage at puberty rites during initiation ceremonies.

Mistimed pregnancies in the presence of highly cost-effective contraceptives is still a great concern around the world; hence, in the US half of all pregnancies continue to be of life-threatening reputation to public health practitioners and policy makers. These mistimed pregnancies are mostly observed among youth aged 18-29 years, leading public health practitioners to have a limited understanding of the factors that undermine regular contraceptive use (Burdette et al., 2014). Arousell and Carlbom (2016) proposed that it would be helpful if health providers and policy makers in health facilities would be responsive of the complications and cultural practices, as well as recognizing the influential factors in utilization of contraceptives.

2.8 Professional nurses' views about factors contributing to the utilization of Implant contraceptive method by sexually active women

2.8.1 Contraception Education: Health providers' initiated education

Irrespective of different workshops on behavioural change of health providers' attitudes in working areas, generally nurses still display negative attitudes towards rendering RHS at health facilities (Ramathuba et al., 2012). Moreover, health providers are faced with challenges of rendering multiple health services daily at PHC facilities; Tuberculosis (TB), HIV/AIDS counselling and testing, Anti-Retroviral programme, reproductive health services, antenatal care, maternal and newborn, child health, chronic diseases, geriatric services, Emergency Medical Services (EMS) and outreach programmes (Coovadia, Jewkes, Barron, Sanders & McIntyre, 2009). These challenges are geared by persistence of shortage of staff that is long-standing in the Health Department, which continues to be an unresolved issue (Mgobhozi, 2017).

Health providers should undergo sufficient short-course training in relation to counselling and insertion of ICM. It was proposed that each individual provider should receive full support and mentoring after workshop training at his/her respective facility, by programme supervisors and managers to facilitate the continuity of the newly introduced programme. In the US, Donnellya,

Fostera and Thompson debated that research has publicized that SAW seeking contraceptive methods receive old-fashioned or inaccurate information about method characteristics, eligibility, risks and benefits; unfair counseling based on cultural/ethnic background, socioeconomic status or gynecologic history.

Mgobhozi (2017) debated that health providers play an essential role in the provision of high quality birth control methods that include LARC, SACM and barriers. These prevent diseases and promote the wellbeing of individuals, families and community at large. However, through provision of the majority of family planning services and other multiple health services patients are able to access quality essential health care services, effective, quality and affordable essential medicines and vaccines for all, SDG 3, 8. Kumar and Brown (2016) found that more time is needed for health providers to cascade the information about LARC to enhance effective use by SAW and their sexual partners. There is more extensive counseling required, the insertion procedure and post insertion information including answering questions that may arise during all the sessions (Kumar & Brown, 2016).

The results of health providers' lack of training and limited comfort with contraceptive methods, may also promote underutilization of LARC (Kumar & Brown, 2016). Negative attitudes may promote the results of unintended pregnancy among SAW and adolescents in the presence of different kinds of contraceptive methods at health facilities (Akers, Gold, Borrero, Santucci & Schwarz, 2010). However, in the US Biggs, Arons, Turner and Brindis (2013) reported that little is known regarding health providers' attitudes about or the extent to which the recommendation to offer same-day insertions for LARC.

A cross-sectional mail-in survey of medical directors, representing family provider sites on factors influencing the provision of LARC in California; Biggs et al. (2013) found that there have been significant progress in expanding access and understanding about LARC. Many health providers in health facilities offering family planning services held beliefs that prevent provision of RHSs and were unfamiliar with the ICM.

Nys (2012) reveals that SAW have the right to complain about health care services (HCS) they received. It is the duty of health providers to listen to SAW's complaints as they form part of HCS improvement in both public and private sectors. Failure to handle clients' complaints by health providers is ineffective communication, which is a perceived barrier that subject SAW to underutilize available contraceptive methods. These may lead those who can afford it to visit

general practitioners for the service and those who cannot afford it will not use contraceptive methods; hence unintended pregnancy as the end results (Bracken & Graham, 2014).

Adeagbo et al. (2017) clarified that the South African Government has a commitment to achieve the Sustainable Development Goals (SDG) around reproductive health to meet family planning needs for SAW. SAW are the main reporters of treatment side effects after utilizing different products from the health care facilities. Health providers should give them time to explain so that they can intervene appropriately. According to Batho Pele principles, it is anticipated that health providers should deal with reproductive health services in a way that will facilitate health care delivery (Khoza & Du Toit, 2011). SAW visit PHC facilities with the hope that health providers will provide the services as promised in the South African policy documents (Khoza & Du Toit, 2011). Rusibamayila, Phillips, Kalollela, Jackson and Baynes (2016) claim that families support to women and men in maintaining their birth control is the key of family planning programs; encouraging SAW to avoid unintended pregnancies, and assisting couples to regulate child spacing in their families is an important issue. In Vhembe District, not all health providers trained on the provision of ICM, which may be a contributory factor to develop negative attitudes in assisting SAW coming for the service.

Rowen (2017) indicated that health providers lacked information sharing amongst each other as they tended to treat work related information as personal issues rather than cooperate assets. Health providers must share information they got from training with others, to improve the health care services, through teachable moments and facility meetings. According to Graves (2017) employee training and development is a continuous life process and imperative as it brings about a change in human behaviour; also, improving the management process and provision of health care services to the public members. Rowlands and Searle (2014) debated that knowledge and information are the keys in the provision of HCS in the health care facilities; public or private settings.

According to South African National Contraception Clinical Guidelines, SAW attending contraceptive services does not get adequate information and counselling on the expected side effects of different types of contraceptive methods in health facilities (Mhlanga, 2012). These clearly point to the need for well-informed health providers with the ability to present and reinforce significant information. According to Hillard (2012), discussions about contraceptive counseling must focus on providing information that allow SAW to make informed decisions and utilize contraceptives accordingly. Greater responsibilities are necessary for better counselling sessions in facilities rendering RHS and explanation of health-related side effects in relation to specific

method of choice (Mhlanga, 2012). Meskele and Mekonnen (2014) alluded that for SAW to change their attitudes, myths and misconceptions on LARC, continuous educative interventions need to be done aggressively. Hence, Hillard (2013) concurred that a strong positive introduction to LARC is to address myths or misinformation and anything heard about these methods before inserting the device.

Meskele and Mekonnen (2014) further indicated that repeated information `giving is the key to improving the understanding and utilization of HCS, as described by Hillard (2013) as non-directive counseling. Hillard (2013) added that proper concerns for counseling SAW who want to use contraceptive methods should not be coercive. Health providers must be aware that adolescent development may undermine effective use of contraception, due to effects, which include boyfriend's intimidation/pressure or coercion, peer pressure, low self-esteem and the lack of long-term goals. Therefore, health providers must remain aware of power differences between the counselor and her patient, advise adolescent to use LARC that does not need self-administration or frequent visits for follow-up (Hillard, 2013).

Nishtar et al. (2013) debated that in Pakistan health providers exhibited biasness when rendering family planning services as they advise some of the youth members not to use available contraceptives. Moreover, health providers did not have sufficient information regarding the use of such contraceptives, they agreed with the myths and misconceptions known to the society. Nishtar et al. (2013) added that inadequate information and negative attitudes on the use of contraceptives by health providers poses high-risk on SAW, more especially adolescents, as numbers of unintended pregnancies will increase.

The setback of an unmet need for family planning services in Pakistan increases the risk of large numbers of adolescents falling pregnant at the age of 19 years. Training on the use of ICM in Pakistan should involve professional nurses including doctors respectively; for them to be able to educate all SAW and community members regarding availability of contraceptives and when to utilize them for prevention of unintended pregnancies (Nishtar et al., 2013). A study done in the US by Dehlendorf et al. (2011) found that irrespective of trainings conducted on the new family planning methods to be utilized at facilities, professional nurses are unhurried to take on new practices related to contraceptive care. Moreover, Kumar and Brown (2016) pointed out that inserting LARC method required increased time from health providers compared to other

contraceptive methods like SACM, as there is counseling that is more extensive and insertion procedure.

Furthermore, the study by Dehlendorf et al. (2011) clarified that among those trained health providers in facilities very few are found to be cascading the information about contraceptive methods. Such practices lead patients to have little information regarding the availability of methods, effectiveness and side effects including management. In addition, multiple surveys have found that substantial health providers lack relevant knowledge about contraceptive methods in general (Dehlendorf et al., 2011). Professional nurses must ensure that rendering the reproductive health services should be patient-centered approach. Patients' should be empowered by being knowledgeable about ICM; advantages and disadvantages (Hillard, 2013). Motivational interviewing principle number one emphasizes that human behaviour can possibly change when their personal feelings are accepted and valued by professional nurses providing the reproductive health services SAW need (Markland et al., 2005). The name of ICM in use and the reasons thereof must be indicated to enhance patients' understanding (Jacobstein & Stanley, 2013). Information giving by professional nurses must include attentive counseling session, management of common side effects, follow-up dates, ICM, HIV/AIDS other STI infections.

2.8.2 Attentive counseling session

The constraints of modern contraceptives' use were said to be due to insufficient knowledge among the users according to the study among 1188 married SAW aged 15-40 years in Nigeria (Mon 2009). During health education for SAW requesting family planning methods, health providers must start with the most highly effective type of method and give the reason thereof. Stephenson et al. (2011) debated that after exposure to more information on ICM, in Zambia men and their sexual partners, who had no desire for more children took an informed decision, opted for LARC and the uptake of ICM was very high.

Stephenson et al. (2011) reported that most of the previous studies confirmed that there was high rate of ICM removal after initial insertion of the device, unlike during the time of their study where people complied when given relevant information. That was demonstrated by few discontinuations of the ICM and low pregnancy report during follow-up periods. Furthermore, the study in Nigeria revealed that those who are highly educated and literally displayed a greater understanding of modern contraceptives but that did not predict future use of such contraceptives (Burdette et al.,

2014). Therefore, giving information to SAW who selected ICM must be genuine and adequate to promote service utilization and patient satisfaction (Jacobstein & Stanley, 2013).

Yacobson (2012) argued that professional nurses during counseling must identify the correct information and appropriate practice to be communicated to the SAW prior insertion of the device. Burdette et al. (2014) also indicated that there is a positive relationship between knowledge and use of modern contraceptives in the developing countries. WHO/RHR (2011) added that characteristics of the device must be discussed with the patient to drive out any falsehood and mistaken beliefs about ICM. The use of ICM among SAW is limited by myths surrounding the contraceptive methods. Myths such as ICM moving around the body and causing unknown diseases. According to WHO/RHR (2011), it is important to give information to the SAW in the language that is best understood. This is to enhance understanding and improve informed decision making about the use of ICM. Health providers' contraceptive counseling and marketing must adopt a user-centered framework that supports SAW in identifying their main concerns in family planning to avoid early discontinuing or removal of the device (WHO/RHR, 2011).

2.8.3 Management of common side effects

Information about common side effects and anticipatory assistance on how to manage them must be clearly outlined. Hence, the change in menstrual patterns such as irregular, uncommon or no menstruation at all may be expected even though it is harmless, when utilizing ICM (Jacobstein & Stanley, 2013). However, the bleeding irregularity is the main concern and chief reason for SAW to discontinue this type of contraceptives. Kimani et al. (2015) clarified that the change in bleeding patterns of SAW is physical perceived barrier for not utilizing the family planning method.

They further added that perceived barriers for not using ICM include little information received by SAW about the availability and effectiveness of ICM, fear of side effects, lack of partner support, medical related challenges, unavailability of methods, desire to have more children, age, and preference for SACM (Kimani et al., 2015; Alemayehu et al., 2015). Many longitudinal studies have been done and reported that blood loss during the irregular, uncommon and prolonged bleeding do not affect the hemoglobin of ICM users (Meirik et al., 2003; Jacobstein & Stanley, 2013). Samal and Dehury (2015) stated that studies have revealed that in many countries around the world SAW do not prefer to utilize contraceptive methods that cause irregular bleeding and amenorrhea as side effects. These side effects interfere with their sexual activities and disturb

their relationship with partners. Then management of bleeding side effects is the chief action for providers to help SAW to utilize ICM successfully (Jacobstein & Stanley, 2013). According to Russo, Miller and Gold (2013) it was revealed that health providers have a fundamental role to play, provision of LARC to SAW, as well as backing them in managing emanating side effects for continuity of contraceptive use.

Professional nurses must be equipped with the knowledge and skills to manage ICM side effects and give support to SAW. Meirik et al. (2003) indicated that ethyl estradiol (either alone or as OC) will stop the disturbing bleeding problems and help SAW to cope in the early months of ICM use until bleeding patterns improve spontaneously as time continues. Freeman and Shulman (2010) added that other side effects are mood changes (nervousness and depression), weight gain, headache, dizziness, breast pain, acne, 'less frequent' hair loss and hirsutism.

2.8.4 Follow-up dates

After every service received by an individual, a follow-up date is necessary for feedback and further counseling. Patients need to be informed and understand that they need to come back any time for clarity of myths, advice, reassurance, treatment of side effects and access timely removal services if needed (Jacobstein & Stanley, 2013).

2.9 Psychosocial determinants of contraceptive use

2.9.1 Sexually active women experiences of contraceptives and existing literature on Implant contraceptive method

According to Bracken and Graham (2014) experience is the way of doing things in life using previous information that a person has gained within a long period. The experience acquired may be positive or negative regarding what one came across during the learning period when utilizing the contraceptive method or hearing the information about that type of contraceptive. Mrwebi et al. (2018) argued that it is known that SAW differ in their use of contraceptive methods, preferences and experiences with family planning methods, the need for access to varieties of contraceptive options becomes applicable.

Bracken and Graham (2014) reported that in the US very few SAW were found to use ICM but the calculated percentage of LARC was very low; at 18% including inject-tables, intrauterine devices together with ICM. Furthermore, several studies indicated that most SAW discontinue ICM use due to changes in bleeding patterns as a major problem. Mrwebi (2018) alluded that there is no observed evidence available on the reasons given for discontinuation of ICM by users in the Eastern Cape Province, South Africa. Furthermore, several factors were reported to relate to this early removal of ICM. These factors included; side effects of ICM, poor positioning of the device, lack of support by spouse, poor RHS rendered and insufficient counselling by health providers (Mrwebi et al., 2018). Other ICM side effects that were commonly raised were weight gain, mood swings, headache, nausea, reduced libido and hair loss (Stephenson et al., 2011). Siyoum, Mulaw, Abuhay and Kebebe (2016) during their study in Ethiopia on Implanon Discontinuation Rate found that most discontinuation reported are common in African countries. These effects are giving an alarm whether SAW in South Africa are experiencing related challenges with use of ICM contraception or not. Moreover, if not we can conclude that the discontinuation may be due to personal lifestyles, environment alterations, ethnicity and other unknown factors which are indirectly associated with the use of ICM.

Siyoum et al. (2016) reported that even though ICM is believed to be safe and effective, its discontinuation rate even in the developed countries ranges up to 50% before three years of insertion. Bearing in mind the health and economic consequences of the early removal of the ICM, it is vital to determine the reasons for discontinuation of ICM by its users (SAW) (Mrwebi et al., 2018). In 2014, the National Department of Health in South Africa introduced Implanon NXT (ICM) to the long list of available contraceptive methods to meet the family planning need through provision of a useful alternative option for those having unpleasant experiences with the present list of contraceptive methods (Adeagbo, 2017). During a study done in the Eastern Cape Province, South Africa researchers observed that ten (5.3%) SAW removed ICM because they fell pregnant. Considering that ICM is a very effective family planning method with an efficacy rate of 99.9%, Siyoum et al. (2016), and Mrwebi et al. (2018) pointed out that it is possible that some of them were already pregnant before insertion of ICM.

2.9.2 Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome / Sexually Transmitted Infections and Implant contraceptive method

Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) epidemic appeared in the 1980s and its face has dramatically changed as it was known to be an illness of homosexual men. Presently, the population that is increasingly affected around the world is women who make nearly half of global population who are affected with HIV/AIDS (15.7 million women, 33.4 million total in 2008) (Robinson, Jamshidi & Burke, 2012). Center, Gunn, Asaolu, Gibson and Ehiri (2016) argued that there is no other contraceptive method other than condoms that can prevent HIV/AIDS infection including sexual transmitted infections (STIs). Moreover, it was further indicated that even World Health Organization (WHO) and United State Agency for International Development (USAID) are aware of this matter.

Implant contraceptive method is an effective and reliable contraceptive; hence, it does not prevent human beings from contracting HIV/AIDS and other STIs, consistent and accurate use of condoms must be emphasized. Agboghoroma (2011) argued that condoms are user dependent and entail partner's participation, which may be problematic to negotiate, particularly in power imbalanced relationships. Trussell (2009) added that male and female sterilization, and LARC do not require adherence, it is significant to assist sexual partners to comprehend factors influencing contraceptive failure. Mgobhozi (2017) added that, interventions such as changing gender norms, decreasing violence against SAW, supporting legal rights and increasing employment opportunities need to be implemented to support safe sexual behaviour and decisions by SAW.

Agboghoroma (2011) reported during the study on contraception in the HIV/AIDS background, where they clarified the prevailing dilemma to control the spread of HIV/AIDS infection. This issue is observed as a major challenge to reproductive health in the communities and worldwide (Agboghoroma, 2011). Unintended pregnancies, repeated abortions and HIV/AIDS/STIs continue being alarming as a reproductive health concern for SAW and their partners, in the presence of cost-effective contraceptive methods in both public and private health facilities. Moreover, Trussel (2009) found that SAW rank contraceptive effectiveness as the key factor when choosing a family planning method. Muthivhi, Sodi and Maunganidze (2011) pointed out that several research studies indicated challenges that young people are vulnerable to the HIV/AIDS/STI's pandemic around the world despite the availability and continuous supply of condoms. Agboghoroma (2011) concurred that more than 50% of the total HIV-positive population (33.3 million) in 2009 composed of SAW within the reproductive age group. SAW has the responsibility for birth control in their

respective families to enhance the good health of children as mothers, hence contraceptive use for child spacing is a human right.

Agboghoroma (2011) reported that HIV-positive SAW should be advised to use dual protection methods which necessitates the use of condoms in the presence of another contraceptive method to lessen the risk of super-infection (may decrease the viral load), prevent introduction of STIs and drug interaction. Robinson et al. (2012) added that the provision of effective contraceptives to SAW living with HIV address their health needs and is fundamental to improving their overall health. In Asia sex workers who were using OC only, were found to be infected with HIV/AIDS and other STIs (Center et al., 2016). Furthermore, even SAW utilizing ICM to prevent unplanned pregnancies must be encouraged to practice the dual methods of contraceptives to prevent the risks of HIV/AIDS and STI s (Center et al., 2016).

Kimani et al. (2015) argued that contraceptive methods and PMTCT information is available at health facilities but that does not translate to initiation of contraceptives by users (SAW). According to Motivational Interviewing Framework relevant information about the availability of services in health facilities, need to be communicated to the users during health education sessions and counselling by health providers. Moreover, users (SAW) will then be motivated from within and take an informed decision; where their actions will display accountability to utilize the services when they know they will benefit from such services (Manthey, 2011). Robinson et al. (2012) found that ICM is one of the safe and effective hormonal contraceptives to avoid mistimed pregnancy. That is the reason majority of SAW population chose ICM because of its effectiveness for the long period, not user dependent and need no compliance, as reported by Mastor, Khaing and Omar (2011) during their study on users' perspectives on ICM in Malaysia, in some Multicultural Asian countries. Agboghoroma (2011) reported that its' effect on HIV progression is not fully known yet; hence, its efficacy may be affected in certain situations, through drug interaction. In addition, hormonal contraceptives dose in SAW on some antiretroviral drugs may need to be increased or provision of alternative contraception, condoms use (Agboghoroma, 2011).

Cooper, Mantell, Moodley and Mall (2015) reported that the National Department of Health has cautioned the use of ICM in women living with HIV/AIDS for contraception due to the probable interactions with a significant antiretroviral drug, Efavirenz. Mrwebi et al. (2018) concurred that considerable information is written about high failure rate reported among persons taking enzyme

inducing drugs like anti-retroviral drug (Efavirenz), anti-epileptic drugs (Sodium valproate, Phenytoin and Carbamazepine) and anti-tuberculosis drug (Rifampicin).

Bastien, Kajula and Muhwezi (2011) clarified that educating young people on sexual, reproductive health issues and HIV/AIDS is an international concern. Multiple interventions aiming to improve healthy sexual behaviour among youth normally aim to postponement of sexual introduction, reduce the number of sexual partners and increase condom use. Ramathuba (2012) indicated that cultural beliefs within Black communities poses challenges; young people cannot gain information about sexuality because culturally parents cannot deliberate sexual information with their own children. Netshikweta (2007) pointed out that culture and traditional laws can jeopardize reproductive health as information about sex was made a forbidden subject for young generations in many African cultures.

Bastien et al. (2011) found that communication programmes and the literature on guardian, parent or caregiver about sexuality and HIV/AIDS in most countries around the world including Sub-Saharan Africa is partial. Communication about sexuality may be effective for young people before sexual debut to strengthen protective factors, but may facilitate behaviour change in those already sexually active. Rodríguez, Say and Temmerman (2014) on their study named family planning versus contraception: what's in a name? Argued that they are not interested in the name "family planning" but need a focus that all SAW use a contraceptive method to prevent mistimed pregnancy for good health. Furthermore, it was pointed out that comprehensive sex education, both within and outside of schools, must be started early and clearly, to empower adolescents in a healthy transition period.

Cahill, Sonneveldt, Stover, Weinberger, Williamson, Wei, Brown and Alkema (2017) defined "unmet need for family planning" as the percentage of SAW who want to avoid mistimed pregnancy or delay childbearing but currently not using any method of contraception to prevent pregnancy. Rodríguez et al. (2014) pointed out that a girl aged 16 years is not necessarily concerned about planning family as she does not have a family, but she does not want to get pregnant. To ensure equitable and high quality sexual and RHC for such population, contraceptive programmes and policies must focus on support for SAW's choices in fulfilling their individual reproductive/contraception goals. According Bastien et al. (2011) multi-site study that evaluated communication with parents about condom use and abstinence in addition to HIV/AIDS, found communication on all topics was mostly low and that silence was greatest on the topic of condoms.

2.10 Strategies

Adelekan et al. (2014) indicated that health providers advocated that the involvement of men as a strategy for addressing the dismal performance of family planning programmes could assist. Adeagbo et al. (2017) highlighted that health providers are important figures to the success or failure of contraceptive programmes. They are more influential and play a crucial role in shaping how SAW perceive different contraceptive methods in the health facilities. Moreover, Agboghoroma (2011) indicated that it is evidenced that majority of SAW recurrently visit health facilities for health services while their sexual partners are at work. Sexual partners should be encouraged to visit health facilities for counseling for both HIV/AIDS/STIs and contraceptive use to enhance support in decision-making and adherence to treatment use.

Eisenberg et al. (2013) in the US found that one of the important strategies to reduce the rates of unintended pregnancies among adolescents is to increase the use of LARC methods including ICM. In England, the proposed government strategies appear to have a positive impact on the expected outcomes of promoting use of LARC to reducing unintended pregnancies among adolescent girls (Connolly, Pietri, Yu & Humphreys, 2014). According to Connolly et al. (2014) in England, the government focused on educating SAW on how to access contraception through conducting national campaigns.

These campaigns aimed to increase LARC usage and was significantly associated with decreased teenage pregnancy rates and abortion rates in female teenagers aged less than 20 years. Moreover, unintended pregnancy and high abortion rates among SAW 20 years and older remained a problem (Connolly et al., 2014). In the US the best practices of providing effective contraceptives like ICM at no-cost demonstrated to substantially lessen the unintended birth rate and repeated abortions as the risk of falling pregnant is very low. In many developing countries, wide inequalities in use of health services intensify disparities in the health outcomes of people. Improving equitable access to and utilization of health services is fundamental to achieving faster and more sustainable improvements in health status (Mehata et al., 2017).

In Mali, health providers in health facilities served as positive agents of change; increasing access and quality use for contraceptive methods, mainly for the ICM when it was introduced (Adeagbo et al., 2017). The other strategy to promote the use of LARC is involvement of sexual partners, as alluded by Tekelab et al. (2015) as majority of their participants in Ethiopia (81.5%) decided

on fertility issue jointly with their sexual partners. They further debate that more than 50% of patients who discussed their family planning issues with health providers opted to use ICM as their first-choice method for birth control.

According to Hillard (2013), health providers should strengthen counseling sessions, informed consent, pain management techniques, and guidance to prevent and manage possible side effects to promote successful use of LARC option. Health providers during counseling should give information like, “you may have breakthrough bleeding in the first 1 to 3 months after ICM is inserted”, rather than “you may have breakthrough bleeding”. This can then help SAW to think clearly about how she will respond to breakthrough bleeding in case it happens to her (Hillard, 2013). Hoke et al. (2015) claimed that the promising approach for increasing use is to integrate ICM with those existing services in other disciplines like environmental initiatives. However, such activities may promote voluntary use of ICM by SAW. A relatively marked low usage of LARC by SAW; need to increase variety of training efforts aiming at improving health providers’ capacity to deliver high quality family planning services in health facilities at large.

Biggs et al. (2014) clarified that more attention need to be paid to poorer women, those with less education, and those living in remote areas. Obviously, policy and interventions also need to address development factors beyond the health system such as female education, women’s economic empowerment, and the development of remote areas. Overall, it is essential that policies be structured and implemented to address context specific barriers if equality across population groups and regions is desired. Qualitative research on barriers to access, availability, and utilization of health care and other social services among poor, rural, and underserved populations is needed.

2.11 Summary

In this chapter, a review of the literature revealed introduction and use of ICM worldwide, indicating how it influenced the modern reproductive health services, its use and challenges encountered by individuals (SAW), families and community members. However, ICM is an effective contraceptive method, where existing literature shows the great impact it has made in different populations. In addition, there is a lack of adequate research in evaluating the extent to which contraceptive services are rendered in deep rural areas like Vhembe District, as well as issues that are encountered by SAW. This research study aimed at developing a model to

promote the use of ICM, explored SAW's perceptions on the use of ICM, including the views of professional nurses about factors contributing to the utilization of ICM by SAW. Chapter 3 will pay attention to the research methodology used for the present study, including the advantages and limitations, as well as the tools.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In the previous chapter, the literature significant to this study was discussed. Research methodology is the plan that dictates the different techniques, methods and procedures the researcher selects to follow during data collection (Leedy & Ormrod, 2010). This chapter focused on the explanation of the research design, research setting, methods of data collection and data analysis. Qualitative design was used to collect data from the most senior professional nurses trained on insertion of ICM and SAW aged 18 to 45 years. This chapter will include discussion of measures to ensure trustworthiness, ethical considerations' model development and validation of the model developed. To ensure measures of trustworthiness for data collected, four principles, namely, credibility, dependability, conformability and transferability will be considered and described.

3.2 Research Design

Babbie and Mouton (2009) described research design as a set of guidelines and instructions followed in addressing research problems throughout the study, from identification of the problems up to the results. There are two well-known research designs in the research world, which are qualitative design and quantitative design. The third design was offered by Creswell (2013), called the mixed method or multiple methods. Teddlie and Tashakkori (2010) well-defined mixed methods research design as a methodology for conducting research that involves collecting, analyzing and integrating both quantitative and qualitative research designs. Mixed method enables the researcher to have a better understanding of the phenomenon, in case one method cannot provide the required background. The quantitative design is used to explain

existing phenomena using a systematic and well-summarized method for analysis (Creswell, 2013).

In the current study, the qualitative research design was followed. It involves considering attributes or qualities of human actions, behaviours and attitudes that cannot be changed to numbers (Leedy & Ormrod, 2010). The purpose of qualitative research according to Creswell et al. (2009) is to gather full information in a real setting, in order to develop understanding of people's behaviours, actions and attitudes in their natural settings. Data was collected at PHC facilities where multiple PHC services are offered to SAW including RHS, which covers ICM insertion and removal. Qualitative research design involves data collecting techniques linked with analysis and presentation of descriptive information. The researcher followed a qualitative strategy as it includes collecting and analyzing data from professional nurses and SAW aged 18 to 45 years. Qualitative research embraces information that can be stored on audio or video and other written formats.

3.3. Research setting

The current study was carried out at PHC facilities in the Vhembe District, Limpopo Province, located in the Northeastern part of South Africa and shares borders with Botswana, Mozambique and Zimbabwe. Limpopo Province consisted of five Districts, Capricorn, Mopani, Sekhukhune, Vhembe and Waterberg. Vhembe District consisted of four Sub-Districts, Thulamela, Makhado, Collins Chabane and Musina. Thulamela Sub-District consisted of 40 clinics and three CHC**,** Makhado Sub-District consisted of 31 clinics and two (02) CHC, Collins Chabane Sub-District consisted of 30 clinics and three CHC, Musina Sub-District consisted of ten clinics only**.** The study was conducted in selected PHC facilities in the Thulamela (the biggest) and Musina (the smallest) Sub-Districts**.** All these PHC facilities in Vhembe District render multiple PHC services, including insertion of ICM device as one of the RHS, seven days per week. The researcher, informed by the very low numbers of ICM inserted and early removal at all PHC facilities in Vhembe District (OMN and Data Capture's meeting). PHC facilities were purposefully selected in Vhembe District of Limpopo Province.

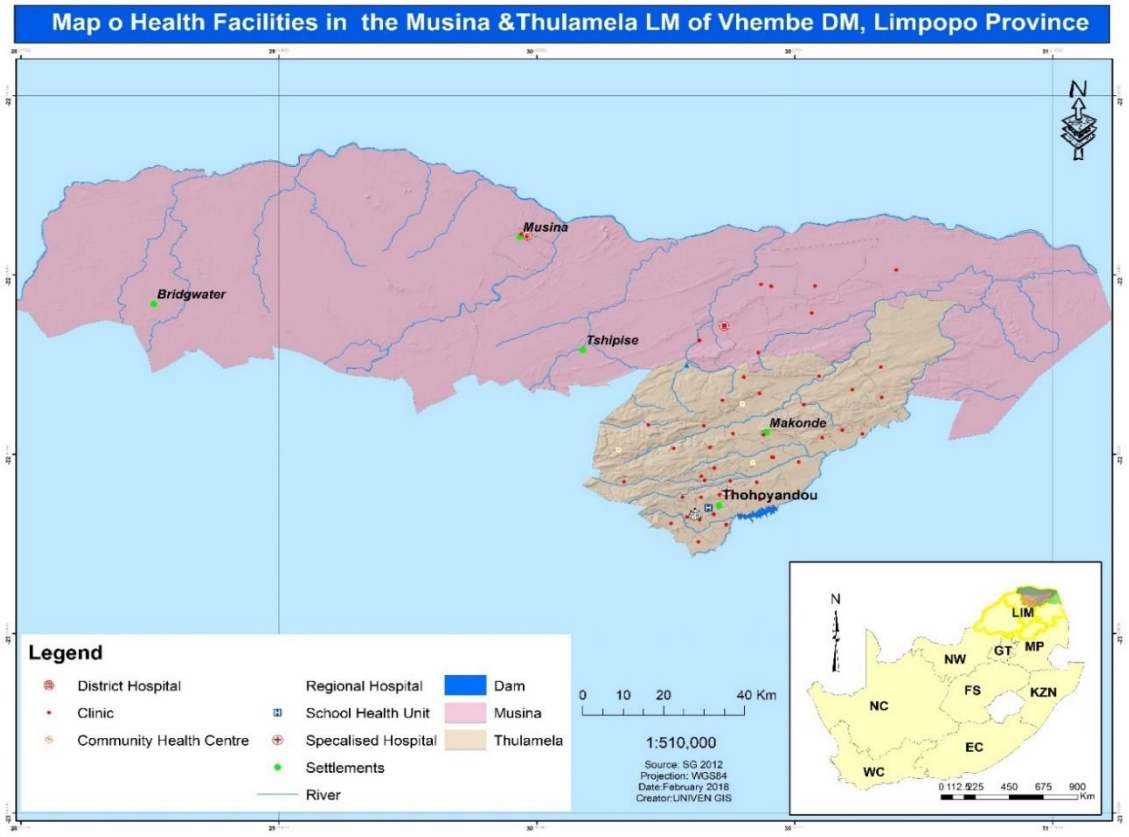

Figure 3.1: Vhembe District, Sub-Districts and clinics (***Source*:** Department of Environmental Affairs)

3.4 Research Methods

Table 3.1: Summary of the research approach used

3.4.1 Phase 1: Qualitative Design

A qualitative explorative, descriptive and contextual research design was used for objectives 1 to 4, which were:

- To explore the perceptions of SAW about the usage of ICM
- To explore the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District
- To determine the available strategies to promote the utilization of ICM
- To explore professional nurses' views about factors contributing to utilization of ICM by SAW

Table 3.1: Summary of research approach

Phase 1					
Objectives	**Research design**	**Population**	**Sampling approach**	**Data collection**	**Data analysis**
-To explore the perceptions of SAW about the usage of ICM	Qualitative	Sexually active women	Non-probability purposive sampling	Focus group discussions	Tech's steps by Creswell et al (2014)
-To identify the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District	Qualitative	Sexually active women	Non-probability purposive sampling	Focus group discussions	Tech's steps by Creswell et al., (2014)
-To explore professional nurses' views about factors contributing to the utilization and non-utilization of ICM by SAW.	Qualitative	Professional nurses	Non-probability purposive sampling	Semi-structured interviews schedule	Tech's steps by Creswell et al., (2014)
-To determine the strategies to promote the utilization of ICM	Qualitative	Professional nurses	Non-probability purposive sampling	Semi-structured interviews schedule	Tech's steps by Creswell et al., (2014)
Phase 2					
-To conduct a concept analysis of concepts identified	Eight steps by Chinn and Kramer (1999) Walker and Avant (2014)				
-To develop a model to promote the uptake of ICM by SAW.	The South African National Contraception Guideline 2012 and HBM				
-To validate the developed model for the promotion of ICM use by SAW	Quantitative	OMN Professional nurses	Non-probability purposive sampling	Questionnaires	Excel

According to Barker et al. (2005), qualitative research design uses language as their raw material in order to examine participants' thoughts, feelings, behaviour or linguistic strategies. In this design, the researcher was committed to discovery through use of multiple ways of understanding. At the time of conducting research, little or no knowledge existed about the model to promote the use of ICM at PHC facilities in Vhembe District. A qualitative design has been chosen since it is flexible, adaptable and capable of being learned during data collection.

Qualitative design is defined as approaches or tools of investigation used in research studies.

The researchers, in qualitative design can make their resolutions in planning the study and develop their own approaches as tools to assist or guide (De Vos et al., 2011). This approach, qualitative design method was used in the current study since the researcher was exploring the perceptions of SAW about the usage of ICM and exploring professional nurses' views about factors contributing to the utilization of ICM by SAW. Qualitative design considers attributes or qualities of human actions, behaviours and attitudes that cannot be changed to numbers (Leedy & Ormrod, 2010). The purpose of qualitative research according to Creswell et al. (2009) is to gather full information in a real setting, in order to develop understanding of people's behaviours, actions and attitudes in their natural settings. The researcher is interested in qualitative design since its goal is to understand human behaviour at PHC facilities where professional nurses render RHS to SAW. For that reason, in the current study exploratory, descriptive and contextual research designs were employed.

3.4.1.1 Exploratory design

An exploratory study is conducted to investigate what is happening in the environment and focusing on the "what" questions, to gain a deeper understanding or knowledge about the existing situation and to identify concepts and constructs from a study (De Vos et al., 2011; Brink 2012; Van Der Walt & Van Rensburg, 2013). Exploratory research design is appropriate for this study because little is known about the reasons for poor uptake of ICM at PHC facilities in Vhembe District. In this study, the perceptions of SAW about the usage of ICM were explored; professional nurses' views about factors contributing to the utilization and non-utilization of ICM were explored. An exploratory design pursues to develop original understanding of phenomenon and attempts to test predictions in order to identify causes of occasions and factors that yield those (De Vos et al., 2011). Exploratory design is mostly used when the problem encountered is new to the researcher.

3.4.1.2 Descriptive design

Descriptive design refers to the type of research method, which describes and provides a real picture, giving a detailed account of the situation or phenomenon being investigated (Brink et al., 2012). Described further as a design that aims to lay out complete readable data about a phenomenon through observation, classification and description (Polit, Beck & Hungler, 2009; Brink et al., 2013). The study was conducted at PHC facilities (which is a natural setting) where SAW and professional nurses interact during the process of rendering RHS. The factors which contributed to poor uptake, factors which might contribute to expected uptake and strategies required to promote uptake of ICM as perceived by professional nurses and SAW were described

in the current research study. According to Creswell (2009), Polit and Beck (2009) qualitative research method focuses on participants' perceptions and experiences.

3.4.1.3 Contextual design

A context is a set of conditions within which interactions take place. Attention to a social context means that the researcher noted what surrounds the focus of the study (Neuman, 2011). In this study, the researcher gathered information from participants at selected PHC facilities where ICM is inserted and removed. That enabled the researcher to understand the behaviours, actions and attitudes of participants through interacting with them in their own environment (PHC facilities); where professional nurses insert ICM to SAW, and SAW receive RHS ICM from their health providers (professional nurses).

3.4.2 Population

According to Polit and Beck (2008), population talks about the entire combination of people having some collective characteristics that the researcher is interested to studying.

In this study, the population included two groups:

- **The first group** consisted of all SAW: Aged 18-45 years, who visit the selected PHC facilities for RHS and stay in Vhembe District. SAW may be users or non-users of ICM as method of family planning.

- **The second group** embraced all senior professional nurses, who worked at selected PHC facilities in Vhembe District, Limpopo Province. Professional nurses should be trained and have experience of more than two years on insertion of ICM.

3.4.3 Sampling

Sampling is a process of selecting a small portion or number of participants required to participate, from the total population to represent the whole (Polit & Beck, 2008; Burns & Grove, 2013).

3.4.3.1 Sampling of primary health care facilities

Purposive judgemental sampling method, a non-probability sampling was employed to select

PHC facilities. Purposive judgemental sampling method means that the researcher had chosen participants that provided the relevant information that serve the purpose of the study. PHC facilities were sampled following high numbers of RHS statistics. Out of 50 PHC facilities, only 03 CHC in Thulamela Sub-District and 02 PHC facilities Musina Sub-District, as the Sub-District does not have CHC, were sampled.

3.4.3.2 Sampling of participants

Purposive judgemental sampling method, a non-probability sampling was employed to choose participants for this study. The researcher selected participants who possessed the required qualities to benefit the study. For the current study, 02 categories of participants were chosen; professional nurses and SAW. The researcher used her own judgement to choose participants that best represent the phenomenon under study or who possess the knowledge required for the topic under study.

3.4.3.3 Inclusion Criteria

Inclusion criteria refers to the parameters, which the researcher takes in participants according to the required characteristics that will benefit the study (Neuman, 2011). The researcher interviewed participants presented in **Table** 3.2, which summarizes the inclusion criteria of the chosen participants. SAW who stay in Vhembe District and aged 18-45 years visiting the facility for RHS. SAW were users or non-user of ICM. Professional nurses were most seniors and trained on insertion of ICM, having more than two years' experience on inserting ICM and work in Vhembe District, PHC facilities.

Table 3.2: Inclusion criteria of the chosen participants

Professional Nurses	**SAW**

▪ Who work at PHC facilities in Vhembe District ▪ Most senior professional nurses ▪ Trained to insert ICM ▪ Have more than two years' experience on inserting ICM	▪ SAW aged 18 to 45 years ▪ Staying in Vhembe District ▪ User or non-user of ICM ▪ Visiting PHC facility in Vhembe District for RHS

3.4.3.4 Sample size

Polit and Beck (2008) defined sample size as the subset of a population, chosen by the researcher to participate in a study. Patton (2002) in De Vos et al. (2011) says that there are no rules for sample size in qualitative inquiry. In this study sample size was based on data saturation, not statistically determined. Data saturation was the collection of information in a qualitative study where no new information was coming forth from participants (Brink et al., 2012). Therefore, eight professional nurses and four (FGD) were the sample size at the point of data saturation. When visiting the Vhembe District, the researcher ensured that all groups for data collection were identified. The predicted numbers were as follows; 10 most senior professional nurses, two per each PHC facility, five FGD one per selected PHC facility consisting of 10 to 15 participants.

3.4.3.5 Recruitment of participants

On arrival at each participating facility, the researcher produced a permission letter granted by the Vhembe District to conduct research study. Then, the researcher informed the OMN of the facility about the study and the procedure to recruit participants, SAW and professional nurses for the study. Then OMN called all SAW coming for RHS aged 18-45 years. The researcher then explained the criteria that led one to participate in this research study (Polit & Beck, 2008). For professional nurses the OMN identified professional nurses trained on insertion of ICM and then the researcher explained the criteria for selection.

3.4.4 Data collection

According to Onwuegbuzie, Leech and Collin (2010), qualitative design had four major ways of collecting data: active participation, direct observation, interviews and document analysis. In the current study, one-way method of data collection methods was employed, which included two types of interviews: semi-structured scheduled interviews and focus group discussion interviews. The researcher made an appointment with the OMN of each facility participating in this research study. The researcher then asked for the facility OMN for the utilization of an available spare office for data collection.

The researcher sought permission from the operational managers at the PHC facilities to address the patients visiting for RHS. Those interested to participate, together with the researcher moved to an authorized room for privacy, within the PHC for the discussion to commence. Each participant signed both consent forms and confidential binding forms. The reason for confidentiality binding forms is to discourage SAW from talking about what happened during the FGD sessions. The researcher facilitated all focus group discussions to guide the discussions in the right direction.

Participants' consent was requested to use a voice recorder and taking field notes. Reasons for using a voice recorder and taking field notes was explained to participants. SAW were reassured that their opinions are welcome, as there is no wrong or right answer and instead of their names, numbers will be used to ensure anonymity. Questions were asked using their mother language as research questions were interpreted by the language expert. After asking each question, the researcher encouraged each SAW to participate by asking each person to give input on the theme discussed at a time. The researcher established a relationship with the participants taking into consideration the information they were giving.

The researcher used the probing skill to gain more clarity on all the points not covered by answers of participants and to cover all the objectives of the study. Henceforth, paraphrasing was used to unveil additional information and guide the discussion and to ensure that the objectives one and two were covered during the interview (De Vos et al., 2011). The researcher facilitated five focus group discussions each consisting of 10-15 participants (Delport & Fouche, 2011; Brink et al., 2012) and data saturation achieved at the fourth FGD. Researcher interviewed 62 SAW and each focus group discussion lasted for 45-60 minutes. The data was collected over a period of four months between July to October 2019.

The discussion was headed by a fundamental conversation in a relaxed manner. The researcher acted as the facilitator for all focus group discussions to guide the discussions in the right direction. Listening and interviewing skills were applied through questioning and attentive listening of information given by participants. The researcher used a voice recorder after obtaining consent from the participants to capture all the information given. The researcher recorded field notes in a two-quire book in the presence of the participants. The field notes contained what transpired at each semi-structured interview and FGD, the words that had an influence, as well as the facial expressions observed from participants during the interviews. These field notes assisted in the classification during transcription to highlight the true meaning of the words that were said in addition to the respective facial expressions. The researcher struggled for a positive closure done through giving feedback to participants at the end of each interview session for them to have a chance to clarify or correct the researcher‘s summary. The researcher ensured that there were no disturbances during the interview. Furthermore, the researcher also practiced questions in advance to ensure they were sound, acceptable and complete.

3.4.4.1 Questions for Focus Group Discussions (for sexually active women)

What are your perceptions about the usage of ICM?

- What are the factors that influence utilization ICM?
- What are the factors that influence non-utilization of ICM?

3.4.4.2 Questions for professional nurses

- What do you think are the factors contributing to utilization of ICM by SAW?
- What are the factors that influence non-utilization of ICM?
- What are the available strategies that can be used to promote the utilization of ICM?

The researcher gave details on the purpose of the study. An appointment with OMN of facilities were secured who then prearranged both participants, SAW and professional nurses. Data was collected through FGD and one-on-one semi-structured interview (De Vos et al., 2011). The expected number of participants per each FGD ranged from 10-15 per session. Participants were chosen for their certain collective characteristics that were interrelated to the research topic. On the days of the interview, the researcher generated an easygoing environment amongst SAW and professional nurses. The researcher cheered participants without pressurizing them, to actively participate to share their views, concerns, experiences and perceptions as needed. A semi-

structured interview guide was employed during FGD and one-on-one interview sessions (Annexures H and I). A warmly encouraging environment for conversation was generated by the researcher and she thanked participants for their willingness for participation. The researcher ensured that ethical measures were clearly described such as participants' rights to withdraw from participating that guaranteed autonomy (Leedy & Ormrod, 2010). Permission to utilize the voice recorder was sought from participants.

The language used to conduct the interview was Tshivenda used daily and best understood by participants. Information gathered was recorded and transcribed verbatim in the local language (Tshivenda) then translated to English by a language expert. The interviews lasted for 45-60 minutes. All recorded information was labelled in alphabetical order and dates the interview was conducted. The researcher made field notes on the observations made during data collection. The field notes helped the researcher to remember and understand the whole process of the interview (Leedy & Ormrod, 2010).

3.4.5 Data Analysis

The data which were collected during individual semi-structured interview schedule and FGD were analyzed using eight steps of Tesch's open-coding qualitative data analysis method as described by Creswell (2014) was outlined in the research methodology chapter. The researcher analysed separately as soon as data collection started and not at the end of data collection. Verbatim transcripts made by the researcher, through listening to the audio recordings before data analysis conducted. Three steps considered when analysing data; through, description, analysis and interpretation. The researcher tried to familiarise herself with the data through reading and re-reading the notes and transcripts. Audio recordings were listened to and transcribed daily after collecting data (Burns & Grove, 2013).

The researcher immersed herself in data and interaction with data occurred. The researcher put brackets for the personal feelings about the phenomena identified and garnered separately. Reduction of data done by selecting, focusing, simplifying and abstracting. Furthermore, independent coder with the purpose of identifying themes did selection of codes and coding. Classification of themes was also done to simplify data retrieval. In addition, reflective remarks were made, where thoughts were recorded in double brackets at the end of the recording.

Explanatory remarks were placed in the right-hand margin and data was displayed where the main ideas of the research were conveyed (Burns & Grove, 2013).

Data collected, also submitted to an independent coder who also used eight steps of Tesch's open coding method of qualitative data analysis as described by Creswell (2014). A consensus meeting was set between the researcher and the independent coder to discuss and agree on final themes and sub-themes based on the ones which emerged when analyzing independently. The researcher identified vital features and described the interrelationships. Themes and patterns identified from the data collected. To obtain the central focus of the data, descriptive analysis was employed (Burns & Grove, 2013). The researcher's own analysis of what was happening and what was done, focusing on effectiveness of findings about clinical practice. Relationships emerged from sets, actions, participants, events. These were used to formulate vigilant meanings.

- **Get a Sense of Whole**

The researcher listened to the audio tapes and transcribed the recorded information onto a book word-for-word. Then researcher read all written information from original material and wrote down ideas coming to her mind.

- **Pick one document**

The researcher picked one short interesting document or the one on top of other documents, reviewed it and asked herself the question, "What was that about?" Trying to make sense out of the information written then wrote the thoughts on the margin.

- **Made list of topics**

Immediately after completing reading all written information from all participants the researcher made a list of similar topics grouping them together. The information prearranged into major, unique and leftover topics.

- **Abbreviate topics as codes**

The researcher-listed topics taken from information gathered, and finally abbreviations for each category and wrote them in alphabetical codes.

- **Describe wording for topics**

The researcher abstracted reduced information by grouping them and drawing lines between categories. Then, reduced the total list of categories by grouping the related topics together.

- **Make final decision**

The researcher decided on the abbreviation for each category, and arranged codes alphabetically.

- **Group information**

Information that belonged to each category or similar were collated in one place.

- **Revisit existing information**

The researcher revised records, took the list, returned to the raw data, and read the information to ensure that no mistakes were made and corrected where necessary (Creswell & Creswell, 2017).

3.4.6 Trustworthiness

Trustworthiness is the method of introducing reliability and validity of qualitative research. Trustworthiness in this study was ensured through Lincoln and Cuba's criteria for judging the quality of qualitative research (Lincoln & Guba, 1985; Babbie & Mouton, 2009) and included credibility, transferability, dependability and conformability.

3.4.6.1 Credibility

The first and significant criterion in establishing trustworthiness in a qualitative research is credibility. It seeks to ensure that a study is measuring what it has set out to measure. Several steps were involved in ensuring credibility in research studies, of which three steps were employed by the researcher in this study; peer debriefing; prolonged engagement and member checks. In this study, credibility was achieved as follows:

- Since the researcher works at one of the PHC facilities in the Thulamela Sub-District as a professional nurse, she is conversant with the clinic structures, some of the professional nurses and SAW visiting PHC facilities for family planning services.
- Prolonged engagement was achieved since the researcher visited PHC facilities for making appointments. The investment of sufficient time was also ensured through building of trust and relationship between the researcher and the participants and spent 60 minutes with participants during data collection.
- The researcher collected data until data saturation was attained, when no new information is coming forth.
- The researcher ensured the honesty of participants by:
    - informing the participants that the participation was voluntary and that they could withdraw at any time
    - involving only SAW visiting PHC facilities in Vhembe District for family planning services and most senior professional nurses (trained on insertion of ICM) who were interested in taking part in the research study

- establishing relationship and explaining to the participants that there are no right or wrong answers
- clarifying the researcher's status to the participants that she is working on her own in undertaking her studies
- probing with the aim of seeking clarity and a more detailed explanation and to exclude any inconsistencies in the answers which would denote falseness

- The researcher had a reflective summary after each interview trying to engage with data collected. This engagement was a signal that data analysis had started already.
- The researcher holds a master's degree and had experience in data collection and analysis in research study.
- Referential adequacy was ensured by using a voice recorder.

3.4.6.2 Confirmability

Confirmability talks about the "objectivity of the data collected" (Polit, Beck & Hungler, 2009). It was achieved by developing an audit trail, which served as recording the whole research process so that an external reviewer can audit the process. This includes detailing the whole process of research starting from the raw data to the final report. The researcher achieved this by including her supervisors in the various processes of research study - from data collection to the final report so that the process can be systematically evaluated. The involvement of the independent coder ensured confirmability. Verbatim quotations from the participants were used in report writing, supported by existing literature to enrich credibility of the study. The researcher ensured confirmability of the research study by:

- Conducting the interview until data saturation was attained.

Audit trail was developed which was a systemic documentation. The documentation covered the field notes, which the researcher wrote during the interviews, the voice recordings during the interviews and word for word transcription done by means of paying attention to the voice recordings. The audit trail permitted the independent coder to draw conclusions about the data that was collected and analysed.

- Data findings were supported by already existing literature in comparison.
- The researcher's ability to involve the independent coder ensured confirmability in the current study because there was a consensus reached about main themes, themes and sub-themes that emerged from the collected data.

- The researcher and the independent coder coded the transcripts individually before coming together to discuss the main themes, themes and sub-themes and reaching consensus.

3.4.6.3 Transferability

Transferability refers to the extent to which the result of a study can be transferred to other settings (Polit et al., 2009). Transferability was achieved by providing a thick description about the entire research study. The researcher provided a thick description of the study for the objective of transparency and easy understanding of the research process for the readers.

3.4.6.4 Dependability

Dependability refers to the ability of data to remain unfailing over time and under different conditions, even when the research is carried out at a different time using the same participants and methods – this is critical in qualitative research. The researcher ensured dependability by employing the inquiry audit technique, which entailed keeping an audit trail of the process of the research, then, allowed for data obtained to be scrutinized by an external reviewer (Polit et al., 2009). The supervisors served as the external reviewer. The supervisors did independent verification of coding randomly.

- A wide-ranging description of the study phenomenon and of the context from which data was collected, given by the researcher for the purpose of ensuring dependability.
- An involvement of the independent coder in the coding of the data collected ensured dependability of the current study.

Table 3.3: Trustworthiness criteria, strategies and application

Criteria	Strategy	Application
Credibility	Reflexivity and bracketing	Bracketing was achieved by identifying and holding back any preconceived beliefs and opinion about the phenomenon understudy. The researcher made a thoughtful summary after each interview to try and engage with data collected. Three steps were employed by the researcher in this study to ensure credibility; peer debriefing; prolonged engagement and member checks.

	Prolonged engagement	During data collection, the researcher ensured that there were adequate time to stay in the field to establish relationship with the participants. The researcher stayed with participants for 60minutes during data collection.
	Member check	The transcribed data were shared with the participants (professional nurses and SAW) to ensure that ideas were not twisted.
Transferability	Stepwise replication	The data and analysis were then checked for compatibility and similarity: discrepancies were resolved through member checking with the participants.
	Sampling	Participants purposefully selected; suitable participants with required knowledge and experience were selected. Non-probability purposive judgemental sampling method employed.
	Dense description	A detailed description of methodology was done and the research setting was sufficiently explained. Transferability was ensured by describing the research setting richly and thoroughly, and description of what transpired during the interviews in detail.
Dependability	Audit trail	Non-verbal communication during interviews was documented to enrich data. Dependability was ensured by using the voice recorder and the transcripts, which were available to the external auditor for verification if necessary.
Confirmability	Inquiry audit	An external reviewer to determine dependability and conformability scrutinized data. Verbatim quotations were supported by comparing them with existing literature. The involvement of the independent coder ensured confirmability.

3.5 Ethical Considerations

This research study involves people as participants; serious consideration was exercised to ensure that their human rights were protected (Leedy & Ormrod, 2010; Polit & Beck, 2008).

3.5.1 Permission to Conduct the Study

Ethical clearance to conduct the study was obtained from

- Research Ethics Committee (Annexure A)The ethical clearance number is SHS/19PDC/03/1503
- Limpopo DoH and Social Development Research Committee (Annexure C)
- Vhembe District Office, Thulamela and Musina Sub-District PHC Managers (Annexure D)

3.5.2 Informed Consent

Informed consent is a document that contains adequate information about research study essential to be known by participants; includes capability of participants to understand the information; and have authority to free choice, empowering them to agree to participate voluntarily or withdraw as desired (Polit & Beck, 2008). A clear explanation (Annexure E and F).

3.5.3 Right to Information

The researcher was grateful to offer participants clear and correct information when obtaining consent for participation. Participants should at least have correct information about the topic of the study, aim of the study and objectives of the study, and how their anonymity was protected. Participants were informed that they are free to stop participating in the study at any given time (Leedy & Ormrod, 2010). The research participants were informed that the information in the voice recorder will be kept confidential, under lock and key; only be shared with officials who are part of the research study and will never be used against participants. To ensure anonymity and confidentiality, alphabets and numbers were used instead of participants' names (Polit & Beck, 2008).

3.5.4 The Principle of Beneficence and Non-Maleficence

There were no physical, psychological, social or economic vulnerabilities that participants were unprotected from, during the interviews of the current study. The researcher ensured that each participant was not exposed to any health risk or any form of victimization from the researcher or co-participants, which could possibly stop them from participating in the study. Support for participants was arranged with facility OMN in case of the event any participant experience unanticipated negative effects during participation in the research. The researcher informed participants that they could feel free to give clarity, ask questions or speak about any complaints that they may have. The participants were informed that the outcomes of the current study will be published and shared internationally for promotion of utilization of ICM device. The benefits from the research study were only to give details with clarity; there were no incentives or direct personal benefits (Polit & Beck, 2008).

3.5.5 The Right to Fair Treatment

Participants have equal rights, based on the principle of justice. Ground rules were set before each focus group discussion began, to allow participants to communicate freely. The use of languages that can intimidate other participants was controlled before the onset of each focus group discussion. Participants in the focus group were also requested to sign a *focus group confidentiality binding form,* to reinforce respect for each other's views (Annexure G). Participants were treated with respect throughout the course of the current study.

3.5.6 The Right to Privacy

In this study, participants were completely knowledgeable and aware that they were participating voluntarily with signed consent. Semi-structured interview and FGD were conducted in safe private rooms in each facility to enhance participants' free participation and respect of their private information. Private information comprises that which concerns personal attitudes beliefs, behaviour, views and recorded information.

3.5.7 The Right to Anonymity

In this study, complete anonymity existed since the researcher could not link participants' identity with their individual responses. These were ensured by not calling patients by names during the qualitative research data gathering. Participants (SAW) were given numbers as codes to totally avoid using their names and promote anonymity and professional nurses were given alphabets. Participants were completely knowledgeable that they were free not to answer a question which they do not feel free to answer and that the information they contributed will only be shared professionally with people who are involved in the study.

3.5.8 The right to confidentiality

Confidentiality can be viewed as continuation of privacy, thus referring to handling of participants' information collected during data collection. Participants were informed that data collected will be kept under lock and key with no unauthorized person having access to it. Information collected wil only be shared with officials who are part of the research study and will never be used against participants.

3.6 Summary

This chapter discussed the research design, research setting, methods of data collection and data analysis. It included the summary of research approach in a table form. A qualitative exploratory, descriptive and contextual research design was employed for objectives 1 to 4 in the current study. The population groups for this study were two, which comprised of SAW and professional nurses, named as first group and second group. Non-probability purposive sampling method was used to sample health facilities, SAW and professional nurses. The inclusion criteria were outlined and reflected on a table form; **Table** 3.2: Data was collected using FGD for SAW and one-on-one semi-structured interview for professional nurses. Questions for both SAW and professional nurses were clearly indicated.

Qualitative data analysis which looks for patterns or qualities was done following Tesch‘s 8 steps of open coding. Trustworthiness, which measures the truth-value of the study, was considered following the four criteria, which are credibility, dependability, confirmability and transferability. Permission to conduct the study was sought by the University of Venda, Limpopo DoH and Social Development Research Committee, Vhembe District office and Thulamela/Musina PHC managers. Ethical consideration was exercised to ensure that (participants) their human rights were protected, following the set of moral principles.

CHAPTER 4

PRESENTATION OF RESULTS AND DISCUSSION

4.1 Introduction

The previous chapter discussed the overview of study, research design and methodology, which guided the study and covered an explanation of study site, population and sampling, research method and design, data collection method used and data analysis. The researcher followed a qualitative strategy as it includes collecting and analyzing data. This chapter presents and discusses the research findings from the individual semi-structured interview schedules conducted with professional nurses and FGD conducted with SAW. The objectives of the study were:

Phase 1

- To explore the perceptions of SAW about the usage of ICM
- To identify the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District
- To explore professional nurses' views about factors contributing to the utilization of ICM by SAW
- To determine the available strategies to promote the utilization of ICM

Phase 2

- To conduct a concept analysis of core-concepts identified
- To develop a model to promote the use of ICM by SAW
- To validate the developed model to promote of ICM use by SAW

4.2 Presentation of the findings

4.2.1 Description of the Sample

4.2.1.1. Selected primary health care facilities

Table 4.1: Selected PHC Facilities

PHC facilities	Number of nurses per facility	Number of participants

	F	F
CHC's	**06**	**42**
THCHC	**02**	**15**
WECHC	**02**	**14**
MCHC	**02**	**13**
Clinics	**04**	**20**
MusCLN	**02**	**10**
MadCLN	**02**	**10**

Key for selected primary health care facilities

Thohoyandou CHC = THCHC

William Eddie CHC = WECHC

Mutale CHC = MCHC

Musina clinic = MusCLN

Madimbo clinic = MadCLN

4.2.1.2 Demographic Profile of sexually active women

Table 4.2: Summarizes the demographic profile of SAW aged 18 to 45 years who stay and receive RHS in Vhembe District at PHC facilities.

Table 4.2: Demographic Profile of SAW

Participants	**Age in years**			**Marital Status**			**Religion**		**Employment Status**		**Level of education**		
Total	18-25	26-35	36-45	Married	Divorced	Single	Christian	Non-Chris	Yes	No	Non-Grade 12	Grade 12	Tertiary education
62	22	16	24	29	13	20	55	07	12	50	30	32	22

The researcher managed to interview a total number of 62 participants since in each FGD they ranged from 10 to 15 depending on their interest to participate. Their ages ranged as follows; 22 SAW were 18 to 25 years old, 16 SAW were 26 to 35 years old and 24 SAW were 36 to 45 years old. Majority of participants (SAW) were divorced (29), unmarried were 13, and 20 were still

single. Majority of those SAW were Christians while only seven were non-Christians. Out of the 62 participants, 12 were permanently employed. 32 participants passed Grade 12 and 30 had no Grade 12, but 22 of them managed to complete their tertiary education and some of them were already employed.

4.2.1.3 Demographic Profile of Professional nurses

Table 4.3: Displays the distribution of professional nurses (n=10) who participated in the current study. All professional nurses completed their general nursing science including Midwifery science.

Table 4.3: Demographic Profile of Professional Nurses

Professional nurses	A	B	C	D	E	F	G	H	I	J
Rank	Prof/n	Prof/n	Prof/n	Prof/n	Prof/n	Prof/n	Prof/n	Prof/n	Prof/n	Prof/n
Years of experience in inserting ICM	05	03	04	04	04	04	05	04	04	04
Qualification	Diploma	Degree	Degree	Diploma	Diploma	Degree	Diploma	Degree	Degree	Diploma
Age	46	28	29	52	50	48	50	30	35	27
Marital Status	Single	Married	Married	Married	Married	Married	Married	Single	Single	Married
Gender	F	F	M	M	F	F	F	F	F	M
Religion	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian

Table 4.3: also indicates years of experience in providing the RHS in particular, insertion of ICM at PHC facilities in the Vhembe District specifically at Thulamela and Musina Sub-Districts. Professional nurses who participated in this study were trained and had experience of more than two years on inserting ICM and were hands-on.

This information was important since the years of experience may also bring the best practice to the health facilities. Professional nurses who had five years' experience in inserting ICM were two (20%), and seven (70%) had four years' experiences inserting the device. In addition, one (10%) professional nurse had three years' experience inserting ICM. It was acknowledged that all professional nurses with a diploma in nursing - five (50%) and a degree in nursing - five (50%) hold the required qualification but have more responsibilities including rendering of multiple PHC

services, administrative roles and supervision of the lower categories in the provision of multiple health services (PHC package) at PHC facilities.

Majority of professional nurses who participated in the study were married and the assumption is that they are matured and may be able to execute their responsibilities effectively and properly. Married people are often thought to be responsible as they display those accountabilities in caring for their respective families, including children. Even their age distribution, majority of them ranged from more than 30 years, which is known to be part of maturity, and matured people often handle their daily duties with a sense of ownership and accountability. I hope that they may be able to convince youths to utilize ICM to prevent unintended pregnancies to pursue their studies effectively.

4.2.1.4 Presentation of themes and sub-themes

During the interview sessions conducted, participants expressed themselves in their own mother tongue and a language expert translated the information to English. From the raw data, 2 main themes, 5 themes and 17 sub-themes emerged (**Table** 4.4)**.**

Table 4.4: Main theme, themes, and sub-themes reflecting the views of sexually active women regarding uptake of Implant contraceptive method

Main theme 1, themes, and sub-themes reflecting the views of professional nurses regarding uptake of Implant contraceptive women by sexually active women		
Main themes	**Themes**	**Sub-themes**
1. LOW (ICM) CONTRACEPTIVE UPTAKE	**1.1 Description of the views that contribute to under-utilization of ICM by SAW**	1.1.1 Existing intolerable side effects reported by SAW resulting in non-utilisation of ICM outlined 1.1.2 Minimal knowledge by SAW, partners and community related to ICM blamed for non-utilisation of ICM 1.1.3 Existing rumours and myths mentioned as contributory factors towards poor uptake of ICM by SAW 1.1.4 Lack of nurse training on ICM insertion, results on negative attitudes by nurses and poor marketing of the method
	1.2 Description of the factors which may	1.2.1 An outline that ICM viewed as a user-friendly method for all SAW 1.2.2 Lack of risks to fall pregnant when using ICM may promote uptake

	contribute to expected uptake of ICM by SAW	
	1.3 Strategies to be used to promote required uptake of ICM by SAW	1.3.1 Consistent information giving about ICM to SAW, partners, family members and community at large 1.3.2 Male partners, families and community involvement suggested to promote support the use ICM 1.3.3 A suggestion that mobile clinics nurses be trained so that ICM service be provided during visits to communities 1.3.4 Dual method encouraged because ICM doesn't prevent transmission of STIs/ HIV/AIDS
Main theme 2, themes, and sub-themes reflecting the views of SAW regarding usage of ICM		
2. INSUFFICIENT KNOWLEDGE	**2.1 Descriptions of the perceptions of SAW on the use of ICM**	2.1.1 Insufficient information about functioning of the device (ICM) (to prevent pregnancy 2.1.2 Shortage of staff at PHC facilities implementing ICM on daily basis 2.1.3 Lack of counselling about RHS including ICM by professional nurses
	2.2 Description of the reasons that influence poor uptake of ICM	2.2.1 Inadequate marketing of ICM as a new method by professional nurses 2.2.2 Availability versus lack of ICM at PHC facilities determine the uptake 2.2.3 Lack of discussions on sexual and reproductive health issues between mothers'/guardians' and adolescents influence uptake of ICM

4.3 DISCUSSION OF FINDINGS

In this qualitative research, the findings are presented in a narrative format. The findings of this study are discussed based on the main themes, themes and the sub-themes that have emerged from raw data based on the; individual semi-structured interviews conducted with professional nurses and FGD conducted with SAW. Verbatim quotations of the participants presented and supported by relevant literature to substantiate the discussion of the main themes, themes and sub-themes. The main objective of the chapter was to provide critical reasoning and presentation of the results in order to provide a foundation how participants viewed the concept PHC and the challenges they come across when providing (professional nurses) and receiving (SAW) care, in particular ICM as one of the LARC at PHC facilities.

4.3.1 MAIN THEME 1: LOW (ICM) CONTRACEPTIVE UPTAKE: PROFESSIONAL NURSES' VIEWS

Despite the introduction of ICM in 2014, its effectiveness as one of LARC and its low failure rate of less than 5%, its utilization rate by SAW remain low. Occasionally, SAW do not intend to utilize contraceptive methods they do not know or have no experience on. This may be one reason, amongst others for the low ICM uptake, as the newly introduced method. Ineffective or non-use of effective contraceptives have received worldwide recognition, but regardless of the dangers of an unwanted pregnancy and STIs, adolescents rarely use contraceptives. ICM low uptake is alarming as mistimed pregnancies for both teenagers and SAW both are still an international problem that is consistently affecting these individuals and their respective families. The introduction of ICM particularly in South Africa and the world was deemed an effective strategy and plan trying to combat the unmet family planning need for women (SAW).

Globally, popular SAW who are not currently using any method of contraception to prevent pregnancy are faced with challenges of unintended pregnancies, unforeseen pregnancy complications, addition of unexpected family members and adding on the burden of the country's economic delinquent. Rees, Pillay, Mullick and Chersich (2014) announced that the low uptake of the highly effective ICM in South Africa, versus increasing unintended pregnancies more especially on adolescents and young SAW is deemed a worldwide concern. Cahill et al. (2018) added that family planning progress is a worldwide issue, since there is a programme (Family Planning Estimation Tool) in place that is periodically monitoring and evaluating 68 out of 69 countries of their family planning progress. The increasing burden of unplanned babies worldwide has a negative effect on the economy of the countries.

It is deemed to be health professionals' responsibility to ensure the utilization of RHS to prevent unintended pregnancies around the world. They have duties to create effective contraceptive methods awareness in their areas of operation to ensure the use of such methods by communities. The effectiveness of these methods is not known by those who receive the services, but well known by the health providers. These officials have the responsibilities of cascading that information to individuals, families, communities and the public at large. The DoH rely on these health providers to convince the public to use the available contraceptives to prevent unintended pregnancies and for child spacing as needed. Even though some of the health providers are not trained on the insertion of ICM, it is believed that they were trained and have skills to give advice

on the use of effective contraceptive methods and refer them for such services if not skilled enough to render the service.

The discussion below will reveal how the factors, which contribute to poor uptake of ICM by SAW, affect their daily lives and affect the use of contraceptive methods in general. The existing intolerable side effects as reported by SAW resulting in non-utilisation of ICM were identified. Minimal knowledge by SAW, partners and community related to ICM blamed for non-utilisation of ICM will be discussed from raw data. Existing rumours and myths mentioned as contributory factors towards poor uptake of ICM by SAW were found be challenges that hinder the use of ICM. Lack of nurses' training on ICM insertion resulted in negative attitudes by nurses and poor marketing of the method leading to inadequate rendering of RHS, predominantly ICM at PHC facilities. From raw data gained during interviews conducted, the following theme 1.1 and its sub-themes emerged from main theme 1, presented in (**Table** 4.5).

Table 4.5: Description of factors, which contribute to poor uptake of Implant contraceptive method by sexually active women

Theme	Sub-themes
1.1 Description of the factors which contribute to poor uptake of ICM by SAW	1.1.1 Existing intolerable side effects reported by SAW resulting in non-utilisation of ICM outlined 1.1.2 Minimal knowledge by SAW, partners and community related to ICM blamed for non-utilisation of ICM 1.1.3 Existing rumours and myths mentioned as contributory factors towards poor uptake of ICM by SAW 1.1.4 Lack of nurse training on ICM results in negative attitudes by nurses and poor marketing of the method

4.3.1.1 Theme1.1: Description of the factors, which contribute to poor Uptake of *Implant contraceptive method* by *sexually active women*

The findings pointed out that there are several factors, which contribute to poor uptake of ICM by SAW. Modern contraceptives have different side effects, which contribute more on the non-use or early discontinuation of contraceptives and putting more pressure on maternal health problems led by mistimed pregnancies (Sajid & Mehmood, 2017). Sitruk-Warea, Nath and Mishell (2013) argued that furthermost contraceptive methods are discontinued within eight months of first use, due to the reasons; lack of access to repeat prescription or fear of side effects. In the study 'Contraception technology: past, present and future,' Sitruk-Warea et al. (2013) further added that even with the availability of safe and effective forms of contraceptives and increasing contraceptive use, people in both developing and developed countries bump into unsatisfactorily

high rates of mistimed pregnancies which add to population growth. It has been announced that majority of SAW around the world dislike methods of family planning which have troublesome side effects (Sajid & Mehmood, 2017).

Sexual active women explain much of these side effects as being problematic in their lives thereby disturbing their relationship with their sexual partners. Together, various factors tend to influence SAW's decision as to either use a contraceptive method or not. Factors such as socio-cultural beliefs, perceptions and adopted practices may influence personal knowledge about different contraceptives and use of such contraceptives. For example, people who perceive that they are at low risk of falling pregnant may not use contraceptives but they may end up falling pregnant. Those who perceive that they are at high risk of pregnancy and fear its consequences may adopt facilitating factors that motivate them to practice health related behaviours; they will adopt effective contraceptive methods of their choice and will never forget the follow-up date as indicated by health providers. All contraceptives available in the health facilities have specific side effects that may or may not encountered by the users. Even when such side effects are experienced (SAW) there is a way of managing them either by use of treatment issued by professional nurses or advice that can be given under this theme, descriptions of the factors which contribute to poor uptake of ICM by SAW, there are four sub-themes that emerged and are presented as follows:

4.3.1.1.1 Sub-theme 1.1.1: Existing intolerable side effects reported by sexually Active women resulting in non-utilization of Implant contraceptive method Outlined

Information from both participants (SAW and professional nurses) in the two Sub-Districts of Vhembe District reported fear of side effects and fear of unknown as the main issues that inhibit SAW from using the newly invented ICM. ICM has multiple side effects, which include weight gain, amenorrhoea and the bleeding nuisance. The bleeding nuisance is the most common side effect and reason for discontinuation of the method; while most SAW, experience reduced bleeding overall. Complications related to utilization, insertion, and removal are rare, hence this device can be utilized to improve dysmenorrhea, menorrhagia, and endometriosis (Amico, Kumar, Rosenstein & Gold, 2015). Non-LARC are discontinued in the first few months of use in line with fear of side effects, fear of unknown and failure to tolerate advice and treatment that counteract these side effects. Failure of SAW to trust professional nurses' counselling information, advice

and treatment issued contribute to the unmet need for family planning. Amongst a number of ICM's known side effects, in the current study the most common one pointed out is the bleeding nuisance reported by SAW resulting in non-utilisation of ICM. Many SAW dislike contraceptive methods that interfere with their menstrual cycle since they have faith that interrupted cycles disturb sexual relationship with sexual partners.

The study in Pakistan postulated that planning and utilization of LARC has dependably been low (around 2%) and related with various issues, like fear of the unknown. Married SAW who need to postpone having another child, or end childbearing, are not utilizing any LARC as deemed, due to fear of contraceptive side effects (Sajid & Mehmood, 2017). Moreover, in the current study several SAW announced that they understand that ICM is a LARC but they are fearful of the contraceptive side effects they heard of. Even before using the contraceptive method, they just fear these side effects following the pieces of information they got from their peers and social media. Participants displayed that they do not have full information about ICM and have fear of the unknown. However, this is lack of experience and lack of knowledge about this device, ICM. The following are the direct excerpts that were alluded by participants:

- Participant A, Prof/N CLN1:

  SAW heard rumours about ICM that there is profuse bleeding including headache and dizziness, weight gain once the device is inserted. They do not have full information about ICM and have fear of unknown. They are experiencing lack of knowledge about this device, ICM. There is a myth that when inserted ICM their sexual partners will experience weakness during sexual intercourse. Males fail to perform their sexual intercourse activity as expected by the other sexual partner due to the weakness caused by ICM. Some male partners believe on the myth that when SAW are using contraceptive methods they are affected and experience waist pains and premature ejaculation. This affect their sexual activities before they reach excitement. These makes them to feel uncomfortable as the reason for sexual intercourse is that pleasure that is now disturbed.

- Participant 2, FGD = 1 CLN =1:

  The bleeding discourages majority of us as SAW not to utilize the device. Continuous or irregular bleeding disturbs our sexual relationship. It turns what we think is normal

life to the so-called wrong direction. Our sexual partners emotionally become affected and that encourages them (males) to have multiple partners as every day the wife is menstruating.

- Participant 4, FGD= 4 CLN = 1:

  There are rumors that people (SAW) are gaining weight due to amenorrhea after inserting the device (ICM). I have observed some SAW who gained weight who were using this method of birth control. Hmmm… I'm also afraid to gain weight because majority of men dislikes heavy weight women and one may be divorced due to that. Majority of SAW does not want to gain weight remember it also mean changing your wardrobe which is expensive.

Mastor et al. (2011) concurred that during their study 'Users' perspectives on Implanon in Malaysia', many SAW reported bleeding nuisance during the period they used ICM. More than one-third suffered from prolonged bleeding and spotting. According to Kusi-Appouh, Acquah and Tabsoba (2016) new family planning methods are being introduced in particular ICM, which is an opportunity for SAW to address the high and growing demand of unintended pregnancies and prevent unsafe abortions. The reason being, one in three SAW in Sub-Saharan Africa still experience an unmet need of family planning due to fear of side effects that these contraceptives have (Kusi-Appouh et al., 2016).

In the study in Ashanti-Mampong Municipality of Ashanti Region, Atiemo (2015) found that fear of side effects was the main reason for discontinuing the use and non-use of modern methods; SAW preferred the traditional methods of contraceptives to prevent pregnancy. Hence, the use of contraceptive methods in Pakistan is low (35%) and SAW prefer induced abortions as a tool of family planning. Approximately 2.2 million induced abortions took place in Pakistan in 2012 with an annual abortion rate of 29 per 1000 SAW (Javed, Mehmood & Almas, 2016). As indicated by Javed et al. (2016) ICM minor side effects comprise of headache, acne, weight gain and breast tenderness which occurred in only (20 – 30%) of their customers. The known post insertion side effects of ICM consisted of spotting, irregular vaginal bleeding for longer periods and amenorrhea (Javed et al., 2016).

Medhin, Gebrekidan, Nerea, Gerezgiher and Haftu (2019) indicated that South African Family Practice ICM discontinue was up to 43% of SAW prior to completion of the period of three years,

most of whom did so because of irregular bleeding patterns and other related side effects. Even in the Vhembe District, findings of this study also support the above statement as SAW are reluctant to use ICM due to fear of existing intolerable side effects reported by both users and non-users of this newly inverted method. Rees et al. (2017) added that despite its (ICM) effectiveness and advantages, South Africans have not realized this method‘s promises hence, ICM inserted in the public sector has fallen from 175 000 in 2014/2015 to only 50 000 in 2016/2017.

According to Jones et al. (2015), fear of intolerable side effects by SAW is perceived barriers that play an important part in behaviour change. SAW have found out one of the issues or factors that prevent them from utilizing ICM even though it is one of the very effective methods of family planning. Do Nascimento Chofakian, Moreau, Borges and dos Santos (2019) added that 5.2% of monthly events represented SAW switching from one method to another due to fear of side-effects of certain methods without even trying to manage or treat the emerging side effects. These led some of SAW to switch from highly effective methods to less effective or no method at all, leading to unmet needs for family planning and bring about challenges of unintended pregnancies. Rees et al. (2017) clarified that SAW who experience intolerable side effects, especially abnormal bleeding, require timely interventions, following a standardized protocol, including use of medications. Medhin et al. (2019) added that ICM does influence bleeding patterns, with 20% of SAW experiencing amenorrhea and 50% of SAW having unpredictable or prolonged bleeding.

Rees et al. (2017) argued that it lies in the hands of health providers to encourage SAW‘s returns for side effects treatment and monitoring, follow-up phone calls and home visits would raise ICM uptake. Medhin et al. (2019) during their study on “Early Implanon discontinuation rate in Ethiopia” confirmed that a solution to this problem is counseling SAW on side effects, including expected bleeding patterns has shown to improve continuation rates for injectable and implantable progesterone contraceptives. Ko, You, Kim, Faan, Lee, Kim, Kim, Nam and Lee (2010) in their study entitled “Family planning practice and related factors of married women in Ethiopia” clarified that very few SAW receive information regarding possible contraceptive information from health providers. Insufficient contraceptive information posed challenges to many SAW who did not have relevant information concerning these side effects of different contraceptive methods; leading to limited choice of contraceptive methods and unmet family planning needs for youths and SAW.

4.3.1.1.2 Sub-theme 1.1.2: Minimal knowledge by SAW, male partners and Community related to ICM blamed for non-utilisation of Implant Contraceptive method

Knowledge about different contraceptive methods, their usage, effectiveness, possible side effects and management empower individuals to make informed decisions and promote the use of such methods correctly. Often SAW acquire knowledge about contraceptive methods from various sources, including peers, media and health institutions. Some of the information given may not be accurate or create a false impression about the contraceptives, thereby influencing the uptake of these methods especially information from peers, friends and social networks (Atiemo, 2015).

Sanz-Martos, López-Medina, Álvarez-García and Álvarez-Nieto (2019) clarified that a knowledge construct is defined as a set of ideas, concepts or experiences acquired through the senses that allow a group or individuals to reach a higher level of reasoning. Adequate knowledge about sexuality and contraception is defined as the experience of training about sexuality and contraception that allows one to make informed decisions and pursue one's sexuality safely. In the current study, very few participants were found to be sharing information from their personal experiences as in each FGD the researcher found that those who used the method since its introduction ranged from one to six SAW. The information given by many SAW in the current study was heard through rumors from friends and peers sharing their experiences about ICM. Very few indicated that they heard information about ICM at health facilities but lacked interest of using the method (ICM) due to fear of side effects heard from peers and social networks. The following are some of the citations from the participants:

- Participant 13, FGD 2 = CLN = 2:

> *Lack of knowledge about family planning methods and sexuality in black communities is a challenge as this method is made for SAW in different races for birth control. I believe that other races may be effectively using this method, once a method is introduced there is a need for such treatment even though SAW are reluctant to use it. I remember one older woman said even when injectable were introduced people were afraid to use it with lots of stories but as information was given continuously it is used now.*

- Participant 13, FGD 2 = CLN = 2:

There is wrong information from social networks, peers and friends who have not used and those who have used and dislike this method that contribute to non-utilization of the method. Patients think that this wrong information is true. That is the main problem about SAW instead of visiting the facilities to find out from those (nurses) who are rendering the RHS, they (SAW) just conclude. This information clearly indicates that members of the community lack knowledge about this newly introduced method of family planning.

- Participant 5, FGD 3 = CHC = 1:

Sexually active women has lack of knowledge and when they hear the rumors, they turn not to utilize the device due to fear of unknown instilled to them by their peers. Remember level of understanding in different women also depend on the level of education that the person has. When one hears information from wherever they do not ask if they do not understand they just take it as it is and believe it.

A study conducted among SAW attending three hospitals/clinics in Accra, Ghana to "explore reasons why women were not using contraceptives" found that a number of SAW did not have relevant information on how the different contraceptive methods function or the correct use of such methods (Atiemo, 2015). In contrast, relevant knowledge on contraception did not necessarily explain the future use of contraceptives. The reasons for non-use included that contraceptives cause infertility; cause damage to the uterus, reduce sexual pleasure and may result in unknown diseases of the reproductive organs (Mkansi, 2018). Bernard et al. (2018) indicated that the key perceived barrier for not using LARC by SAW is lack of information regarding the effectiveness of the contraceptive. The other perceived barriers were professional nurses' lack of knowledge and the myths in general that are attached to LARC. Professional nurses during their study (Bernard et al., 2018) responded that they are overworked and lack time to render LARC accordingly, which include; insufficient time to counsel SAW in need of LARC and lack of knowledge concerning contraceptive medical eligibility (Bernard et al., 2018). Alemayehu et al. (2015) and Kimani et al. (2015) concurred that the less information received about the contraceptive method the more existence of the perceived barriers leading SAW not to use the effective LARC.

Sanz-Martos et al. (2019) in their study in Brazil where the sample included 387 students pointed out that the main barriers found among young SAW on the use of any contraceptive method are

the difficulty in obtaining them and the lack of knowledge about the different contraceptive options available. Several research studies postulated that increasing the level of knowledge about sexuality and contraception is considered a key element in the prevention of unwanted pregnancy through use of highly effective contraceptives like LARC (Sanz-Martos et al., 2019).

In the current study, SAW divulged that the information they have, was from their peers, friends and very few included information from health institutions. Atiemo (2015) clarified that SAW in India agreed that the main source of information was by the experiences other SAW shared with them. According to Alemayehu et al. (2012), a study in Mekelle Town, Ethiopia revealed that low uptake of LARC is associated with insufficient knowledge SAW have. The barriers to use of LARC include a general lack of awareness of LARC, their safety and effectiveness, Atiemo (2015) added. Limited information on how contraceptives works and contraceptive side effects by SAW is also a barrier that lead them not to utilize LARC according to Ko et al. (2010) during their study in Ethiopia. In contrast, Rusibamayila, Phillips, Kalollela, Jackson, and Baynes (2017) reported that individuals' knowledge concerning contraceptive methods was high in Tanzania. However, SAW feared side effects and often held unrealistic beliefs about their severity, such as that they cause cancer and infertility: The researcher found that individuals' experiences and rumours from friends or peers, and everyday learnt information play a significant role on the use of old or new contraceptives.

4.3.1.1.3 Sub-theme 1.1.3: Existing rumours and myths mentioned as Contributory factors towards poor uptake of Implant contraceptive method by sexually active women

The researcher in her daily duties at PHC facility learnt that quite a number of SAW who visit the health facilities for different types of services, always including RHS portray rumors in each newly introduced service rendered. These are signs that they have learnt something similar or different to services they receive or information explained to them. That clearly shows that people have their personal beliefs or some knowledge before approaching the health services. In the true sense of life people tend to follow and believe on pieces of information or stories that people talk about, that may be true or false. One of the professional nurses voiced out that SAW believe in rumors and myths because they lack experience on the use of this new device, ICM. Even in Ghana, Eliason et al. (2014) interviewed 1914 pregnant women and they found that the intention

to select and adopt a contraceptive method of choice were both significantly influenced by previously experienced use of that method.

The other challenge about ICM is that it is still a new method, SAW are not experienced on using this method. They also think that it may not be effective like SACM and injectable that they know and have used to prevent unintended pregnancies in the past. Some have a belief that they may fall pregnant when inserted ICM, due to lack of experience and fear of unknown as assumed. Effective utilization of ICM by SAW is affected by the practices following these pieces of information or stories from friends and peers as indicated by participants on one to one semi-structured interviews. SAW also reported indicating that they heard different pieces of information about the device ICM, such as myths that the device can flow within the blood to the heart and kill a person; hence, they are less motivated to use this newly inverted contraceptive in South Africa. The following are among the excerpts from participants:

- Participant G, Prof/N CHC = 2:

  There is wrong information from social networks, peers and friends who have not used and those who used and dislike this method that contribute to non-utilization of the method. Patients think that this wrong information is true. That is the main problem about SAW instead of visiting the facilities to find out from those (nurses) who are rendering the RHS, they (SAW) just conclude. This information clearly indicates that members of the community lack knowledge about this newly introduced method of family planning.

- Participant B, Prof/N CLN = 1

  There are false rumors about this method, from SAW 's peers and those who have ever used this method and when they hear about those they do not want to try to use the method they conclude that the rumors they heard is true. That is the main problem about SAW instead of visiting the facilities to find out from those who are rendering the RHS, they (SAW) just conclude. Some SAW experience amenorrhea, which they feel uncomfortable, as they are interested on the bleeding process on monthly basis. They believe that menstruating every month reduces weight gain and when they menstruate, they feel that pride that they are real women.

- Participant D, Prof/N CLN = 2:

> *There heard these hear says or rumors from their peers. It is labeled as the method that when used one will have irregular or bleeding nuisance. This may lead one not to fulfill her sexual partner's activities because of this major ICM side effect.*

- Participant A, Prof/N CLN = 1:

> *Sexually active women heard rumors about ICM that there is profuse bleeding including headache and dizziness, weight gain once the device is inserted. They do not have full information about ICM and have fear of unknown. They are experiencing lack of knowledge about this device, ICM. There is a myth that when inserted ICM their sexual partners will experience weakness during sexual intercourse. Males fail to perform their sexual intercourse activity as expected by the other sexual partner due to the weakness caused by ICM. Some male partners believe on the myth that when SAW are using contraceptive methods they are affected and experience waist pains and premature ejaculation. This affect their sexual activities before they reach excitement. These makes them to feel uncomfortable as the reason for sexual intercourse is that pleasure that is now disturbed."*

According to Jones et al. (2015), these rumors and myths that SAW heard are possible psychological barriers preventing them from utilizing ICM as one of the LARC highly effective in preventing pregnancy. In the current study, these are perceived barriers inhibiting SAW from engaging in healthy preventive behaviour. In the study conducted in Spain on "Sexuality and contraceptive knowledge on University students" by Sanz-Martos et al. (2019), they concurred with the current study findings. They observed that even in the previous studies, it was reported that the main reasons that lead SAW to have opposing attitudes concerning hormonal contraceptives were based on the negative experiences encountered by their peers, friends and other community members.

These are in line with the findings by Meskele and Mekonnen (2014) in their study entitled "Factors affecting women's intention to use long acting and permanent contraceptive methods in Wolaita Zone, Southern Ethiopia"; more than half of SAW, who participated in their study had a negative

attitude towards use of LARC for the reason of those myths. These myths include misconceptions and rumors from peers, friends and social networks. Again, additional reasons for not using these LARC and permanent contraceptive methods, according to Ko et al. (2010) include socio-cultural beliefs, misunderstandings of functions of contraceptive methods, together with health provider's limited information and skills required for the provision of different LARC chosen by SAW.
Mekonnen, Enquselassie, Tesfaye and Semahegn (2014) added that a number of participants of the FGD they conducted raised many factors and mistaken beliefs that hinder use of LARC and permanent methods. Those factors embrace; husband's disapproval, considering children as assets, fear of sterility, lack of knowledge, cultural and religion disapproval and fear of numerous side effects such as heavy bleeding menstruations, slipping out during heavy work in the case of intra uterine contraceptive device. The researcher acknowledged that SAW have lot of information, both positive and negative that was learnt and observed in their lifetime that poses delinquent. This information stops them from adopting effective contraceptive methods that will help them in child spacing and prevention of mistimed pregnancies.

4.3.1.1.4 Sub-theme 1.1.4: Lack of nurse training on Implant contraceptive method Insertion, results in negative attitudes by nurses and poor marketing of The method

The negative attitude displayed by some of the professional nurses portrayed lack of knowledge with regard to relevant information to be given to SAW about ICM. That might be due to lack of training of health professionals on the newly inverted ICM. In the current study participants voiced out that, professional nurses seem to lack sufficient knowledge to deliver the service they (SAW) require because some patients were turned away, to come back when the informed nurse is on duty. Professional nurses also indicated that there is very low usage of ICM evidenced by very low monthly statistics reported. ICM low uptake is aggravated by both health providers' and SAW's lack of knowledge about this method.

Participants (professional nurses) clarified that the training conducted by the Vhembe District to insert ICM did not cover all professional nurses who render RHS at PHC facilities. Only one professional nurse per facility was trained and the agreement was that those trained must go back to their respective facilities to train others. This posed a challenge in health facilities, as the district never supported professional nurses at PHC facilities as promised. The other staff members developed negative attitudes against such trainings at facilities and were reluctant to attend which

rendered them with little or lack of knowledge about insertion of ICM. The following are some of the citations from participants:

- Participant D, Prof/N CLN = 2:

> *Majority of health providers also lack confidence on the method because they did not undergo the full training on ICM. They were trained in the facility by co-workers who were also not very sure about ICM as a new method. There is also no mentoring by the trainers in the facility, which also promote lack of confidence by those trained in the facility. I think if those in the Vhembe District who trained health providers for that specific period should move around facilities to mentor those who were trained by co-workers to enhance power and confidence.*

- Participant 2, FDG = 1 CLN = 2:

> *The other thing is that health providers' attitude because you ask about the method (ICM) and one will say are you interested on that thing. This is mostly done by the very old nurses, you will be told, injectable are available without explaining to you the method you asked about.*

Rees et al. (2017) argued that all professional nurses in the health facilities providing RHS must all be trained on newly introduced contraceptive methods; to empower them and enhance service delivery of family planning methods including these LARC. These trainings must include orientation to tools such as procedural checklists, contraceptive effectiveness charts, clinical case discussions, practical training with anatomical models and audiovisual materials. Adeagbo (2017) emphasized that for effective use of this LARC DoH should consider retraining and supporting health providers to address competency gaps and negative attitudes towards implementation of this newly inverted method, ICM. Dissimilarly, Oosterhoffa, Dkharb and Albert (2015) in their "qualitative study to explore the reasons for the low uptake of contraceptives among Khasi people in a rural district", found that in Meghalaya state in northeast India, there is serious shortage of trained staff needed for the provision of different types of contraceptives. Despite the fact that the right to contraceptives for family planning is widely viewed as crucial to a variety of development goals for community members, human resources to implement the job remain an outstanding challenge.

For training to be, effective planning should be carefully done and accompanied by other interventions to strengthen service delivery. Rees et al. (2017) pointed out that in a study in Bangladesh, for example, training was largely ineffective, as health system weaknesses constrained the potential for service improvements. In South Africa data also indicated that trainings conducted were too short and did not include proper management of side effects and removals, may be inadequate to support ICM provision (Rees et al., 2017). It is uneasy for SAW to adopt contraceptive methods, which they are unsure of its safety and effectiveness. However, SAW are driven to adopt SACM due to little or no teaching they receive on LARC at PHC facilities from health providers (Atiemo, 2015).

Presentation and publicizing of newly introduced contraceptive methods can aid public members with information essential for choosing and complying on the chosen method. SAW indicated during the interview that ICM is not marketed like other contraceptive methods when they were introduced. They voiced that previously some SAW were motivated to use contraceptives only by viewing pamphlets pasted on walls and notice board at health facilities. That triggered people's mind and then they asked questions about the advertised method if it was not the topic of the day. This is one of the cues to action that are referred to precipitating or facilitating factors that will motivate SAW to take action and ask about the method. This also acts as a reminder even for those who might have forgotten their dates of reviewing their adopted method of family planning or even those who want to start using a new method. The contraceptive advertising pamphlets help to modify individual socio-psychological variables that could affect SAW's decisions to use ICM, which include personality, social class, economic status and peer group pressure.

Since SAW heard false rumors about the device, it may encourage them to see these adverts on noticeboards indicating that the method is for every SAW. Furthermore, SAW clarified that it is very rare to hear professional nurses at PHC facilities giving health education about ICM like the one they used to do in the previous years before introduction of this device. They are hoping that professional nurses would go back to their basics of giving information to community members for programmes to run smoothly. Verbal communication one-on-one or group discussions is believed to have more positive impact on changing human behaviour. However, there is lack of verbal marketing of the service in most health facilities, which contribute to underutilization of the device, ICM as announced by participants. This is evidenced by the following quotations reported by participants:

- Participant 10, FDG = 3 CHC = 1:

I have never seen a pamphlets showing this ICM, previously there were always pamphlets showing different methods of family planning available in clinics. I ask myself what type of method is this one not displayed for us to see that is why we forget about it and use the old methods. We always see different types of papers pasted on the notice boards at clinics, which I think it was a means of communication between the clinics and the public to say there is a new family planning method in the clinic or challenges like new diseases. It was very much helpful to majority of patients especially those who can read, but even those who could not read when they see pictures they could ask then explanation help them to know what is new or happening.

- Participant 12, FGD = CHC = 1:

Yaa…! You are correct this method is not marketed like other methods as it used to be at clinics. Previously we used to admire things on the pamphlets, even in this facility there is no ICM pamphlets and I have never seen it in any facility. Therefore, something has changed in this department because they taught us they advertise their services the next they advertise no more but new things are being introduced. In this way, people visit and leave the clinics without knowing that there are new methods incase health providers are busy or short staffed and forget to inform patients.

- Participant A, Prof/N CHC = 1:

Very few nurses were trained in the Vhembe District and it was said that they must train others in their respective facilities. This led negative attitude on the part of staff members who were trained in facilities. Moreover, even the trainers never followed up at facilities to mentor staff members. I am saying this because SAW requesting this method are sometimes turned back to come when a trained nurse is back from off-duties. Little or no education is given to patients about this method because few nurses are trained on insertion of this device. Even health providers are not experienced on the method such that they lack confidence to market, or convince SAW about the service unlike with other SACM that are well-known.

Marston and Church (2016) pointed out that it is deemed possible that publicity of effective contraceptive methods might help improve knowledge and reduce failure rates for SAW using contraceptive methods. Beekle and Mccabe (2006) suggested that SAW and their sexual partners should be supported, encouraged to enter and complete formal education which is essential in bringing about a cultural and social change in attitude towards social value of effective contraceptive use. Thus, such effort will enable SAW and couples to obtain full and correct information about the methods they intend to use (Marston & Church, 2016).

According to Mastor et al. (2011) ICM is increasing in popularity worldwide since its insertion and removal is much easier and faster than with Norplant. The preceding research studies have revealed that complications linked with ICM insertion and removal are uncommon in the hands of trained health professionals acquainted with the techniques. Several research studies put forward that consistent health education is an effective marketing strategy that can address the imbalance in decision making about contraception and the role of SAW in societies (Beekle & Mccabe, 2006). In the current study, SAW complained that the launching of ICM when it was introduced, in 2014 February did not cover furthest areas, which receive services from clinics and mobile clinics. Some SAW who were fortunate during the launching of the new device said it was done at CHC and responsible staff promised them that the clinics would also be visited to cover majority of method users. Thus, SAW indicated that this method is not well marketed by professional nurses at health facilities. They remarked that in the olden days when they visit clinics and CHC pamphlets were found pasted which encouraged them to enquire about the displayed methods.

Availability of medication at health facilities is an essential point that needs to be followed up all the time by professional nurses who render multiple health services. Availability of medicine stock in health facilities is the heart of service delivery and DoH. Of all the facilities visited by the researcher only one facility was found to have lack of ICM but the promise was that the stock has been ordered. They also requested assistance from the nearby PHC facility where they were promised to get it the following day. Participants (SAW) believed that they could not talk much about availability of stock hence professional nurses may indicate that the device is not available if they are not intending to render the service. People who are very sure about stock availability are professional nurses who order and manage the stock since SAW will only know availability of the device if they request the service. Professional nurses clarified that the device (ICM) is always available in health facilities despite underutilization that is exhibited by low statistics reported on a monthly basis as observed. Most health facilities indicated that since the introduction of the

device in February 2014 they have never experienced shortage of the device. In conclusion, the challenge is underutilization of the device since stock is always available in facilities. This is evidenced by references from participants:

- Participant B, Prof/N CLN = 1:

  There is no challenge in this facility except that the method is underutilized by SAW according to the monthly reports observed. The other challenge is that our patients are not informed about the new ICM. The method is always available, we experienced shortage of other methods in the previous three months but ICM was readily available. I think the reason for availability of this device is that it is not a busy method like other SACM and injectable. It is not a busy method, as we insert one to three patients per month, not more than that.

- Participant F, Prof/N CHC = 1:

  The method ICM is accessible, is always available and the facility is within walking distance for community it serves. Stock availability of ICM was once reported by WhatsApp and rarely we could observe one facility not having the device; this justified constant availability of the drug in health facilities. Even those coming from far they are able to access transport to reach this clinic for different services.

- Participant 10, FDG = 1 CLN = 1:

  Availability is the problem as after removal of the device I opted to be inserted the new one, but it was said that it is not available. It seems as if the health providers did not have confidence on the device because they asked each other about availability. They (health providers) were even not sure if it was to be inserted immediately post removal of the device. Even though I did not know the logistics in the facilities but their hesitation shown that something is wrong, they were not fully informed. I doubted that the device could be available they may be displaying the negative attitude. But, I ended-up not getting the service as needed

The study called “Knowledge, attitude and practice of women regarding contraceptive implants, in Odendaalsrus, Lejweleputswa District, Free State Province” found that all health facilities had

enough ICM during the period of study (Makola, 2018). Mkansi (2018) pointed out that in Mali, modern contraceptive methods were available and the problem was that the services were considered inaccessible due to distance to the health facilities. SAW felt that RHS were catered principally for those who were married and the other barrier for not using the contraceptives was negative attitudes displayed by service providers. Participants who have never used the device indicated that they are not sure about the availability of ICM that they have never asked about it. The reason for not asking was that they were not intending to use that method of RHS due to fear of rumors of the side effects.

4.3.1.2. Theme 1.2: Description of the factors, which contribute to expected Uptake of Implant by sexually active women

Table 4.6: Presents theme 1.2 which emerged from main theme 1 and its sub-themes developed from raw data include: an outline that ICM viewed as a user-friendly method for all SAW and lack of risks to fall pregnant when using ICM promote uptake, are presented in (**Table** 4.6).

Table 4.6: Description of factors, which contribute to expected uptake of ICM by SAW

Theme	Sub-themes
1.2 Description of the factors which contribute to expected uptake of ICM by SAW	***1.2.1 An outline that ICM viewed as a user-friendly method for all SAW*** ***1.2.2 Lack of risks to fall pregnant when using ICM promote uptake***

4.3.1.2.1 Sub-theme 1.2.1: An outline that Implant contraceptive method viewed as a user-friendly method for all sexually active women

Sexually active women who used this contraceptive method and those who witnessed their friends, peers and relatives using the method commented that it is user-friendly as it is not user dependent. Once one pricked, on the inner upper arm of less active arm, the pain is just felt that day; it will be felt again after three years' period. Participants commented that ICM is unlike the injectable where you visit the clinic for being inflicted pains with needles every two months for notheristerone and three months for medroxyprogesterone, four to six times per year.

They further added that SAW visit clinics more frequently for review of treatment, meanwhile those on ICM come once and for all, they visit when there is a need; they visit when they need assistance on management of side effects, for example, if one is experiencing irregular bleeding. SAW

indicated that the issue that ICM causes irregular bleeding is true but in most cases, this nuisance is manageable if one follows the prescribed treatment and advice given by professional nurses.

Participants clarified that relatives, peers and friends are exaggerating the bleeding nuisance and majority of those advocating for these side effects have never used the device. Those who are interested in utilizing the device; who do not want to frequent PHC facilities for review of treatment can manage ICM common side effects. They can seek medical assistance on time in order not to waste their time since they need to manage time personally. Business SAW, employed SAW and those who are studying find the methods as ones that solve their problems: frequent movements in and out of health facilities leaving businesses behind.

Participants communicated that they are now free of long queues waiting to review their treatment more frequently. Participants reported that with ICM there is no need for compliance by the user since the device is not user dependent. However, those who have not used ICM did not have much information regarding this effective method rather than relying on the pieces of information they got while sharing with their peers and friends. Additionally, this device can be utilized by both nursing and non-nursing mothers without disturbing breastmilk production; does not have negative effects on the growth and development of the newborn.

Sexually active women who use ICM; their interest rests on the effectiveness of the method. When ICM device is removed, it does not remain in the body like injectable. Some SAW may wait for nine to 12 months without falling pregnant after stopping use of injectable, more especially with medroxyprogesterone. Furthermore, removal of ICM means immediate return to fertility. This was evidence based on what some of the participants confirmed their personal return to fertility after removal of ICM. The device can be removed anytime without the medication remaining in the body like injectable, which remains and lengthens period of returning to fertility.

In the current study, SAW announced that some of them experience amenorrhea when utilizing ICM, which they feel comfortable as some SAW do not like the bleeding process monthly. Their life plans are not interrupted when using this LARC because mistimed pregnancy is not a problem. This device prevents pregnancy up to 99% unlike other methods of family planning where one can fall pregnant if she forgets to take a pill or return date to be injected. They are feeling relaxed when doing their daily duties without thinking of the return date to visit their clinic. These findings are supported by the following quotes voiced by participants:

- Participant A, Prof/N CLN = 1:

  When using ICM, there is no need to comply, in other words the method is not user dependent. Once the device is inserted on the upper arm SAW does not worry about forgetting the time to take or use the medication to prevent the pregnancy. There is no need to set up a telephone reminder to swallow a pill or go to clinic for injectable or to fetch OC supply. Once the device is inserted and a measured amount of the medication to prevent pregnancy will be released into the blood stream and start functioning for a period of three years.

- Participant E, Prof/N CHC = 1:

  Sexually active women utilizing the method say they feel very much comfortable about the method. Some say their monthly menstrual cycle have not changed. Some say they experience amenorrhea, but they are continuing using the method. SAW utilizing ICM as method of family planning are happy as they say it reduces their frequent visit to clinics for review of treatment. Some go to an extent that when ICM is inserted, its period lapses they will remove it, then a new one be inserted again as it serves time. Some says it is user friendly since it improves their budget as when they travel to clinic they use transport, which they pay money. The money they would spent when coming for SACM will be saved and can be used for other household issues.

- Participant H, Prof/N CHC = 3**:**

  Immediate return to fertility, when Implanon device when removed it does not remain in the body like injectable. Its removal means immediate return to fertility. The device can be removed anytime without the medication remaining in the body like injectable, which remain and lengthen period of returning to fertility. Some SAW experience amenorrhea, which they feel comfortable as they do not like the bleeding process on monthly basis. Their life plans are not interrupted when using this LARC because mistimed pregnancy is not a problem. No need for frequent return date, they are feeling relaxed when doing their daily duties without thinking of the return date to visit their clinic. Some indicated that they are interested to use

this new method as its long they have been interchangeable using these SACM. They want to use something new for child spacing.

- Participant 2, FGD = 3 CHC = 1:

  Implant contraceptive method is one of the best methods I ever came across, the device last for a very long period, which is three years; I think it is user-friendly. We serve money even though is little we can use the transport fees for other expenses at home unlike with other methods that requires us to revisit facilities more regularly. I think, I will also insert the device as it worked well for my sister and would like to experience the side effects myself.

The unmet need for contraceptive needs triggered the National Department of Health (NDoH) that introduced Implanon NXT (ICM) in 2014 to increase the range of contraceptive options for SAW, particularly LARC (Adeagbo, 2017). Despite its low uptake, ICM is viewed as an effective method worldwide, with low failure rate of 0.05% compared to other contraceptive methods (Mkansi, 2018). In addition, Akisono (2009) clarified that the WHO signaled ICM as an 'effective, LARC of fertility regulation helpful to SAW who wish to lengthen their period of contraceptive protection'. In contrast, Mkansi (2018) pointed out that the effectiveness of OC in preventing pregnancy depended on taking it daily and timeously, since it is user dependent.

Mkansi (2018) further alluded that hormonal strategies, combined estrogen-progestin OC have appeared to disable breast milk production. Sajid and Mehmood (2017) added that contraception with progestin alone, regardless of whether conveyed by oral, sub-dermal or intrauterine courses to the body, seems to have no malicious impacts on breast milk formation or newborn kid development when utilized by breastfeeding SAW. In addition, ICM method was said to be good for both non-breastfeeding and breastfeeding moms. Sajid and Mehmood (2017) concurred with these findings that manageable side effects are experienced when SAW are utilizing this device and its effectiveness is deemed good for SAW who need to hold up before falling pregnant again.

The use of ICM does not need the cooperation of a sexual partner as is done when partners are using condoms as clarified by Agboghoroma (2011). Adeagbo (2017) asserted that for effective use of this LARC DoH should consider reskilling, mentoring and supporting health providers to address competency gaps and negative attitudes towards the method. That should be attended

to, since family planning providers are essential to the success or failure of contraceptive programmes, and play a decisive role in shaping how SAW perceive different contraceptive methods. Medhanyie et al. (2017) pointed out that advanced interventions are needed to narrow disproportions in contraceptive use among different population groups, increase LARC users to improve quality of family planning.

4.3.1.2.2 Sub-Theme 1.2.2: Lack of risks to fall pregnant when using ICM Promote uptake

Implant contraceptive method is one of the LARC, which is highly effective and appropriate for nearly all SAW including nursing mothers to delay, space, or limit pregnancies and they are increasingly popular. During interviews and FDG conducted, both participants, health providers and SAW alluded that ICM is an effective method that prevents mistimed pregnancy in such a way that falling pregnant while using the method is very rare. They indicated that ICM is unlike other methods where one can fall pregnant if she missed appointment day for review of treatment. There is no risk of falling pregnant once the device is inserted and one clearly follows the instructions given by the health provider.

SAW who have never used the device pointed out that ICM seem to be a good method per what they observed from their peers and friends who used the method. Some of those who have not yet used the method indicated that they are thinking of trying it to find out for themselves about what people are saying. It also shows that SAW are interested on this LARC since they tried to observe and ask others who had experience about this method. SAW who are always busy with their businesses, studies and other things are not interested in the side effects of the device but they are happy about the effectiveness of this method.

- Participant 2, FGD = 3 CHC = 1:

  Unexpected pregnancy is not a problem when one is using ICM as a method of pregnancy prevention according to the knowledge I was given at Mutale CHC when it was introduced. The introducers said it is highly effective more than all the present methods that are available at facilities.

- Participant 9, FGD = 3 CHC = 1:

  I concluded that ICM is a good method, I saw that from a friend of mine. She did not fall pregnant while the device was in her body, which confirms the effectiveness

of this method in the prevention of pregnancy. When the time for removal was due, it was removed once she menstruated, the next month she missed her period without a long waiting period. My friend did not have many complaints for period of three years that I heard people talking about and I think this is a very good and reliable method.

- Participant 12, FGD = 3 CHC = 1:

Yes, sister hopefully so, I used it when I got married from 2014 to 2017 since I was finishing my studies and I did not fall pregnant for three years. It worked for me, since I learnt about its effectiveness in the prevention of pregnancy. I heard about the rumors but I felt I must read about the device myself to have more understanding of how it functions in human body. This was because I had interest on this device as it one of the LARC.

According to Jacobstein (2018) ICM have several positive features that contribute to their rapidly rising popularity which include quickly, safely, and easily inserted in two to three minutes by skilled health providers. ICM is a highly effective contraception for three to five years, as recommended by the studies from the World Health Organization (WHO). ICM has convenience, long duration of action (LARC), very high effectiveness, ease of provision, and speedy return to fertility upon removal. ICM failure is below 1% compared to OC 6% and injectable is about 9%. Nevertheless, Jacobstein (2018) revealed that the use of injectable remained high and rising, but has declined in nine of 12 countries during their study in Africa. ICM use does not necessitate pelvic examination or abdominal surgery like Intra-Uterine Copper Devices (IUCD) and female sterilization. Ready reversibility: No further routine action is necessary until the client wants ICM removed. The removal of the device is usually a speedy and straightforward procedure lasting for a duration of three to seven minutes even though a few removals may be difficult and possibly necessitating referral. Generally, ICM have high client satisfaction, as implied in their high continuation rates (Jacobstein, 2018).

4.3.1.3 Theme 1.3: Strategies to be used to promote required uptake of Implant contraceptive method by sexually active women

Table 4.7: Presents theme 1.3, which emerged from main theme 1 and its 4 sub-themes as developed from data collected, presented in (**Table** 4.7).

Table 4.7: Strategies to be used to promote required uptake of ICM by SAW

Theme	Sub-themes
1.3 Strategies to be used to promote required uptake of ICM by SAW	***1.3.1 Consistent information giving about ICM to SAW, partners, family members and community at large*** ***1.3.2 Male partners, families and community involvement suggested to promote support the use ICM*** ***1.3.3 A suggestion that mobile clinics nurses be trained so that ICM service be provided during visits to communities*** ***1.3.4 Dual method encouraged because ICM doesn't prevent transmission of STIs / HIV/AIDS***

Once problems or challenges are identified, the techniques of dealing with such challenges can be developed even though these challenges will not be resolved at once. Professional nurses during the semi-structured interviews pointed out that there are some existing strategies that may be used to promote the required uptake of ICM by SAW. It was indicated that challenges encountered during the introduction of ICM are like those of other RHS; that covers SACM, injectable and condoms when introduced challenges came-up. Those challenges included fear of unknown, method side effects, fear of being infertile in the future, desire to have more children and scarcity of information about the contraceptives. Challenges were addressed one by one, to promote the use of those contraceptives for that time by professional nurses. In the health facilities, professional nurses are key figures, more influential and play a crucial role in shaping how SAW perceive different contraceptive methods.

Continuous communication between health providers and public members through different ways of programmes can bring about a way to manage the challenges facing health facilities together with their respective clients (SAW). Through cooperation between the two parties a strong relationship can come forth for service delivery to continue and maybe the family planning needs for each SAW can be met. Bernard et al. (2018) claims that integration of existing strategies must be reinforced in order to address multilevel barriers to improve access to and acceptability of effective contraception in particular LARC. According to Robinson et al. (2012), the use of safe and effective hormonal contraceptives to prevent unintended pregnancies thereby enhancing overall health of SAW and the reinforcement of existing strategies can be a global benefit. This was evident in the following sub-themes that have emerged from this theme:

4.3.1.3.1 Sub-theme 1.3.1: Consistent information given about Implant contraceptive Method to communities and sexually active women suggested

Information giving through health education programmes and awareness campaigns at health facilities encourages use and promotes knowledge of SAW and the community at large. Knowledge around contraceptive and age of SAW have significant association with the use of LARC and permanent contraceptive methods. Talking to service users, more frequently increase their knowledge and understanding around the services they can use at PHC facilities. Community health workers (CHW) should be empowered about ICM so they can teach and recruit SAW in the villages where they operate to visit the health facilities for the service.

In this study, several participants (SAW) indicated that at PHC facilities professional nurses rarely speak about the newly introduced methods of family planning, ICM. They go to an extent of trying to avoid talking about the device, even when one has asked about it. In this study, professional nurses who participated in the study emphasized that extensive health education can help to reach the community members who are not informed about ICM**.** They promised to visit different community group members in social gatherings and churches to encourage these people to use contraceptive methods available at facilities to fight the increasing teenage and unwanted pregnancies as observed**.** The following are direct citations cited by participants:

- Participant B, Prof/N CLN = 1:

  Health education will be the first one: One of the strategies is to teach SAW about the advantages of ICM and re-emphasized about the importance of preventing unintended pregnancy. SAW must first try to use the method; it is then that they can say the truth about the side effects unlike talking from rumors. SAW whose sexual partners do not want or agree with utilization of other family planning methods may find that this is the right method they can use. After full explanation on this type of method it can help because they will make informed decision to use the method.

  Peer education: As health providers, we can organize peer education by health professionals together with SAW who ever used ICM in the past. SAW who are on ICM may be summoned to share their experiences and explain their feelings and advantages of ICM to their SAW. This will also involve experienced SAW who has used this method for full period of three years to tell them how ICM functions in human body as this differs according to individual hormones.

- Participant C, Prof/N CLN = 2:

> *Involvement of community health workers (CHW) who work outside the facilities in the communities. These should be empowered by health providers about more knowledge on the use of ICM and its advantages. This may help SAW to be informed about the availability and benefits of the use of ICM.*

- Participant F, Prof/N CHC = 2:

> *Continuous health education, groups of people may also be visited and health educated about this method. Nowadays church leaders always avail their members to be taught about health-related matters, so is our duty to visit them. Unlike in the olden days where restriction measures were in place that the churches only deal with spiritual education. Youth friendly services, health facilities have a program that focus on dealing with teenagers' health programs. The program is called youth friendly service, where in there are two staff members who are involved and responsible in running the program. Together as staff members in support of the two responsible delegates, we are teaching these youth members about sexual issues, health related matters to their age (youth) and utilize effective RHS like ICM to prevent unintended pregnancy in case they have started having sex, to help reach he District teenage pregnancy target.*

Meskele and Mekonnen (2014) in their study "Factors affecting women's intention to use LARC and permanent contraceptive methods in Wolaita Zone, Southern Ethiopia", experienced that extensive health information provided by the service providers at health facilities had great impact on SAW interested on ICM; that was implemented through behavioural change communication and information education strategy integrated with health extension programme. Lee, Lee, Shin, Ahn, Kim and Lee (2013) indicated that to improve the general health of SAW of reproductive age, health professionals should be aware of the importance of RHS education and counselling when they meet with SAW who are not using RHS methods at their clinics. Gomez, Fuentes and Allina (2014) clarified that health care providers have not only devised interventions to reduce

barriers SAW face in accessing LARC, but also developed targeted strategies to increase the use of such methods among “high-risk” SAW.

According to Meskele and Mekonnen (2014) during their study in Ethiopia, they established that contraceptive utilization was absolutely led by the use of SACM such as OC and injectable aggravated by absence of information around LARC and no formal education on the use of these methods. Lee et al. (2013) further argued the world call for nurses to have a greater commitment to reduce health disparities for maternal health, including family planning. Meskele and Mekonnen (2014) alluded that SAW have the right to be respected and the right to be informed about any new information or services in the institutions where they receive care. However, it is the duties of the health providers to support SAW’s informed decision making and to ensure that the family planning programme should focus on highly effective contraceptive methods, ICM.

The use of family planning methods differs with background characteristics such as age, marital status, education, religion, number of living children, desire for more children, previous use of modern contraceptives, urban-rural residence, and wealth or socio-economic status. These background characteristics influence the person’s ability to recognize the safety and effective use of the methods. They may also influence individual’s ability to access several types of contraceptives and the form of contraceptive that one is likely to use and adopt. Sanz-Martos et al. (2019) pointed out that it was estimated that more than half of all unintended pregnancies occur through misuse or lack of continuous use of contraceptive methods; when the background characteristic has been totally affected. The researcher concluded that even the possession of information does not predict the future use of contraceptives, clients (SAW) have the right to be informed about all the services they may need to use in their lifetime.

4.3.1.3.2 Sub-theme 1.3.2: Male partners, families and community involvement Suggested to promote support to those using Implant contraceptive Method

In the olden days, SAW were the only people who were found to frequent health facilities for different services. They were going there for RHS, child health and maternal health services. Numerous males still find it difficult to officially visit, PHC facilities for health services even though this behaviour has improved. Quite a number of males are found to be visiting facilities for health services and accompanying their children for services in facilities. It was believed then, that males

were the ones who were family providers and do not visit clinics since they were at work. Families constituted of females and male partners including other family members if available and these families are part of the communities forming countries' population. In this regard male partners, families and communities at large should be involved during the introduction of new family planning methods to enhance understanding of every public member. In case male partners have knowledge, about advantages and disadvantages they may come on board to assist their sexual partner of the method of choice.

Again, they may support their partners who may encounter intolerable side effects and encourage them to manage them as indicated by professional nurses. Informed community members are found to be very useful in the management of situations since they can join hands together with facilities to improve the health of the population. The clinic committee members are there to cascade information from clinic to communities and vice versa to share common ideas to serve the nation. Here are some of the citations voiced by participants of the current study:

- Participant I, Prof/N CHC = 3:

  Partner involvement; It is an important strategy that I think it can assist since every person need support from the loved once. I think if partners are informed about ICM and understand the information, the support to their wives have great influence which can encourage SAW to select and adopt ICM as method of child spacing.

- Participant F, Prof/N CHC = 2:

  In general people, both males and females are not accepting this new method, called ICM. Majority of SAW are using SACM including injectable and condoms. The challenges displayed for not utilizing ICM is the same with those experienced during introduction of injectable. They used to complain about break through or irregular bleeding, which was treated by the same or related medication used for ICM. Through continuous health education SAW now understand the use of such contraceptives and are able to manage the treatment (contraceptive) side effects. Even when we experience shortage of SACM and we propose that is better to switch to ICM, some SAW refuse displaying fear of unknown, this clearly show unacceptability of this method ICM. SAW's first visit requesting RHS come in

requesting a specific method, as a person has already chosen the method before visiting the facility.

- Participant C, Prof/N CLN = 2:

  The other available strategy is partner involvement. It is an important strategy that I think it can be very much effective. I think if partners must be informed about ICM since they have great influence on the sexual partners (SAW) as they are part of decision making when it comes to child bearing in families and societies. It is an important support in life toward SAW, as they need such involvement.

- Participant F, Prof/N CHC = 2:

  Male partners' involvement, it is an important strategy that I think it can be very much effective. I think if partners are informed about ICM they have great influence on the sexual partners (SAW) as they are part of decision making when it comes to child bearing in families and societies."

In Sub-Saharan Africa, comparable studies have shown the important role played by male partners in the RHS decision-making processes of SAW. Therefore, significant others' communication is now considered a fundamental factor of successful interventions to increase male involvement in the use of RHS Sub-Saharan Africa (Eliason et al., 2014). Male partners as fathers in the families are a crucial part in decision making in the families. In addition, male partners' insufficient support on contraception can lead SAW to switch from one method to the other or to no method at all; if their male partners disliked the method (do Nascimento Chofakian et al., 2019).

Male partners, families and community members are important components of families' development and growth. For that reason, it is crucial to involve them in family planning issues as numerous of them are male partners and community members who need this type of information (do Nascimento Chofakian, Moreau, Borges & dos Santos, 2019). The study 'factors influencing the intention of women in rural Ghana to adopt postpartum family planning' by Eliason et al. (2014) found that SAW made the point about their need for partners' approval before they could take on and use contraceptive method. Gomez et al. (2014) explained that the effectiveness of a contraceptive rests beyond several factors; for example, side effects, detectability by a male

partner or parent, the experiences of families and friends, and relationship context, all these influence method selection and continuation. However, for such multitude of reasons, even with perfect knowledge and no barriers to access, numerous SAW still may not choose LARC.

Participants who communicated contraceptive methods with their male partners LARC and permanent (Mekonnen et al., 2014) also explained that their partners have a good attitude or support them to use such methods. According to Bernard et al. (2018), an emphasis on male partners' involvement resulted in an increased percentage of SAW discussing contraception with male partners. Additionally, participants who involve their male partners on contraceptive issues were more likely to use LARC.

This is consistent with other studies showing male partners' involvement and increased partner's knowledge about contraception improves contraceptive uptake, effective use, and continuation (Bernard et al., 2018). According to HBM, failure to involve male partners and family members on the issues of RHS by SAW is a social perceived barrier that hinders them from using a contraceptive method they desire (Jones et al., 2015). Male partners', family members and the community members' involvement is deemed as one of the mediations desirable to narrow incongruences in contraceptive use among different population groups; increase LARC users and improve quality of family planning. (Medhanyie et al., 2017). Male partners', family members and the community members are all constituents of the population served by health facilities. Therefore, transparency of information regarding RHS may promote personal understanding and bring about a change in negative attitudes towards RHS ICM.

4.3.1.3.3 Sub-theme 1.3.3: A suggestion that mobile clinics nurses be trained so that Implant contraceptive method service be provided during visits to communities

In the current situation in Vhembe District, mobile services are rendered under the chosen trees where mobile clinics frequently officially visit to render health services to populations that are very far from health services on a specific given time. Populations served by mobile clinics reside more than five kilometres from health facilities. The introduction of mobile clinics was an issue of combatting the structural variables, which meant the distance between health facilities and villages where SAW come from to access reproductive services. Furthermore, structural variables cover the times for rendering RHS stipulated by different mobile clinics and PHC facilities, also availability of health providers trained on insertion of ICM (Jones et al., 2015). In Vhembe District RHS are rendered seven days a week at PHC facilities. Additionally, mobile clinics officially visit

points are on specific nominated days and that is subject to change in case the cars have technical problems that may arise at any given time.

Even though everyone is entitled to receive HCS, those officially visited at different points for care, problems are still encountered since some services are not rendered in those mobile cars under the trees. Populations are travelling to PHC facilities/hospitals to access services, which include antenatal, maternal health services and RHS in particular ICM insertion and removal. Insertion and removal of the newly introduced ICM (Implanon NXT) in South Africa does not take more time like the discontinued Norplant. Mobile clinic staff (professional nurses) must also be trained to render this service to try combating the unmet family planning need for SAW in those deep rural areas far from clinics.

Even though gained knowledge about available and effective contraceptives does not predict future use of RHS, continuous health education during official visit about child spacing and use of LARC that is cost-effective can help SAW inaccessible areas to adopt the method. Patients have the right to be familiar with all RHS available to access them when the need arises, this can be improved through communication between the two parties: - Mobile clinic's professional nurses and SAW at mobile official visit points. Moreover, the South African protocol that guides professional nurses in the provision of RHS does not exclude ICM services by mobile staff (professional nurses) since nurses are guaranteed to serve communities as per requirement of the DoH.

During semi-structured interviews, several professional nurses indicated that in the public institutions the ICM is inserted at PHC facilities and hospitals; hence, information about the newly introduced device, ICM is not reaching those who are in the deep rural areas. Majority of SAW who stay far from such facilities are experiencing this unmet need for family planning services as they receive services from mobile clinics, which do not provide LARC ICM, which is available in the Vhembe District. Insertion and removal of ICM is not a very long or complicated procedure. Mobile clinics also render RHS and this package of inserting the device at their visiting points must be included, to assist those in need of such services since they are staying far from facilities. The following are some of the direct quotations cited by participants:

- Participant H, Prof/N CHC = 2:

Accessibility of the method is a problem, because some SAW access the method as they can afford transport fees paid to and from home or even when they stay next to the facility. Those who stay far away from the health facilities do not access the method despite the fact of availability. Mobile clinics are visiting points that are far from clinics and patients cannot walk on foot to reach the PHC facilities. Mobile clinics must teach women about ICM as an effective method of family planning. I think the mobile staff members must be trained to insert the device at their visiting points to assist those who stay far from the facilities.

- Participant B, Prof/N CLN = 1:

To try to cover SAW far away from clinics, mobile staff must do those assisted by mobile clinics ICM insertion during their visits at official identified points. No woman should be turned away and told to visit the clinic to access the service. The Vhembe District must also take note of this alarming challenge to include Mobile staff in the training for insertion of ICM.

- Participant C, Prof/N CLN = 2:

Mobile clinics are supposed to insert ICM, as it is not a complicated procedure to be performed at points of visits. Training must include them since some patients come from far complaining that they were referred to clinic by Mobile staff for insertion or removal of the device.

In the study named “Strategies to prevent unintended pregnancy”, Blumenthal, Voedisch and Gemzell-Danielsson (2010) found that in low-income countries, there is unmet need for family planning. That is for the reason of not using LARC due to the result of underprivileged knowledge, insufficient logistics (e.g. supply chain issues), inability to service rural habitats and limits on the team of health care providers who can provide available contraceptive methods. Rees et al. (2017) concurred that ICM could also be delivered effectively by existing mobile outreach services, for example in sex worker programmes and community members that cannot reach health facilities (in deep rural areas). They further indicated that these mobile outreach teams must receive training on insertion and removal of ICM, mentoring and periodical brief refresher trainings for support purposes. Existing mobile teams can operate well with the help of CHW operating in their visiting points, through giving information to community members at their homes and encouraging them to visit mobile official points or health facilities (Rees et al., 2017).

Blumenthal et al. (2010) argued that a wide-ranging sexuality education in schools in the provision of realistic information about extensive range of sex-related topics is effective in increasing contraception use among adolescences. Even if such extensive education programmes may support prevention of unwanted pregnancies, in many countries around the world, such programmes have not yet started. This action may consequently increase use of LARC among youth thereby preventing the risk of unintended pregnancies resulting in school dropouts (Blumenthal et al., 2010). Regardless of their safety and efficacy histories, injectable and ICM methods remain underutilized and are used by an estimated 3.4% globally.

4.3.1.3.4 Sub-theme 1.3.4: Dual method encouraged since Implant contraceptive method does not prevent transmission of Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome and other Sexually Transmitted Infections

The interview statement pointed out that HIV/AIDS and other STIs are serious infectious diseases that need to be prevented for safety of individuals and prevention of spread. SAW indicated that quite a number of male partners do not want to use condoms for their personal reasons and some SAW fail to voice such behaviours in their families. This behaviour is deemed to spread this incurable disease, which also affects the unborn child if the mother is infected and has not been tested or fails to follow precautions indicated by professional nurses or other health providers. Prevention of HIV/AIDS spread is not an individual issue but a great crisis globally. It is considered the health providers' responsibilities to effectively inform and emphasize the issue of prevention of spread to their patients. The following are direct quotes cited by participants:

- Participant B, Prof/N CLN = 1:

  ICM is an effective LARC but like other methods of family planning, it does not prevent HIV/AIDS and other STI's. They are bound to prevent spread of infections by using the barrier method, consistent use of condoms is encouraged. As professional nurses providing the services, *we always remind them that the use of condoms need cooperation of the other partner that need good communication with the sexual partner, as the condom is user depended.*

- Participant C, Prof/N CLN = 2:

There is a very great concern between HIV/AIDS and other STIs and all contraceptive methods that are used worldwide. As health providers, we inform and encourage SAW that none of all contraceptive methods prevents such infections except condoms. The best way of using contraceptive is to use dual method for SAW, as condom alone may burst and unintended pregnancy may result. Accidentally (people) sexual partners may have unprotected sex, and then the use of effective methods such as ICM should be in place to prevent such pregnancies.

Sexually active women are encouraged to comply with contraceptive methods they choose, as during health education majority of sexual partners are not available to listen to such information. The other challenge that we encounter is that male sexual partners are not interested on the majority types of family planning methods used by their wives. Some males do not understand the reasons for using contraceptives that is the reason that SAW visit facilities alone for RHS.

- Participant D, Prof/N CLN = 2:

  Implant contraceptive method is an effective LARC but like other methods of family planning it does not prevent STI's is including HIV/AIDS. On giving any form of contraceptive professional nurses are supposed to give health education to SAW about the reasons for using condoms as an additional method to the method of choice. For safety reasons SAW are always informed at health facilities and by CHW in the villages to advocate for themselves to prevent HIV/AIDS/STIs , to use condom with their sexual partners as the condoms are distributed all over the villages. Condoms are given to both sexes without conversations that can be said to waist personal time.

Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome infection is a pandemic that is believed to be transmitted through sharing injection needles with an HIV positive person, unprotected sex, a pregnant woman who is HIV positive can transmit the virus to the unborn baby (Muthivhi et al., 2011). Furthermore, SAW utilizing the ICM to prevent unplanned pregnancies must be encouraged to practice the dual methods of contraceptives to prevent the risks of HIV/AIDS and STIs (Center et al., 2016). During the study "Knowledge, Attitudes and Perceptions of HIV/AIDS by Rural South African Secondary School Learners" it was revealed that some participants held misconceptions about contracting HIV from sitting on the same toilet seat used by an HIV positive person. Center, Gunn, Asaolu, Gibson and Ehiri (2016) argued that there

is no other method of contraceptive other than a condom that can prevent STIs and HIV/AIDS. It was further indicated that even World Health Organization (WHO) and United State Agency for International Development (USAID) are aware of this matter. In Asia sex workers who were, using oral contraceptives only were found to be infected with HIV/AIDS and other STIs (Center et al., 2016).

Implant contraceptive method is considered as a highly effective method of contraception, with an effectiveness rate of about 99.9% and it is not user dependent (Mrwebi, 2018), but majority of participants in both semi-structured interviews and FGD pointed out that they understand and know that ICM is effective in preventing pregnancy. It does not prevent the spread of STIs including HIV/AIDS pointing out that the use of condoms must be emphasized and is compulsory for all SAW and their sexual partners. According to a study “Contraception in the Context of HIV/AIDS” by Agboghoroma (2011), it was found that the increasing accessibility and use of highly active retroviral therapy (HAART) has better quality of the disease prognosis, life expectation and quality of life for people living with HIV. It has been indicated that over 50% of the 33.3 million HIV-positive population worldwide are SAW within the reproductive age group. Moreover, the effective usage of modern contraception including the practice of dual methods by HIV-positive and HIV-negative clients; can contribute significantly to reduction in both sexual and vertical transmission of the HIV-virus and other STIs (Agboghoroma, 2011).

The absence of accessibility and quality of family planning services have overwhelming maternal health consequences. In Ethiopia SAW die due to avoidable causes related to pregnancy and birth complications in which maternal mortality was 871/100,000 live births. Birth control methods have significant role on the reduction and prevention of maternal health problems and the achievement of SDG (Mekonnen et al., 2014). HIV/AIDS and other STIs are important issues to worry about and ability to prevent such infections need individual understanding, as this is seen as major concern to reproductive health facing youth, SAW, male partners and the communities worldwide (Agboghoroma, 2011).

Although sexual and reproductive health issues have formed a major area of focus in the past, SDG has focused on this area of health needs for youth within developing countries as they were previously neglected (Mgobhozi, 2017). Bastien, Kajula and Muhwezi (2011) during the study “A review of studies of parent-child communication about sexuality and HIV/AIDS in Sub-Saharan Africa” indicated that educating young people about sexual and reproductive health issues is a

global priority. Planned interventions aimed to promote healthy sexual behaviour and normally to delay sexual debut, decrease the number of sexual partners and increase the use of condoms as the main contraceptive method that prevents transmission of infections.

Sanz-Martos (2019) alluded that youth is a period characterized by impulsiveness and risk-taking, which make it a risky period for exposure to HIV/AIDS, other STIs and unwanted pregnancy. Mkansi (2018) added that teenagers experience negative health consequences of engaging in early and unprotected sexual activity, unintended pregnancy, unsafe abortions, pregnancy related mortality and morbidity and STIs including HIV/AIDS. According to Sanz-Martos (2019), when youth are informed, especially girls who are more vulnerable may explore their sexuality in a healthy way, without associated risks, it is necessary for youths to have a good level of knowledge. Mkansi (2018) suggested that relevant family planning programmes needed to develop covering culturally adaptive strategies to promote appropriate condoms distribution and usage. Furthermore, there should be provision of improved access to women-controlled RHS to prevent unwanted pregnancies (Ko et al., 2010). Accessibility and availability to contraception programmes can be a primary preventative strategy (Mkansi, 2018).

Operario et al. (2011) announced that in Ethiopia, family-planning programmes first started in the 1960s by Family Guidance Association of Ethiopia. It was further debated that among many sexual and reproductive health problems faced by SAW in Ethiopia, the following are included; gender inequality, sexual coercion, early marriage, polygamy, female genital cutting, closely spaced pregnancies, unsafe abortions and STIs/HIV/AIDS. Health providers together with SAW, clinic committees and the public should join hands to fight the spread of the infections to have an HIV/AIDS-free generation soon. Numerous contraceptive methods including ICM cannot prevent the blowout if this infection accept a condom.

4.3.1.4 Summary of Main Theme 1

The factors that influenced low uptake of ICM were clearly discussed following the perceptions of use of the device by SAW as viewed by professional nurses. The use of contraceptive is on the other hand, seen as a steady way of regulating unnecessary population increase, thereby reducing maternal and child mortality and morbidity, preventing unintentional pregnancies and future induced abortions as well as improving the social determinant of developing of countries (Agbanyo, 2018). Professional nurses' have indicated that the main challenge that influences low uptake of ICM by SAW rests on fear of side effects of these methods.

The most common side effect SAW ever talked about is the bleeding nuisance, since it interferes with their sexual relations with their sexual partners as indicated. Some likely reasons why adolescents do not use contraceptives may be due to gender imbalances, social pressures and economic constraints. Adolescents use contraceptives for several reasons including the wish to prevent or defer pregnancy, protection from STIs, fear of financial and social costs of pregnancy and fear of dismissal from school or home by parents/ guardians.

Insufficient knowledge possessed by most SAW challenges the effective utilization of ICM worldwide. In the current study, professional nurses alluded that inadequate information about this device does affect its use irrespective of its effectiveness in the prevention of unintentional pregnancy. Inadequate knowledge influences these SAW to believe incorrect information from friends and peers as observed by health providers. Some of the SAW who ever deny using the device due to the mentioned side effects had not yet used it? A study in Mozambique revealed that SAW have various erroneous beliefs and unclear perceptions about contraceptives, leading to unpredictable use. Furthermore, social norms and cultural gender roles often challenge and hinder the use of the pregnancy preventing treatment to be used by SAW (Capurchande, Coene, Schockaert, Macia & Meulemans, 2016).

The existing information from friends, peers and personal beliefs that people have were blamed for low uptake of this type of family planning. Agbanyo (2017) said that familiarity of the different types of contraceptives and methods' mechanisms without any misunderstandings has great likelihood of contraceptives' use. Providers' perceptions of having received inadequate training on ICM provision came out strongly across the interviews. Professional nurses indicated that the training was too brief and covered only some components of the service, no refresher course or support has been made available. Providers felt that the training was insufficient, given what they perceived to be the complexities of the method. Both participants (professional nurses and SAW) observed gaps of professional nurses' training on ICM insertion. Very few nurses were skilled on the insertion per facility due to lack of adequate planning on the implementation of the ICM programme.

From professional nurses' perspectives, inadequate training had honestly affected the quality of the family planning services delivery at PHC facilities as indicated. This scanty understanding of the ICM method, incomplete training on counselling SAW about this method, promoted negative attitudes due to scarcities in applied skills for ICM insertion and removal. Apparent insufficient knowledge and lack of counselling, as well as health providers' practical skills for ICM provision,

doomed that professional nurses lacked confidence in their ability to provide quality RHSs. Regardless of a strong intelligence of deficits in their training, providers constantly offered the package (Adeagbo, 2017).

Implant contraceptive method is established as one of the user-friendly methods since it is not user dependent and does not need the cooperation of the sexual partner. Unlike the other methods where you visit the clinic to be inflicted with needles every two to three months or collect other treatment to take home, ICM is inserted in the facility and once for the period of three to five years depending on the specification of the manufacturers. Professional nurses and SAW alluded that ICM is an effective method that having ill-timed pregnancy while using this device is very rare. They indicated that ICM is unlike other methods, where one can fall pregnant if she missed appointment day for review of treatment. There is no risk of falling pregnant once the device is inserted and one clearly follow the instructions given by the health provider. Mkansi (2018) confirmed that globally, ICM was perceived as an effective method, with low failure rate of 0.05% matched to other contraceptive methods.

Information giving through health education programmes and awareness campaigns at health facilities encourages use and promotes knowledge of SAW and the community at large. Familiarity around contraceptives by SAW have weighty relationship with the use of LARC and permanent contraceptive methods. The world call for nurses to have a greater commitment to reduce health disparities for maternal health through active communication with public members to alert them around RHS for child spacing (Lee et al., 2013).

4.3.2. MAIN THEME 2: INSUFFICIENT KNOWLEDGE; REFLECTING THE VIEWS OF SAW REGARDING UPTAKE OF IMPLANT CONTRACEPTIVE METHOD

Even with low levels of baseline contraceptive use, the publicity for family planning services intervention that provided both information on LARC and SACM, planning services and perhaps most essentially, access to the full range of contraceptive methods is being done. There was a lack of knowledge regarding how to insert ICM by some of the health professional, which led to inadequate rendering of the service. That might be due to lack of training of health professionals on implementation of the newly inverted device as indicated by professional nurses at facilities.

PHC facilities were the first point where patients receive family planning services as the hospitals are far from the villages where they reside and mobile clinics have specific dates of visiting their official points. As few professional nurses were trained on insertion of ICM, this clearly shows that skilled professional nurses lack awareness of information sharing within their workplace. They tend to forget that the information they possess is important for sharing and caring for their patients. Skilled professional nurses also lacked awareness of the importance of sharing learnt information for the benefit of their patients in health facilities (Pullen & Loudon, 2006). Professional nurses lacked information sharing amongst each other as they tended to treat learnt information as a personal issue rather than a cooperate asset.

Employee training and development were continuous life processes and were imperative as they bring about a change in human behaviour; also improving the management process and services rendered. By offering relevant knowledge to health care professionals, the DoH may enable trained professionals to work independently in underserved communities where needed most. Training for nurses was very important to make them understand reasons for rendering effective family planning programmes since they are more influential to SAW decisions on RHS; it is important for both families and the world. Professional nurses voiced that some of them in facilities lacked relevant experience on inserting at ICM Vhembe District, which is still a big challenge. Professional nurses were held accountable and responsible for their acts and omissions in relation to service delivery in their respective facilities. The theme 2.1 and 3 sub-themes emerged from main theme 2, presented in (**Table** 4.8).

Table 4.8: Description of the perceptions of SAW on the use of ICM

Theme	Sub-Themes
2.1 Description of the perceptions of SAW on the use of ICM	***2.1.1 Insufficient information about functioning of the device (ICM) to prevent pregnancy*** ***2.1.2 Shortage of staff at PHC facilities implementing ICM on daily basis*** ***2.1.3 Lack of counselling about RHS's including ICM by professional nurses***

4.3.2.1 Theme 2.2.1: Description of the perceptions of sexually active women on The use of Implant contraceptive method

The positive and negative perceptions of SAW about the use of ICM lead to underutilization of the method as specified by professional nurses during the interviews. SAW had their perceptions

about the use of ICM at PHC facilities in the Vhembe District. Participants pointed out that they fear using ICM as they think it is a foreign body, which is not good for one to move around with it. They also indicated that it might have effects on their future reproductive system thereby hindering their childbearing process. The study conducted by Ramathuba et al. (2012), 49% of adolescents were not using contraceptives and mentioned negative perceptions about contraceptives, 60% preferred condoms whereas 19% preferred injection, and 5% OC. The study showed that adolescents display a negative attitude towards contraceptives, due to lack of communication with their parents about sexual issues which increases risky sexual behaviour.

The other reason for being against the use of contraceptives was that they believed it might affect child bearing when used at an early age, whilst acknowledging their benefit of preventing pregnancy. SAW always display fear of the unknown when a new method of family planning is introduced, as if it happened when injectable were introduced they feared that they may fall pregnant despite the injected medication. Lack of information on how the medication will prevent pregnancy is the main challenge SAW are faced with in the family planning programme. SAW do not have information as to how ICM will prevent pregnancy when inserted in their bodies. That is the reason they think the device can move from the point of insertion to other parts of the body. These perceptions play an important part on the utilization of the device; hence, facilities experienced underutilization of the device.

4.3.2.1.1 Sub-Theme 2.1.1: Insufficient information about functioning of the device Implant contraceptive method to prevent pregnancy

Joubert and Gerber (2011) argued that knowledge is a very important tool for professional nurses regarding their daily work; rendering RHS including: ICM to patients and is important for the organization's evidence and development. Lack of the relevant knowledge at the workplace will affect the efficiency and effectiveness of service delivery at facilities. Majority of participants alluded that the method is still new and they lack information and experience on how it works in a human body. That is the reason they believe in information from peers and social networks as little or no information is from the health providers. Therefore, professional nurses have responsibility to develop knowledge at the workplace, ability to re-use the knowledge they developed and ability to share that knowledge with co-workers and fellow clients for effective use of ICM by SAW. SAW desire to use contraceptives that are not capable of disappointing them by falling pregnant while one is on a specific method of contraception fail both the mother and the

service provider, including the health system. Understanding of how the method prevents pregnancy bring about trust and confidence to the users (SAW) of contraceptives. Clear explanation of the functioning of ICM can enhance the use of this method by majority of women. Preparation of SAW during pregnancy through continuous information giving about the available first line effective contraceptives can enable them to make informed decisions about their choices with self-confidence.

Subsequent launching of the newly introduced method is one of the required strategies that may improve SAW's knowledge about how the device prevents pregnancy, which is the need for all women who are eager to practice birth control for their personal reasons. Effective use of contraceptive does not only benefit the users (SAW) but also includes sexual partners, families, communities and the world. The use of such effective contraceptives (ICM) which is cost effective also help in unnecessary increase of the population as these countries are already highly populated; with increased burden on the world economy. Therefore, effective use of contraceptives depends more on the understanding and knowledge possessed by SAW and their sexual partners. This information was also evident by the following facts from participants:

- Participant 1, FGD = 2 CLN = 2:

  I do not like Implanon because of fear of unknown as it is inserted into human body. I do not understand what is happening when it is remaining for a long period three years. The reason for that I think is I have not received full information about this new method since it was introduced. Nurses do not give health education like before or during the time they introduced the other contraceptives, I checked this several times.

- Participant 3, FGD = 4 CHC = 2:

  People take time to understand new developments in each and everything that they come across; I think there is fear of unknown about this method. This may also be the way these new devices are introduced to the public. You arrive at clinic you hear other saying there is a new method to prevent pregnancy but no health provider talks about it the day you visited the clinic. Sometimes you hear from a peer that the launching of the method was done at Thohoyandou meanwhile you stay very far from that area and it lead you not to have firsthand information but to relay on rumors from your peers.

- Participant 1, FGD = 2 CLN = 2:

Even me, I do not know whether it will affect my health or not, whether after removal there will be some changes in the body or not. Whether it may remain in my body for life or not, I feel afraid when I think of it even though I have not used it yet. Hmm! Sometimes rumors are true but sometimes they are not, we end-up being confused not knowing whether to use the device or not since we are not informed. Myself I am hearing this information in this interview and I am learning a lot since I just heard about the device by bits and pieces of information in different conversations with friends and peers.

- Participant 12, FGD = 2 CLN = 2:

The government might have observed that SAW are giving birth over than is expected, then they decided to bring this new method to de limit the unwanted process or this behavior of birth giving. I also see it as the method that want to reduce children who are born and consume more government money in the form of child grant. I do not know the correct numbers of population sometimes you can see as a person that the country is overpopulated more especially during the days where women are earning children grant, so this can method can maintain this population.

Samal and Dehury (2015) indicated that there is a marked increase in usage of contraceptives but in contrary very low uptake of LARC, including ICM was observed in India. The negative rumors about ICM is a very important sign that clients (SAW) who are concerned of using the device do not know how it functions in the body. This limited information about functioning of the device contributes more on the low uptake of ICM. Crankshaw, Kriel, Milford, Cordero, Mosery, Steyn and Smit (2019) announced that the idea that the public being empowered to take ownership over their own health through their participation in the development of health strategies, policies and interventions has long been recommended by international bodies and public health agencies. Public members' involvement in family planning and contraceptive issues is seen as a key component of RHS. The obstacle encountered, that hinders public members' involvement was found to be primarily unequal power relationships between these members and health providers in local health facilities.

Moustaka and Constantinidis (2010) in their topic "Sources and effects of work-related stress in nursing" argued that the daily increased nurses' workload at their workplace increases chances

of poor motivation even before nurses start with their duties in the morning. They further added that nurses are subject to decreased motivation, which arises from the physical, psychological, and social aspects of the work environment. Mkansi (2018) confirmed that youth displayed low knowledge on what an ICM is, how it works, its side effects, which served as a barrier to usage. A number of SAW do not want to use contraceptives that have numerous side effects; hence, the common contributory factor to discontinuation and non-use of ICM was considered fear of side effects. According to Crankshaw et al. (2019) the contributory factors that restricted community participation in RHS is reasoned to be lack of agreement around how this should be approached and differing definitions as to what constitutes 'community participation' and this led SAW to have little rumors or no information at all about contraceptives methods. Cleland, Ndugwa and Zulu (2011) claimed that personal attitude and fear to become unsterile are contributory factors of SAW to deny the use of modern contraceptives in the Sub-Saharan region contraceptives.

4.3.2.1.2 Sub-theme 2.1.2: Shortage of staff at primary health care facilities Implementing Implant contraceptive methods on daily basis

Shortage of health providers negatively affect the implementation of the newly introduced ICM as observed by SAW visiting PHC facilities for RHS. ICM as one of the LARC offer massive possibilities to meet the need for family planning for all SAW worldwide. Majority of SAW around the world currently have an unmet need for modern contraception, mainly in South Asia and Sub-Saharan Africa. SAW are found to be using less effective, SACM that require SAW to continually replenish their supplies of such contraceptives. SAW voiced that they fear to use ICM since it is indicated that experienced health providers must insert the device, to prevent sepsis that may occur on the site of infection or to prevent devices from falling off,. According to Jacobstein and Stanley (2013), the reason for that action is that convenient methods such as ICM are not easily accessible in most facilities due to shortage of health providers to render the service. According to Ethical Issues Related to Staff Shortages November 2012, the effects of shortages on health professionals were felt acutely by hospitals and PHC facilities globally. Moreover, these clearly supported the notion that shortage of health professionals is a major crisis in many facilities in South Africa and around the world (Vawda & Variawa, 2012).

Participants indicated that they are forced to wait for a very long time when professional nurses are still busy with their major duties. In the current study majority of participants interviewed expressed that they experienced staff shortages when they visit their respective PHC facilities for

RHS. The unavailability of the required number of professional nurses at PHC facilities clearly affected quality information to be given to SAW daily. Patients experience insufficient information about ICM as nurses are faced with different services to be rendered daily and always they seem to be overworked. Hosseinzadeh, Aghajari, and Mahdavi (2012) in their study concurred that, the most important reasons of medication errors in the health facilities was due to shortages of nursing staff, nursing burnout and high workload they are faced with. They further alluded that barriers of error reporting, the most cited barriers were management factors, fear of legal issues, inappropriate definition of medication error and inappropriate reactions of authorities concerned. This was evidenced by the following citations alluded by participants during the interview:

- Participant 5, FGD
- = 1 CLN = 1:

> *You see today only two nurses are at work do you think they can be able to give individual health education to those who will come later. You see its long we have been waiting for the services we came for; shortage of staff is another issue that hinders the use of this newly introduced method. For the fact that nurses just deny giving information about the device, nurses can do it when they are overworked as you see they are only two todays.*

- Participant 5, FGD = 4 CHC = 2:

> *Sometimes when you arrive at facility and you ask about different methods available, the nurse will just say which one do you want to use? The nurse cannot start by counselling the client about the different type of family planning methods they are rendering in the facility. This is another sign of health provider's attitude and lack of information on different methods. As clients, we are unable to say that in front of nurses as they may develop attitude towards you but one can clearly identify that.*

- Participant 7, FGD = 4 CHC = 2:

> *Yaa… that is a bad experience I have went through that some time ago and I thought may be the nurse was overworked. I observed failure of a nurse to give information about different RHS methods available in facility then clear explanation*

about method of choice. I also thought it may be due to shortage of staff because that day they were only two unlike today they are many. There is no time for counselling about method of choice as when we choose the method it seems nurses conclude you already know the method no need for giving information.

- Participant 3, FGD = 4 CHC = 2:

  I think shortage of nurses may influence the non-use of the method because when you arrive you may be told that the one who insert the device is off-duty. And that this method is new the health provider need more time to explain to the client about the advantages and disadvantages then insertion of the device. Even if the nurse is not interested in inserting the device that day he/she can say such a statement and as a client you won't know whether he/she is trained or not.

Professional nurses are also expected to work effectively through consulting patients, managing emergency cases daily, rendering RHS and completing different documents, files, forms and registers for quality assurance purposes. The PHC facilities in eThekwini District were well staffed by professional nurses according to the recommended staffing norm in the Saving Babies Report (DoH, 2005) of one professional nurse is to 30 patients per day. In contrast, in Meghalaya state in northeast India, health facilities are understaffed in such a way that very thin distribution of contraceptives is experienced by SAW due to alarming shortage of human resources (Oosterhoffa et al., 2015). In the Vhembe District, almost all PHC facilities visited for interviews complained of workplace being under-staffed due to shortage of workforce, especially professional nurses. Bester and Engelbrecht (2009) in their study in the Free State Province supported that the South African PHC services are faced with severe shortages of nurses due to high patient volumes, unpredictable work overload, movement of nurses to private institutions, to other countries and poor working conditions.

Vawda and Variawa (2012) announced that the single major barrier to attaining public health goals is the lack of adequate human resources, especially at the PHC facilities where professional nurses are also expected to run the Ante-Retroviral programme. In support of what participants said, a WHO report announced that it is widely accepted that there is serious need for health workers in many parts of the country. Shortage of professional nurses may be due to low throughput of trained nurses by universities and colleges and the increasing burden of diseases

in the country. Globally, there is an alarming shortage of skilled nurses of all categories to meet the demands of their customers, SAW and other patients (WHO, 2006).

4.3.2.1.3 Sub-theme 2.1.3: Lack of counselling about reproductive health services Including Implant contraceptive method by professional nurses

Health providers must ensure that rendering reproductive services is patient-centered approach. If patients (SAW) do not have the relevant information about a device or any type of contraceptive, they should be empowered so that they are knowledgeable about different types of methods available, including ICM: advantages and disadvantages**.** Professional nurses are the ones who quickly acknowledge that the type of method is underutilized, and then they must find out the main cause of underutilization. Professional nurses voiced out that the monthly statistics is the main tool that exhibit that the method is utilized or not. They indicated that ICM utilization rate is very low and they have never experienced shortage of stock of this device.

The limitations of modern contraceptives use were said to be due to the challenges faced by SAW, insufficient knowledge about effective and less effective methods. There is positive behaviour change after information giving since informed people are able to change and make an informed decision. A better understanding about different types of contraceptive methods is improved by information given by skilled personnel at respective health facilities. SAW are easy to follow since they are active participants in majority of programmes that run in most health facilities. Professional nurses who render RHS must have good counselling skills that will enable them to convince patients to use effective family planning methods as needed by DoH and the world.

Professional nurses are more influential, they are hands on the field of rendering these services. Public members believe in them, as they know they are informed and are the programme owners in the department. In this study, SAW pointed out that professional nurses do not spend much time with them to explain or counsel them on newly developed methods. It means that the external cues of action are not being applied in other facilities to increase effective use of methods. It is such that they do not give information, which discourages these women to dislike the method following the rumors they heard from their peers.

A skilled counsellor will indicate the benefits of using an effective contraceptive method and try to assist these women to select effective methods. Inadequate counselling promotes underutilization of contraceptives thereby promoting the occurrence of unplanned pregnancies putting a burden on the economy of the family and the country. Lack of counselling is a perceived barrier that discourages SAW to use the available contraceptive methods in health facilities. The following excerpts from participants' evidence lack of counselling in health facilities during the interviews:

- Participant 5, FGD = 4 CHC = 2:

  Sometimes when you arrive at facility and you ask about different methods available, the nurse will just say which one do you want to use? The nurse cannot start by counselling the client about the different type of family planning methods they are rendering in the facility. This is another sign of health provider's attitude and lack of information on different methods. As clients, we are unable to say that in front of nurses as they may develop attitude towards you but one can clearly identify that. Some other times when you come across such behavior of nurses' denying giving information that you need and it may also help the next person it discourages one to re-visit that facility. That is one of the reasons, you see us (SAW) moving from one facility to the other trying to look for better services, where there are nurses who may listen to you and give advices.

- Participant 2, FGD 5 = CHC = 3:

  The other thing is health providers' attitude because you ask about the method (ICM) and one will say are you interested on that thing. This is mostly done by the very old nurses, you will be told injectable are available, without explaining to you the method you asked about. I think the system is working but not that effective because if you ask a question from a person you think is an expert in the field and you do not get the answer or assistance; to me I think something is not good.

- Participant 7, FGD = 4 CHC = 2:

  Yaa… that is a bad experience I have went through that some time ago and I thought may be the nurse was overworked. I observed failure of a nurse to give information (counselling) about different RHS methods available in facility then

clear explanation about method of choice. I also thought it might be due to shortage of staff because that day they were only two unlike today they are many. There is no time for counselling about method of choice as when we choose the method it seems nurses conclude you already know the method no need for giving information.

- Participant 9, FGD = 1 CHC = 1:

  Sometimes when you arrive at facility and you ask about different methods available, the nurse will just say which one do you want to use? The nurse cannot start by counselling the client about the different type of family planning methods they are rendering in the facility. This is another sign of health provider's attitude and lack of information on different methods. As clients, we are unable to say that in front of nurses as they may develop attitude towards you but one can clearly identify that.

Stern, Bodin, Grandahl, Segeblad, Axén, Larsson, and Tyden (2015) pointed out that contraceptive counselling before starting to use a method is critical for everyone. In addition, providing the information required for informed consent is also believed to increase service satisfaction and promote adherence to the method of choice. Professional nurses must ensure that rendering the service should be a patient-centered attitude. Motivational Interview Framework, principle number one emphasizes that human behaviour can possibly change when their personal feelings are accepted and valued by health providers providing the services they need (Manthey, 2011). The name of the ICM in use and the reasons thereof must be indicated to enhance patients' understanding, hence in South Africa ICM in use is Implanon NXT (Jacobstein & Stanley, 2013). According to the study conducted in Northwest Ethiopia by Adal (2016), announced that effective counselling, close monitoring and follow-up services empower SAW to deal with minor disorders because of ICM. In contrast the study conducted by Joshua et al. (2011) found that there was no great difference between the two counselling styles, the "just try it" and "cautious"'. It clearly shows that the use of this LARC depended on the willingness of the individuals to use the method. Majority of SAW during FDG interviews indicated that nurses do not spend enough time with them, counselling is about methods of family planning. Nurses are only interested in giving the method that one requests without explaining other better methods available if any.

The constraints of modern contraceptives use were said to be due to insufficient knowledge sharing between health providers and users per the study among 1 188 married sexually active women aged 15-40 years in Nigeria (Mon, 2009). However, Stephenson et al. (2011) debated that after exposure to more information on ICM; in Zambia men and their sexual partners, who had no desire for more children took an informed decision, opted for LARC and the uptake was very high.

Stephenson et al. (2011) reported that most of the previous studies confirmed that there was a high rate of ICM removal after initial insertion of the device due to lack of counselling, unlike during the time of their study where people complied. That was demonstrated by few discontinuations of the ICM and low pregnancy report during follow-up periods. Furthermore, Mon (2009) argued that knowledge of a specific method of family planning is more limited. The study in Nigeria revealed that those who are highly educated and literally displayed a greater understanding of modern contraceptives but that did not predict future use of such contraceptives (Mon, 2009). Therefore, counselling to patients who selected ICM must be genuine and adequate to promote service utilization and client satisfaction (Jacobstein & Stanley, 2013).

Yacobson (2012) argued that the health provider during counselling must identify the correct information and appropriate practice to be communicated to the SAW prior to implant insertion. Mon (2009) also indicated that there is a positive relationship between knowledge and use of modern contraceptives in the developing countries. WHO/RHR (2011) added that characteristics of the device must be discussed with the patient to drive out the falsehood and mistaken beliefs about implants. For example, there are myths that ICM may move around the body or cause any kind of diseases. Professional nurses to inform SAW that they are not forced to use implant for its full-labelled period for them to receive the next one (WHO/RHR, 2011). Moreover, information should be communicated using familiar local language for the women to understand the expectations and know how to put such information into action (WHO/RHR, 2011). From raw data gotten from interviews conducted, the following theme and its sub-themes emerged from main theme 2, presented in (**Table** 4.9).

4.3.2.2. Theme 2.2: Description of the reasons that influence poor uptake of Implant Contraceptive method

Contraceptive use is not only decisive to directly improve reproductive health outcomes of SAW, but is also vital for improvements in health, schooling and economic outcomes. Despite those facts there are reasons underlying, which may negatively influence the use of contraceptives, LARC. These issues may include inadequate marketing health providers, availability of LARC and lack of discussions on sexual and reproductive health issues between mothers/guardians and adolescents. The use of contraceptives at health facilities may increase due to strong family planning programmes implementation in a form of marketing strategy. That can be possible by using available networks in both rural and urban villages that may reach several numbers of SAW with unmet need for family planning (Letamo & Navaneetham, 2015).

Table 4.9: Description of the reasons that influence poor uptake of Implant contraceptive method

Theme	Sub-themes
2.2 Description of the reasons that influence poor uptake of ICM	2.2.1 Inadequate marketing of ICM as a new method by professional nurses 2.2.2 Availability versus lack of ICM at PHC facilities determine the uptake 2.2.3 Lack of discussions on sexual and reproductive health issues between mothers'/guardians' and adolescents influence uptake of ICM

4.3.2.2.1 Sub-theme 2.2.1: Inadequate marketing of Implant contraceptive method as A new method by professional nurses

Marston and Church (2016) pointed out that it is deemed possible that publicity of effective contraceptive methods might help improve knowledge and reduce failure rates for SAW using contraceptive methods. Beekle and Mccabe (2006) suggested that SAW and their sexual partners should be supported, encouraged to enter and complete formal education which is essential in bringing about a cultural and social change in attitude towards social value of effective contraceptive use. Thus, such effort will enable SAW and couples to obtain full and correct information about the methods they intend to use (Marston & Church, 2016).

According to Mastor et al. (2011), ICM is increasing in popularity worldwide since its insertion and removal is much easier and faster than with Norplant. The preceding research studies have revealed that complications linked with ICM insertion and removal are uncommon in the hands of

trained health professionals acquainted with the techniques. Several research studies put forward that consistent health education is an effective marketing strategy that can address the imbalance in decision making about contraception and the role of SAW in societies (Beekle & Mccabe, 2006).

In the current study, SAW complained that the launching of ICM when it was introduced in 2014 February did not cover furthest areas, which receive services from clinics and mobile clinics. Some SAW who were fortunate during the launching of the new device said it was only done at CHC and responsible staff promised them that the clinics would also be visited to cover majority of method users. Thus, SAW indicated that this method is not well marketed by professional nurses at health facilities. They remarked that in the olden days when they visited clinics and CHC pamphlets were found pasted which encouraged them to enquire about the displayed methods.

- Participant 2, FGD 5 = CHC = 3:

  "I have never seen some pamphlets showing this ICM, previously there were always pamphlets showing different methods of family planning available in clinics. I ask myself what type of method is this one not displayed for us to see that is why we forget about it and use the old methods."

- Participant 2, FGD 5 = CHC = 3:

  ***"**Yaa…! You are correct this method is not marketed like other methods as it used to be at clinics. Previously we used to admire things on the pamphlets, even in this facility there is no ICM pamphlets and I have never seen it in any facility. So something has changed in this department because they taught us they advertise their services the next they advertise no more but new things are being introduced. In this way people visit and leave the clinics without knowing that there are new methods incase health providers are busy or short staffed and forget to inform patients."*

- Participant 2, FGD 5 = CHC = 3:

  "*Health providers do not always talk about ICM as one of the best methods of family planning. Nevertheless, I think maybe they are not all trained you hear them referring a client to someone else which I heard and believed that training is needed. Yes! I support that, I once asked during health education giving at one*

facility and the health provider said she is not very sure about that method, only if Nurse X was around would teach us about it."

- Participant 2, FGD 5 = CHC = 3:

  "Seconded, I was once asked by health provider that do you know the device. I said no, so she said to me why do you want to use the thing that you do not know? I concluded that the nurse did not have information about the method is not interested on rendering this type of service."

4.3.2.2.2 Sub-theme 2.2.2: Availability versus lack of Implant contraceptive method at Clinics determine the uptake

Availability of medication at health facilities is an essential point that needs to be followed up all the time by professional nurses who render multiple health services. Of all the facilities visited by the researcher only one facility was found to have lack of ICM but the promise was that the stock has been ordered. They also requested assistance from the nearby PHC facility where they were promised to get it the following day. Mkansi (2018) pointed out that in Mali, modern contraceptive methods were available and the problem was that the services were considered inaccessible due to distance to the health facilities.

SAW felt that RHS catered principally for those who were married; and the other barrier for not using the contraceptives was negative attitudes displayed by services providers. Out of five PHC facilities visited, four facilities had enough stock for the month. Professional nurses indicated that they never experienced shortage of the device since its introduction in 2014. The study called "Knowledge, attitude and practice of women regarding contraceptive implants, in Odendaalsrus, Lejweleputswa District, Free State Province" found that all health facilities had enough ICM during the period of study (Makola, 2018). The following quotations mentioned by participants during interviews confirm availability and lack of medications (ICM) in the PHC facilities:

- Participant B, Prof/N CLN = 1:

  "There are no challenges of availability of ICM in this facility except that the method is underutilized by SAW according to the monthly reports observed. The other challenge is that our patients are not informed about the new ICM. The method is always available, we experienced shortage of other methods in the previous three

months but ICM was readily available. I think the reason for availability of this device is that it is not a busy method like other SACM and injectable. It is not a busy method, as we insert one to three patients per month, not more than that."

- Participant 10, FGD 1 = CLN = 1:

"Availability is the problem as after removal of the device I opted to be inserted the new one, but it was said that it is not available. It seems as if the health providers did not have confidence on the device because they asked each other about availability. They (health providers) were even not sure if it was to be inserted immediately post removal of the device. Even though I did not know the logistics in the facilities but their hesitation shown that something is wrong, they were not fully informed. I doubted that the device could be available they may be displaying the negative attitude. Nevertheless, I ended-up not getting the service as needed.

- Participant C, Prof/N CLN = 3:

"*Yes! No shortage of this device has ever been experience since its introduction in 2014. I heard no report about shortage of this device; even now, we have enough stock in facility. The method is always available, we experienced shortage of other methods in the previous three months but ICM was readily available. I think the reason for availability of this device is that it is not busy methods like other SACM and injectable. It is not a busy method as we insert one to three patients per month, not more than that."*

- Participant F, Prof/N CHC = 1:

"*The method ICM is accessible, is always available and the facility is within walking distance for community it serves. WhatsApp once reported stock availability of ICM and rarely could we observe one facility not having the device; this justified constant availability of the drug in health facilities. Even those coming from far using transport to reach this clinic for different services, they also access insertion of ICM if needed."*

Participants (SAW) who have never used the device indicated that they are not sure about the availability or shortage of ICM and that they have never asked about it. The reason for not asking was that they were not intending to use that method of RHSs due to fear of rumors of the side effects. Some SAW were very positive about the device in such a way that they always ask its availability when they visit the facilities.

- Participant 14, FGD 2 = CLN = 2:

  "*I am not sure of availability of this ICM at facilities because we have never requested it as we are using other types of contraceptives. One can just think it is not available mean while the method is available in numbers in the facility. We do not ask because we dislike the method generally."*

- Participant 4, FGD 3 = CHC = 1:

  "*The device is available**;** I am sure of availability of this ICM at facilities because when we ask even when we do not want to use it health providers always say it is available. Even today, they said it is available."*

- Participant 3, FGD 3 = CHC = 1:

  "Implant contraceptive method is always available because it seems majority of SAW are not using it due to lack of knowledge, it may remain available at facilities due to underutilization."

4.3.2.2.3 Sub-theme 2.2.3 Lack of discussions on sexual and reproductive health issues Between mothers/guardians and adolescents may influence uptake of Implant Contraceptive method

Knowledge about sexual and reproductive health issues is essential to the health and wellbeing of individuals, families, and communities. Contraceptive choice and its effective use is essential to promote the health of individuals and enable development**.** Contraception has direct health benefits, which include prevention of unintended pregnancy, more especially for adolescents as it results in disrupting their studies and future development. Mistimed adolescents' pregnancies introduce negative impacts in some families, subsequently, increase physical complications, maternal mortality and morbidity due to lack of knowledge, lack of guardians /parents' support and late seeking of medical assistance. The regular discussions on sexual and reproductive

health issues between mothers/guardians and adolescents may influence adolescents' behaviour to make free and informed choices about effective contraceptive use, to prevent mistimed pregnancies.

Moreover, in the current study majority of mothers (SAW) clarified that they find it difficult to share sexual and reproductive related issues with their biological children, as they too, were not taught by their parents. This clearly indicates that adolescents do not have opportunity to share sexual and reproductive information with their mothers/parents. Khalila, Alzahrani and Siddiqui (2018), who clarified, confirmed this, that the unmet need for family planning is higher among young SAW less than 29 years and older age group, greater than 40 years. The unmet needs for spacing and limiting show the different age pattern as expected. The unmet need for spacing is intense in the younger ages.

Adolescents hear and get wrong or right information from social networks, media and friends where failure to consult for clarity mislead them. They (adolescents) also get more information after giving birth of the first child when now parents/guardians fear that the girl may repeat the previous mistake. Ramathuba (2012) confirmed that sexual teaching and related information were not made available to the adolescents until they were faced with the trauma of mistimed pregnancies. Ramathuba (2012) voiced out that cultural principles within our Black societies deny adolescents from learning more information about sexuality, because culturally parents/guardians/mothers are not yet ready to deliberate sexual issues with their children. That is supported by participants' quotations during interview sessions in the current study, which state:

- Participant 5, FGD = 2 CLN = 2:

> *During my teenage time, we were never allowed to use family planning methods. Our parents could not talk to us about pregnancy prevention as they thought it would encourage youth to practice sexual activities before we are fully grown up. Therefore, it is also difficult for me to talk about family planning issues to my daughters and just believe that they will hear this information at clinics and media. We feel it is a sensitive issue to tell our children, we are not confident enough to talk about family planning with them as we think it may have future challenges in their lives. But, I learnt that it is difficult to accept and is hurting when your child come home being pregnant as you turn to think of the information you know about family planning methods, and it could have helped. I should have told my daughter*

but it is difficult for me to start. We emphasize when the daughter has given birth being afraid that she might fall pregnant again.

- Participant 9, FGD = 2 CLN = 2:

  Inadequate parental support, for young girls whose parent's knowledge is insufficient, they deny that ICM is a foreign body is not good at all. Some say this may affect the fertility of young people in the future. I think giving health education to teenage girl's parents to enhance support for those who may indulge in early sexual active. Some parents turn to say it is not good for a girl to use family planning method before she has given birth. People have the myth that using contraceptive method to young girls affect fertility in the future leading one to be barren.

- Participant 10, FGD = 3 CLN = 3:

  The other thing that causes poor support by parents is that they do not have knowledge on sexual issues. They never communicated sexual and reproductive issues with their biological children. Even to those who are learned, is still a challenge to talk about sex and family planning related matters and guidance to their kids. Some parents think they will be teaching their children to indulge on sex at an early age. It is difficult to teach someone about the information that you were never taught, you just found out by yourself.

Tavrowa, Withersb and McMullenc (2012) pointed out that irrespective of the high premarital sexual activity (estimated at 50%) among youth, the most serious problematic issue that occurs in the Sub-Saharan African family planning programmes is their abandonment of adolescents' reproductive health needs. Masemola-Yende and Mataboge (2015) emphasized that insufficient information and myths about contraception predisposes majority of adolescents to mistimed pregnancies, which may be coupled with unpredictable complications associated with a variety of obstetric, social, educational and health-related problems that may arise.

Phuhongsai and Pinitsoontorn (2019) asserted that special attention must be placed on changing undesirable social values and norms to promote adolescents' information on sexual and reproductive health issues. These efforts can be done by raising awareness, acceptance and

support for youth-friendly sexual and reproductive health education services. Major factor in culture, is that many adolescents do not use contraceptives because if found with contraceptives it could lead to school expulsion or severe parental disciplines in other areas of Kenya (Oosterhoffa et al., 2015). According to the physician in Kenya, adolescents who came to the health facility with their mothers/guardians hardly left with a contraceptive method, possibly due to familial disapproval. According to Oosterhoffa et al. (2015) in many countries, even with those contraceptive technologies that are available, contraceptives remain inaccessible to certain groups of SAW, such as adolescents and widows. It was reported that there should be a variety of driving mechanisms to ensure that the principles agreed upon on educating adolescents, communities and stakeholders on sexual and RHS issues are being practiced and adhered respectively.

In Thailand, they asserted greater parental participation on the lives of children and put in place strict control on disseminations of pornography, which influence youth to get involved in sexual engagement at an early age (Phuhongsai & Pinitsoontorn, 2019). The study in Kenya revealed that the individuals (adolescents and widows) are not supposed to be sexually active as deemed correct by their societies and they are not allowed to use contraceptive methods to prevent unintended pregnancies (Oosterhoffa et al., 2015). This is a clear cut-across message that mothers/guardians and societies at large are not supporting these groups in utilization of family planning programmes due to their social norms as deemed correct. This was supported by Agbanyo (2018) that one of the major barriers that prevent adolescents from utilizing family planning methods was fear of being seen by parents or friends due to lack of backing from their families.

The study findings by Agbanyo (2018) Adaklu District in Ghana disclose that familiarity of contraceptive among in-school adolescents was 88%, but very few (18%) had knowledge of more than one contraceptive method. This shows that the level of understanding possessed by adolescents is limited, could affect the correct and effective use of contraceptives since their choice of contraceptives use may be limited. The study findings conducted by Phuhongsai and Pinitsoontorn (2019) found the report from parents and stakeholders that adolescents have poor listening skills and only believe information they hear from their friends and peers, which misleads them. These adolescents' negative behaviours diminished the required, critical sexual and health communication between them and their parents/mothers/guardians as deemed correct.

Crankshaw, Kriel, Milford, Cordero, Mosery, Steyn and Smit (2019) pointed out that the perception of the quality of contraceptive service and information provision powers customers' satisfaction on the choice and use of contraceptive or health services. Thus, quality of care improvement at health facilities can increase the effectiveness of sexual and reproductive health services among adolescents and young SAW.

4.3.2.3 Summary of Main Theme 2

The use of effective contraceptive methods (LARC) dramatically has an imperative role in reducing unintended pregnancy by providing access to effective contraception; hence, the main challenge faced by both SAW and their respective health providers is insufficient knowledge. Knowledge of different contraceptive methods is key to usage of the services. Results have shown that lack of knowledge features prominently as a major challenge and obstacle to the use of family planning methods. Ngome and Ama (2012) clarified that the absence of knowledge on which contraceptives to use and associated risks means that most SAW may not have known about the available new methods at the health care facilities.

Professional nurses' insufficient knowledge about newly inverted contraceptive method as indicated by both participants (SAW and health providers) remain a common challenge faced by service users. The difference between high levels of unintended pregnancy and high levels of contraceptive use globally are due to several factors, including lack of contraceptive knowledge leading to poor access, resulting in contraceptive failure (Mavranezouli, 2009). SAW alluded in the current study that they lack information on how the device functions in a human body, all they have are the rumors they heard from friends and peers, which instilled fear leading to underutilization of the device.

Preparation of SAW during pregnancy through continuous information giving about the available first-line effective contraceptives can enable them to make an informed decision about their choices with self-confidence. Mgobhozi (2017) debated that health providers play an essential role in the provision of high quality birth control methods, which include LARC, SACM and barriers to contraceptive use. Subsequent launching of the newly introduced method is one of the required strategies that may improve SAW's knowledge about how the device prevents pregnancy, which is the need for all women who are eager to practice birth control for personal reasons. Accessible, acceptable and accurate information that may assist SAW, to accomplish their health-related needs, clear communication about family planning methods, always by professional nurses may

help. Health providers must ensure that rendering the service is patient-centered approach. Patients should be empowered so that they are knowledgeable about the ICM: advantages and disadvantages. Vhembe District to make certain that professional nurses undergo sufficient short course training in relation to counselling and insertion of ICM, to improve their counselling skills. Professional nurses who render RHS must have good counselling skills that will enable them to convince SAW to use effective family planning methods.

Eliason et al. (2013) indicated that the use of modern contraceptive methods remains low in Sub-Saharan Africa thereby increasing the likelihood of unwanted pregnancy and disturbing life programmes of most SAW in the world. Effective marketing of LARC through different ways of publicity can make newly inverted contraceptive known and used by customers (SAW) in the communities. Launching of newly inverted contraceptives in health facilities to enhance knowledge for both users and providers of the services in the communities. According to the information by SAW during interviews, they indicated both availability and lack of ICM in the facilities they visited for RHS. In contrast, only one PHC facility visited found to have none of the devices due to shortage of ICM. Lack of contraceptives interferes with proper utilization of family planning methods. Facility responsible staff members must ensure that there should always be enough stock to cater for their customers.

Majority of mothers (SAW) said that they find it difficult to share sexual and reproductive related issues with their biological children, as they too, are not experienced about this information. Information on sexual and reproductive health issues between mothers, parents and guardians should be encouraged in the communities to promote gaining information for youth. Ngome and Odimegwu (2014) added that sexual and RHS intervention should be aimed at improving contraceptive use by SAW and should focus on both individual and community factors. On that note, knowledge is power and awareness about sexual and reproductive health issues is essential to the health and wellbeing of youth, individuals, families, and communities at large.

4.4 Summary

Chapter 4 focused on the presentation and discussion of research findings. There were 2 main themes, 5 themes and 16 sub-themes. Those themes were discussed in detail incorporating information found from both participants, (SAW and professional nurses) and placed in proper viewpoint with the literature. Information given by both participants were contextualized in terms previous research studies related to the topic understudy. The next chapter is dedicated to the

development of the model to promote the use of implant contraceptive method in Vhembe District, Limpopo Province.

CHAPTER 5

CONCEPT ANALYSIS

5.1 Introduction

Chapter four outlined data analysis and the discussion of research results. The discussion encompassed factors which contribute to poor uptake of ICM by SAW, factors which may contribute to expected uptake of ICM by SAW, the strategies to be used to promote required uptake of ICM by SAW, perceptions of SAW on the use of ICM and the reasons that influence poor uptake of ICM. Analyzed data grouped into 2 main themes, 5 themes and 16 sub-themes illustrated in (**Table** 4.4). This chapter discusses the concept analysis and model development that could promote the uptake of Implanon (ICM) by SAW at PHC facilities in Vhembe District, Limpopo Province as phase two of this study.

Phase 2 is compatible with objectives four and five: To conduct a concept analysis of core-concepts identified and to develop a model to promote the use of Implanon (ICM) by SAW. To achieve objectives four and five data discussed in Chapter 4 was used and after analysis, promoting the use of ICM emerged as a major concept. Reason for conducting concept analysis was to provide a better understanding of the core concept **'promote the uptake of Implanon'** by employing the concept analysis method described by Walker and Avant (2014). According to HBM, promoting the uptake of contraceptive use can be made possible by interacting with SAW perceptions of pregnancy consequences and decision making to influence contraceptive use (Hall, 2012). In this chapter, the researcher clears up and distinguishes the definition of the concept "***promote the uptake of Implanon"*** to share the significance of this concept with the readers and participants.

Walker and Avant's (2014) framework for concept analysis was used to analyze the concept in the current study. The eight steps were followed to spell out and distinguish the definition of the main concepts identified as follows: select a concept; determine the purpose of analysis; identify all the uses of the concept; determine the defining attributes; contrast the model case; contrast additional cases, borderline, related, contrary, invented and illegitimate cases; identify antecedents and consequences; and define empirical references.

5.2 The objective

To analyze the concept "*promote the uptake of Implanon"* following the eight steps in Chinn and Kramer (1999 cited in Barker 2013) and Walker and Avant (1995 cited in Santos, Souza,

Gutiérrez, Maria, & Barros, 2013) method. The key aim of the present concept analysis was to provide a definition of "*Promote*, *Uptake and Implanon"* that added more understanding of their use within the family planning programmes in health care facilities and provided an operational definition for future rendering of RHS.

5.3 Concept Analysis

Concept analysis is a formal, difficult process by which an identified concept is explored, clarified, validated, defined and differentiated from similar concepts to inform theory or model development and improve communication (Xyrichis & Ream, 2008). It can be approached by either using data from qualitative research, quantitative research or literature review or even a combination of the three. In this study, a combination of the themes and concepts from the qualitative research and the literature review was used.

According to Walker and Avant (2014), concept analysis was cleared as a plan that permits researchers to scrutinize the qualities or physical characteristics of a concept. On the other hand, the analysis itself should be thorough and more specific, the product is always uncertain. The purpose and use of concept analysis is to differentiate the defining qualities/physical characteristics of a concept from its irrelevant qualities (Walker & Avant, 2014). In the current study, the researcher employed the eight steps in the Walker and Avant technique to clarify and distinguish the definition of the main concepts because it seems to be the most influential model in nursing science.

In addition, the researcher employed the Walker and Avant's technique in order to reduce exact theoretical and operational definitions in the study. These helped the researcher to clarify nursing terms that are common in the current study. Furthermore, concept analysis also assisted the researcher to develop an instrument and nursing diagnosis (Chinn & Kramer, 1999 cited in Barker, 2013; Walker & Avant, 2014). The concept identified was from data gotten from SAW, professional nurses and literature review. There is this myth that there should be no more children in South Africa as the country seems to be over populated due to poor birth control, hence introduction of Implanon (ICM) in 2014. Majority of women who do not use ICM believe that even after removal of the device they will no more be giving birth (sterile). To solve the situation the core concept was "*promote the uptake of Implanon".* Concept will be analyzed following these steps:

- selecting a concept

- determining the purpose of analysis
- identifying all the uses of the concept
- determining the defining attributes
- contrasting the model case
- contrasting additional cases, borderline, related, contrary, invented and illegitimate cases
- identifying antecedents and consequences
- defining empirical references

5.3.1 Selecting a concept

Concept selection is deemed the most difficult step that should be done wisely to dodge irrelevant terms that may be difficult to define (Walker & Avant, 2014). Model development is the process that jumps with selecting a concept for analysis. Some authors have specified that concept selection should reflect the topic or the researcher‘s greatest area of interest (Nuopponen, 2010; Walker & Avant, 2014). Throughout the process of intermingling with the research findings, it appeared that SAW failed to utilize ICM effectively as required by the DoH. The main reason for not utilizing contraceptives according to HBM was fear of ICM side effects, which are the negative treatment consequences (Jones et al., 2015).

In addition, health providers insufficiently promoted the use of ICM by SAW; they failed to use cues of actions to motivate SAW. All these were found to be aggravated by health providers' lack of training and lack of confidence in inserting the device, perceived barriers as indicated by Jones et al. (2015) was mentioned during interviews, SAW's fear of side effects, lack of information on how the device functions, failure to effectively manage side effects of ICM. Henceforth, the purpose of the current study was to promote the uptake of ICM by SAW in Vhembe District, Limpopo Province.

In the current study, the researcher selected a concept from the topic and area of interest related with the researcher's clinical area. The researcher selected the concept "*promote the uptake of Implanon"* as the key of the current study. The concepts selected are the main keys to the participants' real life experience choosing effective LARC at PHC facilities on family planning programmes. Participants displayed different understanding about ICM, including insertion, removal, side effects and future experiences that may be encountered after the use of the device.

The low uptake of ICM had effects on both providers who are not doing well on promoting the use of the device and users (SAW) who have an unmet need for family planning in the presence of this highly effective LARC. Health providers have an essential role in the provision and promotion of the use of ICM, through interacting with SAW including community members.

5.3.2 Determining the purpose of analysis

Chinn, Kramer (1999 in Barker, 2013), Walker, and Avant (2014) stated that the purpose of concept analysis is to set boundaries to prevent being hopelessly lost in the process. The concept analysis is done to better recognize how the term "*promote the uptake of Implanon"* is perceived and used. Dictionary definitions sought from various English and medical dictionaries. As this is a three-word concept, the words 'promote, uptake and Implanon' are to be explored independently.

In this study, the researcher determined the purpose of concept analysis as follows:

- To differentiate between ordinary and scientific usage of the same concept.
- The analysis determined the meaning of the concept, the usefulness, applicability and effectiveness of the key concept "promote the uptake of Implanon" in the family planning programmes.
- To clarify the basic qualities, attributes and purpose of an existing concept, "*promote the uptake of Implanon".* Moreover, concept analysis is used to define a term for subsequent research or to examine how a concept was used within the current literature or in actual clinical practice (Chinn & Kramer, 1999).
- To develop an operational definition, or something like the concept "*promote the uptake of Implanon"* that will help in the development and description of the model (Walker & Avant, 2014).
- To define the meaning of a concept "*promote the uptake of Implanon"*, its attributes and the meaning of the terms related to it that will help to create/construct substantive grounded model of concept "*promote the uptake of Implanon"* (Chinn & Kramer, 1999 cited in Barker, 2013).

5.3.3 Identify all the uses and characteristics, or connotations of the concept

This is the third step in concept analysis. It is deemed important to identify all uses of a concept when collecting first-hand data for the analysis (Walker & Avant, 2014). Therefore, the researcher cleared up the concepts using dictionaries, thesauruses and literature control, to support further understanding. In the current study, the researcher operationalized concept "*promote the uptake of Implanon"* to guide the discipline so as not to lose useful information (Chinn & Kramer, 1999 cited in Barker, 2014). The search is not limited to nursing and medical literature (Walker & Avant, 2014). A literature review assisted the researcher to support and validate the ultimate choices of the defining attributes. The concept "***promote the uptake of Implanon"*** has three elements: *"1. promote 2. Uptake 3. Implanon".* The three elements of the concept will be described individually.

5.3.3.1 Definitions and Uses of "Promote"

The word promote originated from the Latin word "**promotus**" which is the past participle of "**promovere**", meaning, "To move forward". **Pro-** means forward, **Movere** means move (Collins English Dictionary, 2014). In the English language, the term **"*Promote***" commonly used in several backgrounds, medical and non-medical. In non-medical backgrounds *"Promote*" is used with reference to people being moved to higher positions in different organizations, education, chess and business/marketing (Collins English Dictionary, 2014; K Dictionaries, 2017). According to HBM promote will mean to awaken or encourage SAW to be aware of the perceived benefits of the effective LARC in preventing unintended pregnancy. Promote is a verb, which means to help something to happen or develop. An advancement of a person or group of people from a lower to a higher position motivated by hard work or higher qualifications (Hornby, 2015).

- To help sell products or services or to make it more popular by advertising or offering it at a more special lower price or free of charge, to increase uptake of ICM device by SAW.
- To promote may also mean to encourage people to like, buy, use, do, or support something or to raise someone to a higher position (Hornby, 2015).
- To encourage retention of ICM for SAW to keep the device for the prescribed period.

The concept promote was chosen by the researcher because professional nurses work under this concept (word) daily. Every service that they render needs to be promoted for users to understand and then, utilize the service. Promote literally means to raise something higher than before (Delahunty, 2009). The definition is applicable to health providers who are expected to do greater or better, in promoting ICM which is a very effective method in preventing unwanted pregnancies.

Giving information by health providers at the clinics/villages social gatherings about any services rendered (RHS) in health facilities is to stimulate people to utilize that service. When launching campaigns, daily giving health education, counselling of, and sharing new information with patients fall under advertising the services which are rendered and that is to encourage the use of such services. Additionally, concept promote is used all over the world at different companies, businesses' and schools. For instance, at schools, passing students are promoted each year to enter a higher grade. In chess, the verb" promote" is used when a pawn is exchanged for a higher-ranking piece.

In either of these backgrounds, the word "promote" means when people or a person is being moved to a higher or more powerful position, higher level or status, or higher popularity. The researcher selected this concept "promote" as it is frequently operationalized in the literature and it is continuously applied in the nursing profession. Health promotion is more frequently used in the medical and nursing disciplines and is effective in informing public members about new developments or new products. WHO defines promotion as the process of enabling people to increase their control over and improve their health? The word "promotion" is a noun derived from the concept "promote", referring to an act of supporting or stimulating something to happen or to take place in the desired manner or way (Collins English Dictionary 2014), in this study, the effective use of LARC (ICM) will be promoted.

The Health Belief Model is one of the theories that agree that people's health can be supported by enhancing or encouraging them to participate in favorable health behaviour (Jones et al., 2015). Therefore, in this setting, the concept "promote" indicates encouragement of a positive health related behaviour by confidently influencing factors of behaviour change. Certain health promotion theories that are thought to influence human behaviour change include: Pender's Health Promotion Model (Pender, Murdaugh, & Parsons, 2011), the Social Cognitive Theory (Bandura, 1998), and the Theory of Reasoned Action (Fishbein & Ajzen, 2010).
Frost, Zuckerman, and Zuckerman (2008) identified eight main components of behaviour change, which are dealt with in most of these theories of which HBM believed that, these components can be grouped into three main categories, namely individual perceptions, modifying factors, and the likelihood of action. In this context, "promote" necessitates ensuring positive perceptions and enable environment (modifying factors), which will boost the likelihood of acting, in this case the "uptake" of ICM. Moreover, in this study promote means to stimulate and encourage SAW including community member to understand and use ICM as desired by PHC facilities.

Synonyms for the concept "*promote"*

Its synonyms include:

Encourage, advance, advertise, progress, upgrade, forward, further, aggrandize, boost, heighten, improve, lift and uplift (Merriam-Webster Dictionary Online, 2019).

5.3.3.2 Definitions and Uses of "Uptake"

The term "*uptake*" comes from the verb "*take up"*. Formerly the word *"uptake"* is a combination of two separate terms, "up" (adv.) + "take" (verb). "Up" means towards a higher place, value, price or position (Oxford English Dictionary Online). It may also mean "into consideration or attention", "into possession or custody" or "in or into storage" (Merriam-Webster Dictionary Online, 2019). "Take" means "to earn or gain into possession" or "be paid for or to accept ownership of something". Then one can define "uptake" as the action of earning, drawing up, accepting responsibility, absorbing or making use of something that is available or on offer (Collins English Dictionary, 2014; Oxford English Dictionary Online; Webster's New World College Dictionary, 2010). With this general meaning, the term has a wide range of uses in different contexts, especially in biomedical sciences, education and learning in building and construction.

According to Merriam-Webster Dictionary Online (2019), the medical definition of "uptake" refers to the absorption or taking in of substances by bodily organs or living organisms, food minerals such as glucose and its permanent or temporary retention. In education and learning setup the word "uptake" means ability to learn new things, to understand, comprehension or psychological grasp what is happening or taught. Medical definition of uptake is an actor instance of absorbing and incorporating something especially into a living organism, for example uptake of water by tissues or cell (Dictionary.com, 2017; Merriam-Webster Dictionary Online, 2019). In construction, an uptake is a ventilating shaft or pipe, or a passage or pipe for carrying or drawing up smoke or air (American Heritage Dictionary of the English Language, 2017; Webster's New World College Dictionary, 2010). Therefore, this means "uptake" has a universal association of absorption or utilization of something, in this situation effective uptake of LARC (ICM).

During the interviews, ICM utilization rate or reported numbers by PHC facilities visited confirmed to be low by professional nurses, even though there are no specific rates or numbers expected. The utilization rate was said to be low as compared to initial rate or numbers in 2014 (**Table** 1.1) during rollout of ICM (Vhembe District, 2014-2017). In the current study, uptake will refer to ability

of SAW to use the device like other family planning methods. The discontinuation of ICM before the prescribed period has been reported is higher than expected due to side effects, such as bleeding nuisance. In the current study, the expected uptake of the device will also be reflected by increased retention of the device for the prescribed period. Effective use (uptake) of ICM (Implanon) will help lower the discontinuation rate of the device before prescribed time, as SAW will take informed decision. When SAW are empowered and assisted to manage the problematic side effects they will learn, understand and comprehend new information about ICM that will enable them to keep the device as prescribed.

Synonyms for the concept "*uptake*"

Consumption, ingestion and expenditure (Merriam-Webster Dictionary Online, 2019).

5.3.3.3 Definitions and Uses of "Implanon"

Mastor et al. (2011) defined Implanon as implant contraceptive method, a single-rod implant (4 cm long, 2 mm in diameter) containing a core of etonogestrel (3-ketodesogestrel) 68 mg. The single-rod is inserted into a human body where it realizes measured medication, which prevent pregnancy through inhibiting ovulation within one day of insertion, and provides effective contraception for up to three years. Petro (2017) defined Implanon as subdermal hormonal contraceptive, which is a single-rod that provides up to three years of protection from pregnancy. The device inserted subdermal and deposited into a human body, in the inner upper arm and starts releasing medication as measured to prevent unintended pregnancy. This method is easy and convenient with no daily use or frequent follow-up.

Tadesse, Kondale, Agedew, Gebremeskel, Boti and Oumer (2017) defined Implanon as another type of Reversible Contraceptive and extremely effective at preventing pregnancy with a clinical failure rate of less than 1%. Its main mechanism of action is ovulation suppression, augmented by increased cervical mucus viscosity that hinders the passage of spermatozoa and alters the endometrial lining. The researcher chose the concept Implanon, as it is the real name of the Implant contraceptive method utilized in South Africa. The single-rod etonogestrel-containing implant (Implanon NXT, South Africa) released in SA in 2014. Implanon NXT is marketed internationally as Nexplanon. Compared to the original Implanon, the new Implanon NXT contains barium sulphate, making it visible on X-Ray (Adeagbo, 2017). Implanon is a progestin regularly used as a temporary contraceptive for animals and human beings to prevent pregnancy (Lemmens, 2018).

Implanon NXT is a contraceptive implant preloaded in a disposable applicator. The implant contains 68 mg of the active substance etonogestrel. Etonogestrel is a synthetic female hormone resembling progesterone. A small amount of the hormone etonogestrel is continuously released into the bloodstream for three years. The rod itself is made of ethylene vinylacetate copolymer, a plastic that will not dissolve in the body. Implanon NXT prevents pregnancy in two ways:

- It prevents the release of an egg cell from the ovaries (ovulation)
- It causes changes to cervical mucus that makes it difficult for sperm to enter the womb.

Thus, Implanon NXT protects SAW against pregnancy for a period of three years.

Advantages

- No worry about taking a tablet each day; the implant is replaced every three years.
- Implanon NXT is good for SAW who do not tolerate oestrogens.
- Implanon NXT may be used by breast-feeding SAW.

Disadvantages

- Menstrual bleeding may change and become absent, irregular, infrequent, frequent, prolonged, or rarely heavy. The bleeding pattern that SAW experience during the first three months generally indicates future bleeding pattern.
- Rarely, the implant moves from its original position, this may complicate removal.
- If Implanon inserted incorrectly or not inserted at all, protection against pregnancy may fail.
- Implanon NXT inserted and removed by trained professional nurse or doctor and a small scar may remain.

Definition of the combined concept *"promote the uptake of Implanon"*

Theoretically, the concept "promote the uptake of Implanon (ICM)" can be defined as forward-thinking process in, which professional nurses or health providers must be vigorously involved in advancing the health of SAW by changing their perceptions (way of thinking) about ICM through empowering/informing them, facilitating accessibility and maintaining availability of ICM and giving SAW constant support in PHC environment. This process promotes positive awareness about ICM, acceptance of ICM, perceived-efficacy and promotes uptake of ICM through increasing insertion of ICM at PHC facilities by skilled professional nurses or health providers.

These may improve retention of the device up until the prescribed period; hence, preventing unintended pregnancy lowering the rate of unsafe abortions or unintentional birth rate. **Figure** 5.4: display combined concept "***promote the uptake of Implanon (ICM)".***

5.3.4 Determining the defining attributes of the selected concepts

Consequently, the researcher proceeded with the process of defining conceptual meaning by using multiple resources from literature review without restricting search from nursing and medical contexts (Walker & Avant, 2014).

5.3.4.1 Defining the attributes of the concept "promote"

Figure 5.1: Attributes of the concept "promote"

Promote	**Attributes**
	• Initiate • Support • Knowledge • Motivation • Trained staff • Favourable work environment • Increase popularity • Increase utilisation • Enhance • Facilitate • Positively • Influences • Individual perceptions • Perceived self-efficacy • Empowerment

There are important characteristics/attributes of the concept ***"promote"*** which take account of knowledge, motivation, human resources, support and favorable work environment (Merriam-Webster Dictionary Online, 2019). Knowledge and motivation are vital attributes for the facilitation of promote. The health providers/professional nurses need theoretical knowledge gotten from trainings and in-service updates which will build-up their experience for them to achieve promotion of something or action to happen, in this study, uptake of ICM promoted at PHC facilities.

The work environment, PHC facilities should be conducive, free from threats to allow them to talk to the community members and SAW visiting their facilities for RHS to enable ***"promote"*** to take place. Continuous communication with public members will promote the increase popularity of this LARC. Active facilitation of the information related to ICM may boost patients (SAW) to volunteer on their own to initiate the effective use of the device promoting the utilization. Such activities help to reduce perceived barriers encountered by SAW and clarify the existing misinformation that prevail amongst peers, friends and relatives. Every individual need to be motivated in order to create an action to drive (promote) a process successfully (Bandura, 2004).

Relevant communication may transform individuals and community members' positive perceptions about ICM thereby enhancing positive usage of the method. Shortage of staff render available human resources to work under strenuous situations and failure to promote the use of the effective LARC, ICM. Lastly, the DoH's programme managers should continue strengthening or supporting health providers at health facilities to sustain promotion of ICM use. For human resources (service providers) to be more productive at their workplace, constant support, mentoring and supervision by programme managers is needed to achieve clinical competence in rendering RHS including ICM (Olden, Szydlowski & Armstrong, 2004).

Constant support, mentoring and supervision enable health providers to see the potential for health promotion of newly introduced programmes in their workplace. Professional nurses also need support from relevant stakeholders in the villages where they visit, promoting the uptake of ICM. These include civic and political members, pastors, teachers and the indunas.

5.3.4.2 Defining the attributes of the concept "uptake"

Table 5.2: Attributes of the concept "uptake"

	Attributes
Uptake	• On offer • Availability • Sustainability • Trained professional nurses • Community involvement • Effective pregnancy prevention • SAW • Taking up • Utilizing

Successful uptake of ICM shall mean that SAW and community members must take into consideration, possession and ownership of RHS at PHC facilities ICM. SAW must gain or receive, accept, absorb and make use of the information given by a professional nurse providing the services. They must be able to enquire about the information they need to know about ICM. Information learnt must be incorporated and display the ability to learn or understand the information on the functioning of ICM in a human body. Professional nurses at PHC facilities must offer effective contraceptives for SAW and its availability cascaded to clients, to enhance uptake of the device and sustainability of the service. The discussion of expected outcome with SAW may enhance utilization of the implantable contraceptives. Outlining the new behaviour or action when ICM is inserted subdermal may enable SAW to understand and comprehend the temporary retention of the device. Community involvement in the utilization of ICM can display understanding the reasons for use of contraceptive and effective management of possible side effects of ICM.

5.3.4.3 Defining the attributes of the concept Implanon (Implant contraceptive method)

Table 5.3: Attributes of the concept "Implanon"

Implanon	Attributes
	• Subdermal insertion • Sexual health education • Individual perception and understanding • Effective pregnancy prevention • Trained professional nurses • PHC facilities • Clinical setting • Favourable environment • Community involvement • Reduced clinic visits • Reversible long acting contraceptive

Implant contraceptive method is inserted under the skin on the upper inner arm of SAW where it releases measured medication, which prevent pregnancy. Sexual health is important information that must continuously be cascaded to clients by trained professional nurses to enhance understanding involving the use of contraceptives. Informed SAW and public members may

develop positive perceptions and understanding of the newly introduced effective pregnancy prevention method, ICM. The clinical setting at PHC facilities should encourage SAW to utilize RHS ICM. Facilities' environments need to be conducive for both clients and providers to enable effective communication amongst the two parties. ICM is one of the LARC that serves users' time because it reduces clinic visits as the removal is in three years.

Table 5.4: Promote the uptake of Implanon (ICM) as a process

Components of process	Defining attributes
Professional nurses	• Skilled on insertion of ICM • Active involvement • Contribute to growth or progress • Initiate ICM insertion • Incorporate RHS with other services
Females	• Sexually active women (SAW) • Individual characteristics • Individual knowledge and perceptions • Health-seeking behaviour
Setting	• RHS at PHC facilities • Favourable work environment • Effective pregnancy prevention • Community involvement
Practice	• Influencing individual perceptions • Imparting knowledge • Increasing popularity • Enabling access and utilization of ICM
Dynamics	• Empowered community • Social support of clients • Quality and accessible ICM (RHS) services
Expected outcome	• Positive perceptions about ICM • Acceptance of ICM • Effective supportive social system • Perceived self-efficacy • Uptake of ICM

Professional nurses

The process to promote the uptake of ICM needs trained professional nurses who will be skilled to insert the device correctly on the prescribed site of insertion. Active involvement of trained staff will contribute more growth or progress on the utilization of ICM by SAW and public members at PHC facilities. Professional nurses must initiate insertion of ICM, which will enable them to educate SAW of the available methods of RHS and incorporate such information with other services. Teamwork must be displayed at PHC facilities; even those professional nurses who are not yet trained must be able to refer SAW to trained personnel to enhance utilization of the commodity.

Females/ Sexually active women

Sexually active women should consider their individual characteristics that enable them to use ICM without contra-indications for example; breastfeeding mothers can use the device without causing harm to the baby (Adal, 2017). SAW should acquire knowledge taught by professional nurses that can influence them to change their negative perceptions about ICM, learnt from peers and friends. Females should display health-seeking behaviour that will enable them to receive all answers of questions they have about ICM from health providers. That may promote the uptake of ICM at PHC facilities.

Setting

Availability of all RHS at PHC facilities may enhance the use of family planning by SAW who are willing to practice birth control as needed. The facilities settings should allow SAW to be free to communicate with professional nurses and availability of ICM posters may aid in marketing and improve the uptake of the service. Active community involvement on issues related to birth control may assist initiation of effective contraceptives such as ICM and aid more on effective pregnancy prevention, ICM prevent pregnancy up to 99% as indicated by majority of researchers in this field (Adal, 2017).

Practice

The patient-centred approach may assist clients to communicate with professional nurses without fear, and that can influence individual positive perceptions about the device. By patient-centred approach Lewin, Skea, Entwistle, Zwarenstein and Dick (2012) encourage shared control of the consultation, decisions about interventions or management of individual and public health problems with SAW. To enhance patient-centred approach, individual preferences must be considered during consultations of customers. For the fact that professional nurses will give health education, conduct campaigns and visit social gathering groups will enable SAW to learn more

about ICM. Professional nurses should consider the contra-indications of everyone SAW, like suspected or known pregnancy, liver diseases, personal history of breast cancer, undiagnosed abnormal vaginal bleeding and allergy or hypersensitivity to any of the Implanon materials (Adal, 2017).

Dynamics

Empowered people have a sense of self-determination; they are free to choose the contraceptive they need following the information they had in mind. They have a sense of meaning and may feel that contraception is imperative to them and acknowledge social support from both health professionals and sexual partners. Professional nurses must ensure and render quality and accessible RHS to public, LARC. They care about what types of contraceptives they have chosen. Empowered community have a sense of competence; they are confident about their ability to select effective contraceptive such as ICM and can continue using it without removal prior to the prescribed date. Such empowered SAW believe they can influence others to also use the contraceptive following learnt information (Quinn & Spreitzer, 1997).

Expected outcomes

According to Merriam-Webster Dictionary Online (2019), expected outcomes are the consequences or results that the organization expects to have achieved after the successful completion of the project. These outcomes could be quantitative or qualitative or both. After health education given to SAW, public members and campaigns conducted in social gatherings professional nurses have expectations, which may include the following: positive perceptions about ICM, acceptance of ICM, effective supportive social system and perceived self-efficacy. All these expected outcomes may promote the uptake of ICM.

Table 5.5: Sources for literature review for concept analysis

Author(s)	Year	Type of Article/ Book	Search Terms	Inclusion Criteria
Barrington, C. & Kerrigan, D.	2014	Debe cuidarse en la calle: normative influences on condom use	Promoting utilization of contraceptives	All articles and studies promoting use of contraceptives. Dictionaries
Azmat S.K., Hameed, W., Hamza, H.B., Mustafa, G., Ishaque, M., Abbas,	2016	Reproductive health Journal	Promotion of contraceptive use	Journal

G., Khan, O.F., Asghar, J., Munroe, E., Ali, S., Hussain, W., Ali, S., Ahmed, A., Ali, M. & Temmerman, M.				
Oosterhoff, P., Dkhar, B. & Albert, S.	2015	Contraception	Promoting the utilisation of implant contraceptives	Journal
Crankshaw, T.L., Kriel, Y., Milford, C., Cordero, J.P., Mosery, N., Steyn, P.S. & Smit, J.	2019	BMC health service research	Encourage contraceptives utilization	Journal
Hornby	2015	S.A. Dictionary	Promote	Dictionary
Delahunty	2009	.A. Dictionary	Uptake	Dictionary
Mastor, A., Khaing, S.L. &.Omar, S.Z.	2011	Open Access Journal of Contraception	Implanon	Journal
Lemmens, C.	2018	Contraception techniques in non-human primates in the context of shelter and rehabilitation	Promotion of contraceptive use	Doctoral dissertation
Petro, G.A.	2017	Non-palpable and difficult contraceptive implant removals: The New Somerset Hospital referral-clinic experience	Implant contraceptive methods	Journal
Bélanger, E., Rodríguez, C. and Groleau, D.,	2011	Shared decision-making in palliative care: a systematic mixed studies review using narrative synthesis.	Informed decision	Journal

Quinn, R.E. and Spreitzer, G.M.,	1997	The road to empowerment: Seven questions every leader should consider. *Organizational dynamics*, *26*(2), pp.37-49.	Empowerment	Journal
American Heritage Dictionary of English Language	2017	Dictionary	Uptake	Dictionary
Webster's New College Dictionary	2010	Dictionary	Uptake	Dictionary
Collins English Dictionary	2010	Dictionary	Uptake	Dictionary
K. Dictionaries	2017	Dictionary	Promote	Dictionary

Merriam-Webster Dictionary Online	2019	Dictionary	Promote	Dictionary
Oxford English Dictionary Online	2019	Dictionary	Promote	Dictionary

The data sources

A literature source was conducted primarily using the following databases, CINAHL with Full Text, Health Source-Consumer Edition, Health Source: Nursing/Academic Edition and Medline. The dictionaries were also used. The key terms were used for searching were promote, Implant contraceptive methods, uptake, empowerment, promoting the utilization of implant contraceptives, informed concern, encourage contraceptives utilization and Implanon. The reference list was searched using End Note.

In this study, promote the uptake of Implanon refers to proper utilization of ICM at PHC facilities, retention of the device up until the prescribed period. The prevention of unintended pregnancies, reduce safe and unsafe abortion rates and low unintended birth rate as deemed right by the DoH. All these may alleviate the pressure of population on the economy of the country. Ngome and Adimegwu (2014) added that the high numbers of unintended birth among adolescents remain a public concern globally.

5.3.5 Identifying the model cases

The next step is to construct a model case that illustrates the defined attributes. The researcher constructed the model cases in this chapter. Xyrichis and Ream (2008) agreed that developing model and additional cases is valuable in clarifying abstract concepts such as those encountered in nursing. The different kinds of models include model case, borderline, related, contrary, invented, and illegitimate case. Nevertheless, two cases will be presented in this chapter to illustrate and clarify what “promote the uptake of ICM is and is not” (Walker & Avant, 2014).

5.3.5.1 Model Case

A model case is an example of the use of the concept that demonstrates all the defining attributes of the concept. Therefore, the model case should be a pure case of the concept, a paradigmatic example, or a pure exemplar (Walker & Avant, 214). It is generally regarded that the researcher

should be able to construct a model case which allows him/her to state “If this is not X, then nothing is”. In this context, the interviews with the professional nurses and SAW served as real-life cases as they indicated what they need to promote the uptake of ICM and thus they include all the critical attributes of the key concept (Walker & Avant, 2014).

Example of model case

A woman (SAW) aged 30 years visited PHC facility X for RHS she wanted to be inserted ICM. On arrival at the facility, she followed the normal cue for registration. She asked the registration officer as to where the service she needed is rendered or which cue she must follow. The registration officer directed her to the helpdesk officer who answered her question clearly. Arriving in the cubicle the professional nurse warmly welcomed the woman and asked her which service she came for today. The woman responded indicating that she came for family planning services and she wanted to know more about the newly introduced device (ICM). The professional nurse explained clearly about ICM including its effectiveness as a LARC, availability of ICM, benefits, advantages, disadvantages, management of side effects, the procedure for insertion and removal, reasons for follow-up and return dates.

The woman was given time to ask questions and she did so where she wanted some clarity. The professional nurse also explained to the woman about other available family planning methods that are available at the facility and the client was given time to ask questions. The woman chose ICM and the procedure for insertion lasted three minutes. The patient was issued with two cards for return of which one was attached to identity document and the other one on clinic booklet for the removal date in three years. The woman was excited about the conversation, the way it was done and she was given time to ask questions after insertion. The nurse displayed her competency and ability to correlate theory of what she learnt during training with practice. She enabled the environment to be favorable and non-threatening for the client. The return date (follow-up visit) indicated on booklet for review in case SAW need clarity or have certain challenges that need professional assistance.

Discussion

The model case example was ideal and has all the characteristics of the critical attributes to ***“promote the uptake of ICM”.*** The professional nurse displayed the training undergone, and

has information about ICM and can render the service as required by patients (SAW). The positive attitude shown by the professional nurse motivated SAW and promoted the uptake of ICM as the woman's experience can motivate others to visit the facility for the method (ICM). The professional nurse demonstrated her ability to correlate theory learnt in real practice. The environment-context (cubicle at PHC facility) where the conversation and procedure took place was warm and non-threatening as the woman was free to talk. The nurse explained the device clearly to her client and gave her time to ask questions. The relationship between the two parties was so supportive and courageous that motivated the woman finally to select the desired method (ICM) without fear. A follow-up visit indicated on a booklet for review in case SAW need clarity or has certain challenges that need professional assistance.

5.3.5.2 Contrary case

Walker and Avant (2014) clarified a contrary case as a clear example of what the concept is not. In this situation, the example of contrary case will display staff's (professional nurses') attitude that (demotivate SAW utilize ICM) is not promoting the use of ICM by SAW.

Example of contrary case

A woman (SAW) aged 20 years visited PHC facility X for RHS, she wanted to be inserted ICM. On arrival at the facility, she followed the normal cue for registration. She asked the registration officer as to where the service she needed is rendered, or which cue she must follow. The registration officer directed her to the helpdesk officer who answered her question clearly. Arriving in the cubicle the unskilled professional nurse warmly welcomed the woman and asked her which service she came for today. The woman responded indicating that she came for family planning services and she wanted to know much about the newly introduced device (ICM).

The unskilled professional nurse said to the patient who told you about that thing and do you know it? I can give you the injectable method, it is a good method, many SAW have used it for years and it is effective too. "Why are you interested in a thing that you do not know?" " Unfortunately, I do not know the procedure to insert the device." The woman asked the nurse a question, "Is the ICM that I chose to use available?" The unskilled professional nurse responded negatively, "I am not sure as I do not offer the method but I can check for you."

The unskilled professional nurse went to look for the device and found it. She said to the client, “it is available but you can come next week for insertion when skilled professional nurse X is at work and she is an expert on that field.” The woman went away without a method of choice and informed the unskilled professional nurse that she did not have enough time to choose the second method she may use. She further indicated that she might come back next week for more explanation by skilled professional nurse X, but she was not sure. The unskilled professional nurse did not give the woman a return date to visit the clinic for insertion of the device by skilled professional nurse X, the nurse just said “next week”. The negative attitude displayed by the unskilled professional nurse may lead the woman to develop a negative attitude to visit the clinic again. The unskilled professional nurse wasted a patient’s time and transport money and the nurses’ behaviour may instill fear in the patient’s mind thinking that it is the behaviour of nurses. The woman may stay at home engaging in sexual activity without a protective method, which may result in unplanned pregnancy leading to abortion attempts or unsafe abortion. It may also contribute to poor antenatal visits to the clinic that may lead to unacceptable (personal) maternal care.

Discussion

The contrary case does not consist of the critical attributes to promote the use of ICM: this scenario is clearly an example of the actions, which **cannot** promote the uptake of ICM. Instead, those actions **suppress** the uptake of ICM. This contrary case is like the real-life experience of the professional nurses’ attitude when SAW are requesting RHS methods, it is no wonder that they do not manage to demonstrate the required skills and level of care as expected by the employer and the community members served. The following outlined characteristics, indicate that the contrary case is missing many of the defining concepts of the model.

Integration of theory to the real world was difficult as there was lack of support and poor communication skills with the client. There was poor nurse-patient relationship, failure of the professional nurse to communicate well with patient even though she lacked skills to assist SAW. The environment-context was non-supportive with inadequate human resources, as the woman must re-visit the facility to meet professional nurse X who is skilled. Type of behaviour displayed by the nurse may drive the woman away from visiting health facilities for RHS due to fear. That may lead to engagement in sexual activities without a method to prevent unintended pregnancy. If that happened, consequently it may lead to unsafe abortion that may lead to death. Failure of the nurse to explain to client about the method requested may demotivate even those who may

hear this information from her. They may not visit facilities for such a service leading to increased unplanned birth, complicated maternal health and putting pressure on the economy of the country.

5.3.6 Antecedents and consequences

5.3.6.1 Antecedents

Ascertaining antecedents and consequences supports explanation of the defining attributes and the context in which they occur. Antecedents must exist for the concept to come about. Prior starting to promote the uptake of ICM for effective use of the device, the following should prevail as antecedents for rapid movement of the action to “promote”. These include; PHC facilities reported low uptake of ICM by SAW during data collection. Vhembe District DHIS reported high rate of unintended pregnancies more especially among teenagers, and professional nurses at PHC facilities confirmed a low uptake of ICM, during interviews. Additionally, successful promotion of ICM require a commitment by the relevant authorities with sufficient resources (trained professional nurses and available ICM stock), as well as an enabling favorable work environment.

Programme managers from Vhembe District office must closely monitor the uptake of ICM at PHC facilities; this will enable them to fully support and mentor professional nurses rendering the service. Programme managers will be able to identify problems and provide onsite trainings for those who are not yet trained. Launching and community mobilization will be possible when programme owners are involved in different facilities. This will translate into consequences of the central concept required “uptake” of ICM. If professional nurses were supported and mentored, they may be motivated to render the service and they may support SAW who need LARC.

According to Honore (2009) when a person is motivated, he/she may wish to do the best possible job or to exercise the maximum effort to perform allocated assignment. When professional nurses have received intrinsic rewards, they may also be able to motivate and influence positive perceptions of SAW to make use of ICM. In addition, motivation signifies the forces that act on or within to influence the person to conduct oneself in a specific, goal directed or desired manner. To effectively influence and insert ICM to SAW, professional nurses need to be motivated because motivation is what leads us to act.

According to findings of the current study, majority of SAW are not interested in utilizing the device because of fear of unknown and lack of motivation. They have fear of side effects as indicated by their peers, friends and relatives, which demotivate them and symbolizes inadequate information about this device, ICM. Concerning the SAW's knowledge about Implanon, few SAW knew the effective duration period of the commodity but knew little about the advantages and disadvantages of the method. The characteristics of SAW were as follows; 22 SAW aged 18 to 25 years; hence, Ramathuba et al. (2012) reported that previous research studies indicated that 60% of hazardous abortions happen amongst SAW aged less than 25 years (perceived barriers). Sixteen SAW were 26 to 35 years old and 24 SAW were 36 to 45 years old Atiemo (2015) indicated that SAW of these age groups are more likely to demand LARC than those of younger ages (perceived seriousness). Majority of them were married (29), unmarried were 13 and 20 were still single. Out of the 62 participants, only 12 were permanently employed, 32 passed Grade 12 and 30 have no Grade 12 but 22 of them managed to complete their tertiary education. However, age is a very important variable in RHS; all participants (SAW) were aged between 18-45 years – who are even greatly in need of effective contraceptives as they are still sexually active (perceived threat).

According to HBM (Jones et al., 2015), professional nurses should find out the strategies to activate SAW readiness to promote the uptake of LARC, through giving information to community members. They should promote awareness, reminders and professional support to those who have self-confidence to take action. Patient guidance and trainings to empower SAW to take informed decisions is of greater importance to prevent early childbearing for youth. Availability of ICM at PHC facilities must be closely monitored, reordering and shopping around from other facilities for continuity of the service.

5.3.6.2 Consequences

Consequences, according to Walker and Avant (2014) are the results manifested by the existence of the concept. Consequences of promoting the uptake of ICM will mean a successful occurrence of the results displayed as follows: knowledgeable SAW and community at large about the effectiveness of ICM, positive perceptions about ICM and increased demand for LARC, ICM as well as enhancement of RHS services delivery. Bélanger, Rodríguez and Groleau (2011) clarified that informed decision-making is a recent approach that generally involves discussing and respecting patients' preferences for participation in their health care process. Knowledgeable

SAW and public members about the availability, functioning of the device may bring out the issue of informed decision-making.

Increased demand of ICM may result in low unintended pregnancy report. When promotion of ICM uptake is achieved teenagers and other SAW will have knowledge about this newly introduced method of family planning. Informed community or public members can make informed decisions in their lives concerning pregnancy prevention methods. Parents and guardians may be able to influence and advise their children to utilize the commodity (ICM) that serves time. That may also mean effective utilization of the cost-effective commodity thereby promoting the retention of the device ICM. Effective utilization of the device for the expected prescribed period, may take part in unintended pregnancies reduction in the Vhembe District. The proper retention of the device will mean SAW's understanding for utilizing ICM. The reduction of early discontinuation of the device before prescribed time will be the results of the concept "promote the uptake of ICM".

5.3.7 Defining Empirical Referents

Walker and Avant (2014) articulate that categories or classes of actual occurrences that by their existence or presence exhibit the happening of the concept itself, called empirical referents. The empirical referents describe how the concept is measured in the research study. These references are important for measuring the existence of the concept in different contexts and are necessary for developing valid instruments of measurement. Walker and Avant (2014) argue that it may be helpful to ask the following question: if we are going to measure the concept or determine its existence in the real world, how this should be performed.

The empirical referents of the promotion of uptake of ICM in this study would be measured through:

- All professional nurses at PHC facilities trained on insertion of ICM
- More awareness campaigns to empower SAW and public on the usage ICM device
- Pamphlets and posters at PHC facilities advertising ICM
- Recruiting more SAW including adolescents to utilize LARC, ICM
- Continuous media educative interventions to reach all public members

The defining empirical referents of "promote the uptake of Implanon" were measured through use of the patient-centred approach and the Health Belief Model (HBM) framework. A psychologist in the field of Public Health first used the HBM, in the 1950s. This framework is based on certain

core assumptions. This is because when a new behaviour is exhibited, it is considered and valued. For example, the statement that an individual will take up a behaviour (use ICM) if the person feels that negative health consequences (unintended pregnancy leading to maternal ill health and impermanence) can be avoided. If a positive expectation is exhibited by insertion of ICM, SAW will prevent a negative health condition (utilization of ICM will be effective at preventing unintended pregnancy), and its consequences. Thus, Walker and Avant (2014) stated that referents are very useful in instrument development when identified, as they are clearly associated with theoretical base of concept. Referents contribute to both the content and construction of the instrument and they will provide clear observable phenomena of the concept.

Table 5.6: Activities to correct the situation

Key Variable	Categories	Activities
Perceived threat	• Perceived susceptibility • Perceived seriousness	• Forming a new behaviour to avoid the health outcome (unintended pregnancy) associated with non-use of contraception • More likely to develop a behaviour (use of ICM) that will help reduce the risk of falling pregnant
Cost benefit analysis	• Perceived benefits • Perceived barriers	• This is the belief or subjective view of the significance or helpfulness of developing a health behaviour to offset the non-use of ICM • Ability to remove all (barriers) difficulties associated with adopting a new health behaviour (use of ICM)
Cue to actions	• Internal cues to actions • External cues to actions	• Taking note of information shared with peers about the effectiveness of ICM • Understanding the communication through posters pasted and information given as reminders, to can utilize ICM
Modifying and enabling factors	• Demographic • Psychological • Social • Structural • Reproductive	• Instilling knowledge on language easily understood by SAW • Transforming the mind-set of SAW, influencing their perceptions positively • Enhancing a sustainable social support system by families and sexual partners • At PHC facilities ICM is offered seven days per week • Mobile clinics to offer ICM for those very far from facilities • Availability and functionality of resources both providers and the commodity

		• Fostering community or family or peer or sexual partner support or encouragements to use ICM

5.4 Summary

In conclusion, "*promote the uptake of Implanon*" is a continuous process that needs professional nurses to function as team and building up relationship with SAW and community stakeholders for effective operations in their context (PHC facilities). This process involves teaching programmes to change negative perceptions of SAW, ICM insertion and good communication, counselling skills and support of clients requesting the method.

CHAPTER 6

MODEL DEVELOPMENT

6.1 Introduction

The previous chapter discussed concept analysis using the eight steps in the Walker and Avant (2014) method to clarify and distinguish the definition of the identified concept. The present chapter focuses on model development. The process of model development is guided by concept analysis proposed (Walker & Avant, 2014). Concept analysis according to Walker and Avant (2014) is one of the building blocks in a theory or model development. According to Dickoff, James and Wiedenbach (1968) the results of concept analysis and the building blocks of the model are integrated in this chapter.

6.2 Development of the model

The objectives of the model are:

- To categorize concepts using identified concepts from the collected data
- To develop a model to promote the use of Implant Contraceptive Method in Vhembe District

In the current study, concepts were classified following the study results and identified concepts from data collected. The methodology that guided the development of the model is the co-concept identified, the objectives and the six areas described by Dickoff et al. (1968).

6.3.1 Six areas

6.3.1.1 Context: PHC facilities

The “context” defined as the setting, location, the physical structure of PHC facility or ward or unit, hospital or medical center, time, space, or structure that constitutes different elements of the situation in which the doings take place (Dickoff et al., 1968). In this study, the doings (insertion of ICM) is happening in the context (PHC facilities). Participants (SAW) visit PHC facilities demanding or in need of RHS ICM. However, the authors noted that the physical elements arranged in a manner to support a “patient-centered approach that unifies all doings in which the “agent” (professional nurses) is functioning towards achieving a goal for the benefit of the “recipient” (SAW).

The determination for the development of a model is to provide a diagram summary that represents the scope of professional nursing care (Boderick, 2011). The context of PHC package that render reproductive health services including insertion of ICM illustrated in **figure** 6.1:

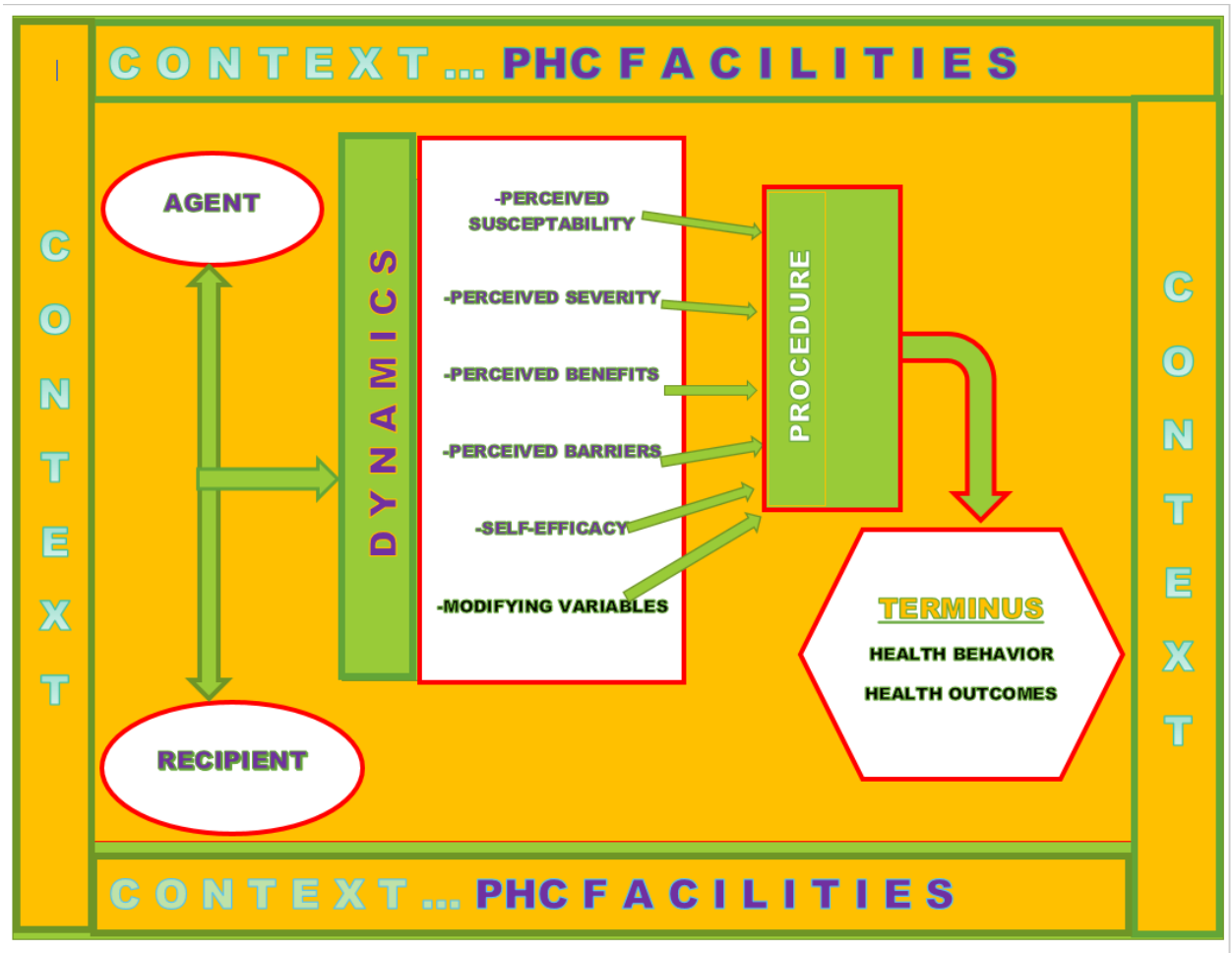

Figure 6.1: Context of PHC package

The context of nursing care starts from PHC facilities and private institutions to secondary level then tertiary level depending on the type of services rendered for the patient. In this model, the context PHC facilities are context considered the first field where patients visit for reproductive health services. PHC facilities considered as institutions rendering integrated, multiple health services including family planning at no cost. In Vhembe District, there 121 PHC facilities including CHC which render PHC package.

6.3.1.2 Agent

According to Dickoff et al. (2008) an individual or group of people who perform the activity that serve community or public e.g. provision of health care services at health facilities (PHC and hospitals). In this model development, the agents perform the activities that are more creative, constructive and important with the purpose of achieving the set goals (Dickoff et al., 2008). In the current study, the agents were health providers, professional nurses at PHC facilities. Professional nurses perform the important activity; their role is to render integrated health care services to public members as deemed correct by the DoH in South Africa. Professional nurses operate on the bases that public members should utilize health services to improve their health status.

The introduction of HBM in the health sector was to understand better, the reasons why public members are reluctant in using health services or failure to practice health related behaviours to improve their lives. Therefore, reasons for utilizing RHS by SAW depend on the understanding or fear of negative impacts that may happen if these services were not properly employed (Jones et al., 2015). In this case, both professional nurses (agents) and SAW (recipients) in the PHC facilities (contexts) should display a positive attitude towards this new device (ICM) to promote the use of ICM by SAW.

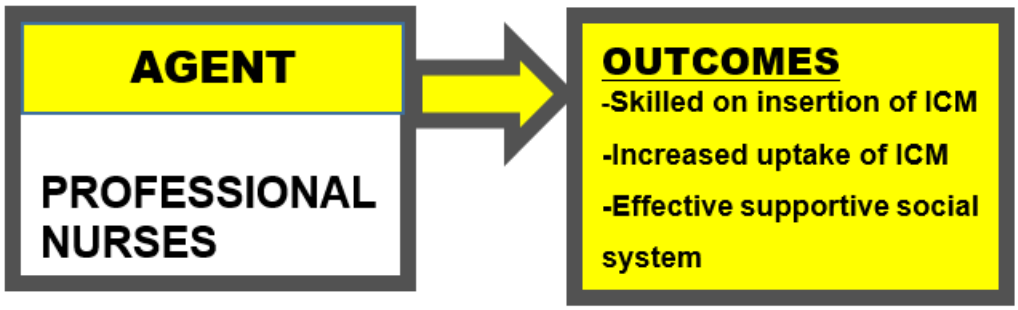

Figure 6.2: Agent and outcomes

6.3.1.3 Recipients

Dickoff et al. (2008) reported that recipients are public members or individuals who receive activities provided by agents. This means that all services provided by health providers (agents) are actions received by patients in this model development, these patients are SAW (recipients). The illustration below display recipients in their context, **Figure** 6.3:

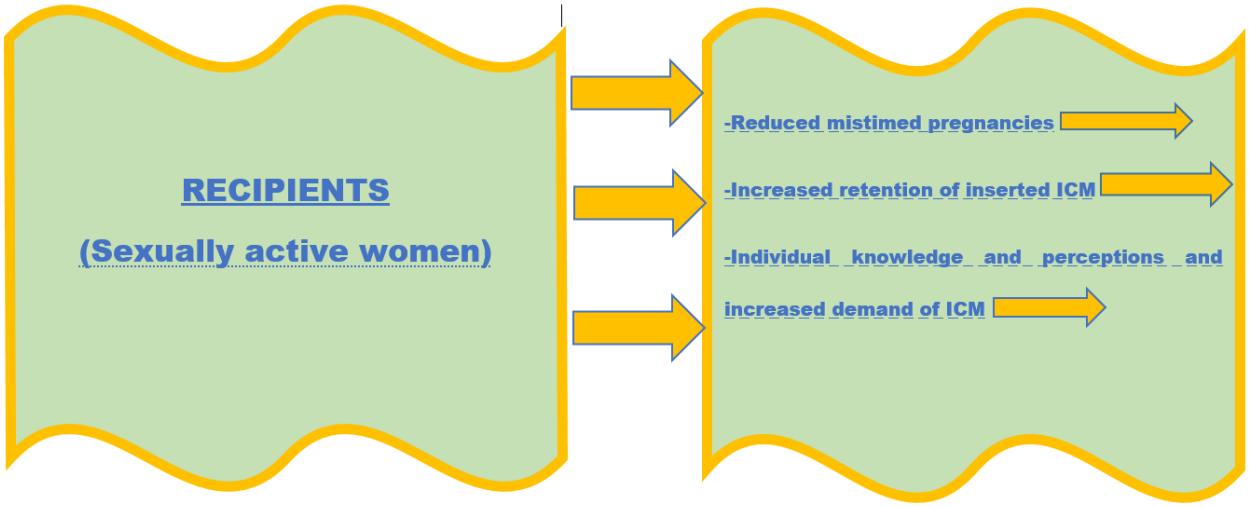

Figure 6.3: Recipients

In the current study, the recipients are SAW aged 18 to 45 years who visit PHC facilities in the Vhembe District, Limpopo Province for reproductive health services. SAW should have positive attitudes on the use of Implanon (ICM). That can be possible when SAW possess individual knowledge, positive perceptions towards ICM and display health-seeking behaviour. Professional nurses should avail themselves to provide support and assistance of SAW who are willing to use ICM. There should be good relationships between health providers and SAW in their respective communities for the promotion of the uptake of ICM. Good relationships may enable SAW to follow cues to actions given by professional nurses at PHC facilities Jones et al. (2015). SAW and public members concerned following the given cues to actions may take perceived susceptibility and perceived seriousness aimed at prevention of mistimed pregnancy, into account.

6.3.1.4 Procedure

The procedure according to Dickoff et al. (2008) is regarded as the way to emphasize steps and patterns so that it is performed logically. Procedure is done following the relevant set rule, principle, protocol governing these activities or procedures to ensure systemic technique. The procedure for inserting the device (ICM) is necessary for the prevention of infection on the site of insertion and proper placement of the device on the site of insertion. Procedures may also include information sharing between health providers and SAW during counselling. Information sharing between professional nurses and SAW/public members may include organization of radio talks, meetings, campaigns and visits to social gatherings and school visits. Involvement of

stakeholders in the respective areas of social gathering and campaigns involves following relevant procedures.

HBM, the six constructs may be considered to understand SAW health-related behaviours and the reasons for non-compliance on the use of ICM, to correct the dynamics. The constructs are:

Perceived seriousness: SAW without adequate, little or no knowledge about contraceptives to prevent unwanted pregnancies must be empowered and encouraged to use highly effective LARC. Continuous and constant health education of SAW on information regarding complications that may arise due to unintended pregnancies is crucial.

Perceived susceptibility: Certain SAW may have understanding that failure to utilize effective contraceptives may subject them to health-related risks. Both those who display understanding and those who lack information require professional guidance: Continuous and constant health education of SAW and public members on information regarding complications that may arise due to unintended pregnancies, e.g. unsafe abortion, is crucial.

Perceived benefits: Professional nurses should encourage SAW to use ICM, as is highly effective; 99.9% in preventing unwanted pregnancy or child spacing as desired.

Perceived barriers: Professional nurses should be able to assist SAW to identify major obstacles that influence them not to use LARC. Professional assistance to deal with these obstacles to prevent unwanted pregnancies and complications is necessary.

Cues to actions: Providers must have ways to precipitate or facilitate factors that motivate individuals (SAW) to take action or follow advice given. Cues to actions have two types: External and internal. External cues: includes events or information from others, the media or health care providers promoting engagement in health-related behaviours, e.g. return date, product of health warning labels. Internal cues to actions include learnt lessons by oneself, e.g. had complicated delivery or ill health (Jones et al., 2015).

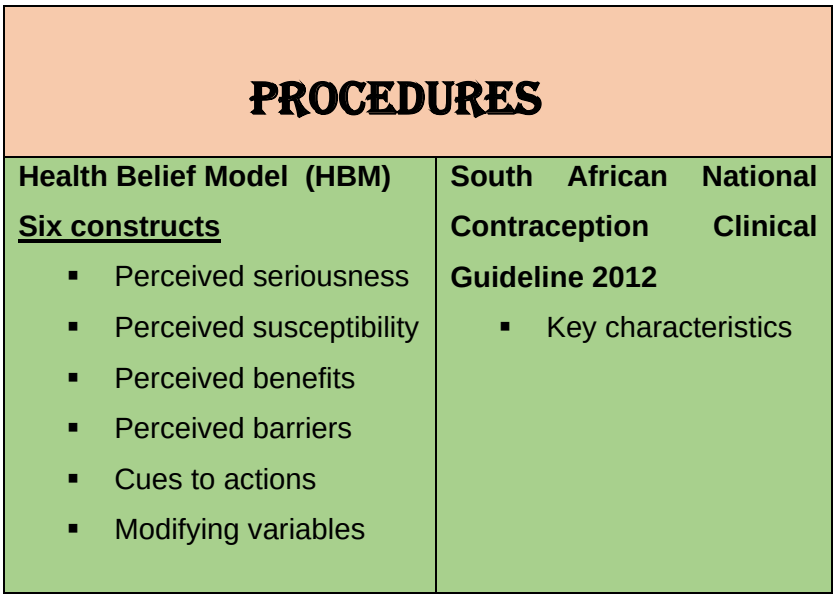

Figure 6.4: Procedure for ICM insertion

The procedures that are performed during insertion must follow the key characteristics as outlined in the South African National Contraception Clinical Guideline 2012. The following information **(key characteristics)** should be communicated to SAW during counselling session, during and after insertion onf the device:

- Effectiveness: ICM is extremely effective in preventing mistimed pregnancy. It is 99, 9% effective for a period of three years.
- Age limits: No age boundary has been set.
- Parity restrictions: No restrictions with parity.
- Common side effects: Common one is bleeding tendencies, and amenorrhea. Other side effects are weight gain, headaches, nausea, dizziness, breast tenderness, mood changes, insomnia and abdominal pain caused by enlarged ovarian follicles.
- HIV/AIDS/ STIs: Method does not protect a person against HIV/AIDS/ STIs, and other sexually transmitted infections. The consistent and correct use of condoms is the most efficient means of protecting against HIV/AIDS/ STIs.
- Duration of use: ICM can be used throughout the reproductive years:
- Return to fertility: Guaranteed immediate return to fertility after removal meaning there is no waiting period to conceive once the device is removed.
- Follow-up: Routine follow-up is not necessary, only when challenges are encountered that necessitates a discussion with the health provider.

- Advice given to SAW on ICM that need immediate attention at heath facility:

-Sudden change of inserted ICM shape
-Pain on the site where the device is implanted
-Changes of the skin colour or burning sensation with redness appearance of the skin
-If one has fallen pregnant
-Development of a new condition contraindicated to continue with ICM

6.3.1.5 Dynamics

Dickoff *et al. (20*08) clarify dynamics as the power sources for the activity, which can be biological, physical, chemical, and psychological for individuals or things functioning as part of the framework in realising the desired goal. Dynamics, considered comprising attractive human personalities that may influence energy origin associated with ability to perform activities (Maputle, 2010; Boderick, 2011). In the current study, dynamics were the activities that prevented (perceived barriers) or activities that promoted (perceived benefits) uptake of ICM. These dynamics included biological, physical, chemical and psychological as illustrated in **figure** 6.6 below:

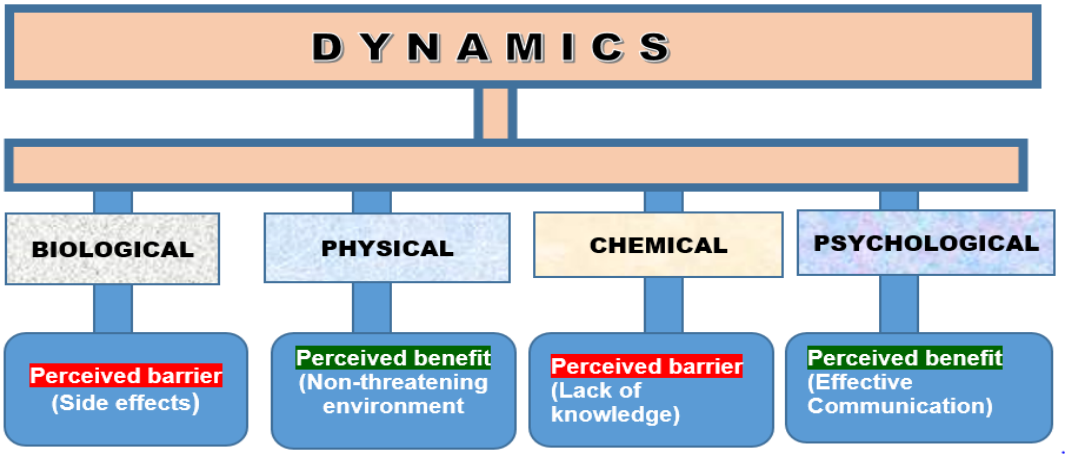

Figure 6.5: Dynamics

- Biological factors

Majority of SAW around the world complained of adverse side effects from different contraceptives they have chosen to utilize (Eberhardt et al., 2009). In the present study, majority

of participants, both professional nurses and SAW reported that SAW dislike the use of ICM in fear of side effects. Amongst other side effects, participants frequently reported the bleeding nuisance as the number one side effect that terrified them. In addition, the National Contraception Clinical Guideline (DOH 2012), the most common side effect is bleeding tendencies, including lighter bleeding, irregular bleeding, infrequent bleeding and amenorrhea. Other side effects are weight gain, headaches, nausea, dizziness, breast tenderness, mood changes, insomnia and abdominal pain caused by enlarged ovarian follicles. Moreover, these perceived barriers may negatively influence the required usage of ICM at PHC facilities (Hall, 2012).

- Physical factors

The non-threatening environment in this study starts from SAW's homes to PHC facilities. The support of SAW from their families including sexual partners and at PHC facilities by nurses, may improve ICM usage. Non-threatening environment enable SAW to know and understand the perceived benefits of effective contraceptive use. In the current study, SAW verbalized that lack of support by their immediate families and sexual partners negatively affect individual utilization of contraceptives thereby promoting risks of unplanned pregnancies. In addition, nurse attitude rendered at PHC facilities' environment to be threatening and promote underutilization of the device as reported by SAW during interviews.

- Chemical factors

Lack of knowledge by both professional nurses and SAW including their immediate families and sexual partners lead to underutilization of contraceptives in general. SAW during interviews highlighted that the attitude displayed by professional nurses towards their request for family planning methods is exhibition of lack of knowledge. However, professional nurses reported that SAW not informed about the newly inverted ICM device, leading to underutilization of the method. Inadequate information by both participants is a perceived barrier that has negative consequences for usage of contraceptives.

- Psychological factors

Effective communication between professional nurses and SAW, families and sexual partners is the key to effective use of newly inverted contraceptives. Communication skills involved amongst professional nurses and SAW in the provision of contraceptives may positively or negatively affect contraceptive usage. Professional nurses should be reflective listeners and respond to SAW family planning needs. Professional nurses indicated several strategies of communication that may be engaged to improve usage of ICM by SAW. These strategies include health education,

campaigns, teachable moments, peer education, CHW involvement, school health programme, radio and television slots. These trusted strategies can be employed to impart knowledge to SAW and families; this may give sufficient motivation to service users to effectively utilize the device. Therefore, effective communication has influence on the use of contraceptives because SAW need to be informed and able to make informed decision.

6.3.1.6 Terminus/ goal

According to Wehmeier (2005), a terminus/goal is the results or the desired outcome following planned activities or actions. Dickoff et al. (2008) further debated that a goal is regarded as the outcome following the performance of the agent. The outcome that the agent (professional nurses) wishes to attain through the application of procedures, illustrated in **Figure** 6.6: here-under:

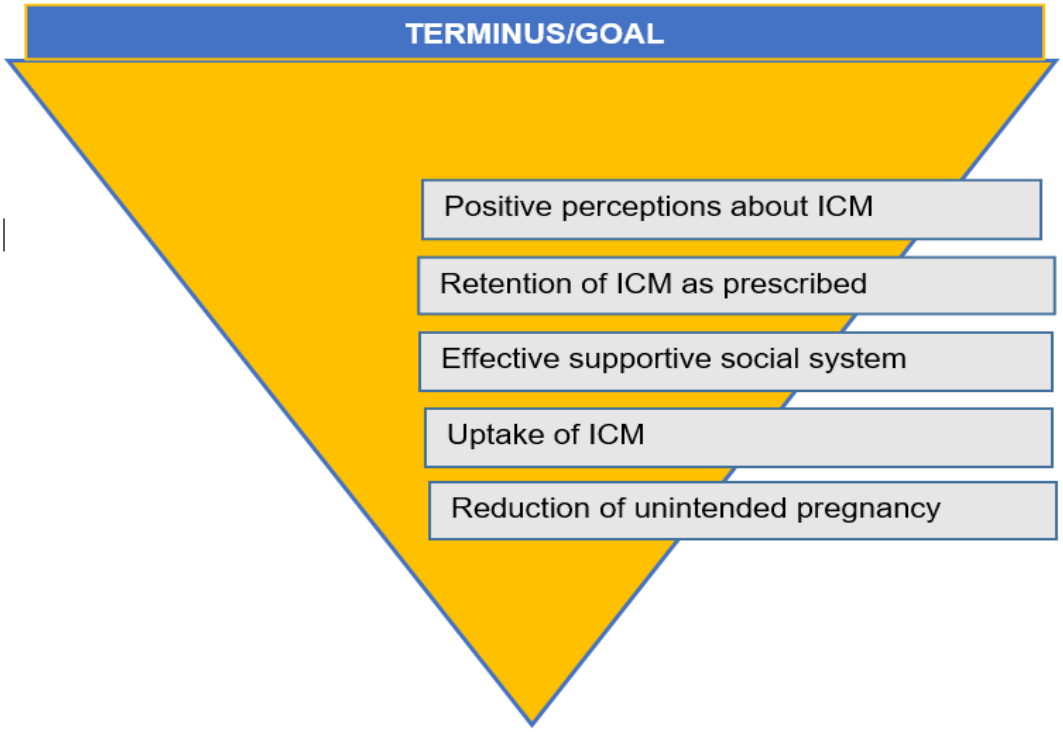

Figure 6.6: The terminus/goals of ICM insertion

In the current study, the active interactions between both study participants (professional nurses and SAW) will enable SAW to gain more information about ICM. Professional nurses will be able to change SAW negative mindset to positive perceptions about LARC, ICM. That will encourage SAW to have self-efficacy and realize perceived benefits for utilizing highly effective

contraceptives to prevent unhealthy behaviour (mistimed pregnancy). This will be possible through continuous educative processes such as mass campaigns, health education at schools, social gatherings and meetings. Effective social support system on the usage of ICM will lead to increased retention of the device until the prescribed duration, hence: following cues to actions given to them by professional nurses. The uptake of ICM will increase thereby reducing mistimed pregnancy when SAW manage to remove their perceived barriers that were preventing them from using LARC.

6.4 Process of the model

The model (**Figure** 6.4:) displays that through the procedure of facilitating the application of the family planning guideline of South Africa in rendering the RHS , the uptake of ICM may increase as needed. In the model, the arrows show that relationship. The process of ”*promote uptake of Implanon”* at PHC facilities in Vhembe District, will take place in the following three levels, namely:

- Level 1: Inadequate training of professional nurses
- Level 2: Promote the uptake of ICM
- Level 3: Compliance with the out comes

6.4.1 Level 1: Inadequate training of professional nurses

The discussion of research findings in chapter 4 shows that there are differences and similarities communicated by both participants in the current study, about the utilization and non-utilization of ICM at PHC facilities.

- Implant contraceptive method is one of the LARC underutilized by SAW irrespective of its effectiveness, confirmed by both participants (professional nurses and SAW).
- The main reason for not using the device mentioned to be fear of side effects bleeding nuisance as reported by both participants.
- Professional nurses indicated that SAW lack knowledge about how it functions while SAW say professional nurses at PHC do not health educate them about this device, hence underutilization of the device.
- Lack of ICM publicity at PHC facilities, no posters or pamphlets given to SAW as it was like about the previous contraceptives when introduced.

- Unskilled professional nurses always turn away SAW requesting ICM or discourages them to use the newly inverted device and even fail to refer them to other facilities for the similar service.
- Professional nurses reported constant availability of the device which may be due to underutilization, SAW are not sure of the availability because they do not ask about ICM, as they are not interested in the device. Some SAW indicated that on removal of the device no re-insertion due to unavailability.
- Sexually active women lacked support from unskilled professional nurse, parents/guardians and sexual partners because they disliked the device due to lack of information and rumors about its side effects.
- Implant contraceptive method, perceived as a foreign body that may move to the heart and kill the person and perceived as method of family planning that may render SAW to be sterile to control births in the country.
- Implant contraceptive method is one of the RHS package, mobile clinics must insert ICM at their visiting points, and the service be included to assist those in need of the device since they are staying far from facilities.

6.4.2 Level 2: Promote the uptake of Implant contraceptive method

Over the past decades, efforts have been made to meet the need for family planning globally, hence introduction of LARC, in particular ICM in South Africa in 2014 (Adeagbo et al., 2017). Despite these efforts, the uptake of ICM remain low (conversation with coworkers 2017) with increased mistimed pregnancies amongst teenagers in the Vhembe District. The reason for the uptake of ICM to remain low was due to underutilization due to fear of side effects as reported by Kimani et al. (2015). The effectiveness of promoting the use of contraceptives lie in the hands of health providers who have more influence on users (SAW).

In the current study, professional nurses confirmed that there was inadequate training on insertion of ICM and no support by programme managers. Kumar and Brown (2016) reported that more time is needed for trained health providers to cascade the information about LARC to enhance effective use by SAW and their sexual partners. Thus, the effectiveness of rendering RHS depends on trained professional nurses and mentoring by programme managers or supervisors and is significant to preparation of SAW and public members to understand types of contraceptives. The guidelines formulated for implementation of the developed model, **Table** 6.1 below:

Table 6.1: Guidelines to promote the uptake of Implant contraceptive method

GUIDELINE 1				
Ability to integrate theory to practice and application of the information from the South African (SA) National Contraception Clinical Guideline on Subdermal Implants				
There is an indication that few professional nurses were trained to insert ICM to SAW requesting the device for birth control		**Yes**	**No**	**Remarks**
1.1	All professional nurses rendering RHS at PHC facilities to be trained to insert ICM and be supported by programme managers or supervisors from Vhembe District			
1.2	Newly introduced contraceptive methods should be launched in all municipalities under Vhembe District to cover all areas receiving services from Vhembe PHC facilities			
1.3	Launching of newly introduced services must involve all stakeholders in the communities to impart knowledge to members of the public who have influence in child bearing process			
1.4	Continuous and constant information sharing among professional nurse is significant for effective RHS in the health facilities			
1.5	Management of perceived barriers that are believe to hinder utilization of ICM by SAW should be effectively practiced continuously by trained professionals			
GUIDELINE 2				
Enhancement of effective communication to promote the uptake of ICM through incorporation of theory to practice and application of information from the SA National Contraception Clinical Guideline on Subdermal Implants				
There is an indication that of effective communication between SAW and professional nurses at PHC facilities to promote uptake of ICM through application of information from the SA National Contraception Clinical Guideline on Subdermal Implants		**Yes**	**No**	**Remarks**
2.1	Facility year plan indicate that there are months allocated for mass campaign and social gathering, school/home visits focusing on information giving to public members			
2.2	Facility daily health education programme indicate integration of RHS with other health services rendered at PHC facilities, and recorded in health education book as evidence			
2.3	Individual health education about the availability and use of ICM by SAW is initiated and service rendered where informed decision is taken			

2.4	SAW during antenatal care (ANC) and post-partum period SAW are given on use of ICM and recorded on patients' documents (maternity case record or booklet)			
2.5	Counselling skills: Professional nurses should undergo sufficient short course training on counselling, to empower them on preferred counselling skills.			
2.6	CHW's must be trained and sent to villages with full information related to Implanon (ICM) to recruit SAW to utilize the device			
	GUIDELINE 3			
Professional nurses demonstrate knowledge about the newly introduced LARC, ICM through incorporation of theory to practice and application of information from the SA National Contraception Clinical Guideline on Subdermal Implants				
There is an indication that professional nurses at PHC facilities have knowledge about LARC, in particular ICM introduced in SA in 2014 February, through application of information from the SA National Contraceptive Clinical Guideline on Subdermal Implants		**Yes**	**No**	**Remarks**
3.1	SAW are treated with respect and dignity in consideration of their uniqueness with regard to individual differences before insertion of ICM to avoid complication			
3.2	Professional nurses to attend warm-up or refreshers' courses enabling updating their skills and for new developments about the device as needed			
3.3	SAW to visit PHC facilities and consult skilled professional to share correct information and guidance regarding ICM, to clear the myths and rumours they heard from their peers, friends and relatives.			
3.4	Professional nurses are approachable by SAW from different socioeconomic classes irrespective of their level of education, visiting facilities for RHS			
3.5	As part of support from professional nurses to SAW, ICM device must be shown to SAW during demonstration of how it is inserted on the upper arm of a woman			
3.6	SAW be given a relevant return date or referred to the nearest facility in case the nurse in that shift is on leave, rather than just turning the patient away without clear explanation or referral			
	GUIDELINE 4			
Promoting enabling environment confirmed by adequate resources, human, equipment's and materials to promote the uptake of ICM, through incorporation of theory to practice and application of information from the SA National Contraception Clinical Guideline on Subdermal Implants				

There is an indication that availability and functionality of resources are maximised to promote the uptake of ICM by SAW, through incorporation of theory to practice and application of information from the SA National Contraception Clinical Guideline on Subdermal Implants		**Yes**	**No**	**Remarks**
4.1	Professional nurses to ensure ordering and availability of ICM at PHC facilities at all times and shopping around at nearby facilities in case shortage of the device is experienced			
4.2	Facility managers must allocate the few trained/skilled professional nurses on insertion of ICM in such a manner that in each shift the service is rendered			
4.3	Availability of materials needed during insertion and removal of ICM ensured by staff inserting the service at PHC facilities			
4.4	The sterile technique should be followed to prevent unnecessary sepsis on the site of insertion			
GUIDELINE 5				
Promoting staff, community and individual activities to promote the uptake of ICM, through incorporation of and application of information from the SA National Contraception Clinical Guideline on Subdermal Implants				
There is an indication that SAW have knowledge about the availability of LARC in particular ICM at PHC facilities through incorporation of the HBM constructs		**Yes**	**No**	**Remarks**
5.1	Enrolled nurses, auxiliary nurses and CHW should be trained on ICM, to enable them to teach parents/guardians, SAW and teenagers on available and effective contraceptives at PHC facilities			
5.2	SAW should be encouraged to attend health promotion gatherings (social gatherings) to can gain more information on information regarding contraception and birth control			
5.3	SAW to know their rights and responsibilities with regard to health matters, they have right to information through consultation or enquiring about the correct information after hearing rumours about contraceptives			
5.4	There should always enough ICM stock at PHC facilities, to ensure availability and accessibility of the service to clients			
5.5	Youth friendly services to be intensified at PHC facilities to train youth boys and girls about contraception to gain sexual related information at an early ages of life			
5.6	Sexual partners/ husbands should be encouraged to visit health facilities with their sexual partners/ wives to be taught together, gain information on contraception to can support them when choosing method of contraceptives			

6.4.3 Level 3: Compliance with the outcomes

Professional nurses are expected to promote the use of ICM at PHC facilities in Vhembe District. Henceforward, SAW are expected to effectively utilize ICM as one of the LARC highly effective in prevention of mistimed pregnancies. This effective utilization of ICM will promote the uptake of ICM by SAW in Vhembe District leading to reduction of mistimed pregnancy and increased retention of the device until the prescribed period. The outcomes/goals of "promote the uptake of ICM" will be the following:

Positive perceptions about ICM: SAW compliance with the expected outcomes will be evidenced by relevant knowledge about the device with transformed mindset. These will be made possible by educative interactions with SAW through campaigns, visit to social gatherings and schools.

Retention of ICM until prescribed period: The changed individual perceptions will mean compliance with the functioning of the device, ICM with that understanding the insertion and the duration of the device in a human body. That will also mean effective management of ICM side effects with close cooperation with professional nurses.

Effective supportive social system: Fostering communities or public members including stakeholders will promote SAW support by families, sexual partners, parents and guardians.

Uptake of ICM: Positive perceptions, retention of ICM and effective supportive social system will ensure increase uptake of ICM. The expected ICM uptake, evidenced by PHC facilities monthly statistics on the Input forms and reduction of mistimed pregnancies in particular among teenagers.

Reduction of unintended pregnancy: That will be evidenced by low mistimed pregnancy reported by the Vhembe District.

6.5 Description of the model

In the current study, model description was established following the components by Chinn and Kramer (2008), which embrace purpose/goals, concepts, relationships, context, structure and process of the model. The authors further described model structure as powerful strategies for influencing people's views in real life. In this study, the researcher followed Chinn and Kramer's (1999) description of the model and structures according to six guidelines as which are:

- Goals

- Concepts
- Relationships
- Context
- Structure
- Process.

6.5.1 Goals

According to George (2010) the preferred outcome that the professional nurses are willing to accomplish are termed goals. The chief purpose for developing the model, to promote the use of ICM is to increase the optimal utilization of this LARC method (ICM) by SAW at PHC facilities in the Vhembe District, Limpopo Province. When the utilization of ICM is optimized, reduce unintended pregnancy rate and abortions will result, the retention rate of the device will increase. Mistimed childbearing will be reduced too and pressure on the country economy will be reduced as time goes on.

6.5.2 Concepts

The process of concept analysis conducted lead to identification of the characteristics of the concept “promote the uptake of Implanon.” Identification of the concepts in research study lead to proper combination of conceptual and theoretical definitions (Walker & Avant, 2013). Furthermore, the conceptual and theoretical definitions of the study clarify the meaning of the identified concepts within the developed model. In the present study, the definition of the concepts centered on the concept identification of concept analysis (Dickoff et al., 1968).

6.5.3. Relationships

In the current study, designing the relational statements through synthesizing the existing definitions, achieved the relationships. As indicated by Walker and Avant (2014) synthesis is the process and strategy that provides a mechanism for creating something new from the available (collected) data. From the remaining definition, the researcher will synthesize a definition of the concept “Promote the Uptake of Implanon” within the background of this study. The process of synthesis is to adjust to the current study as described by Walker and Avant (2014). The researcher has to develop statements that propose specific relationships among the concepts

under study. Knowledge for use in statement synthesis acquired through clinical interviews and integrative literature review**.**

6.5.4 Context

The context expresses understanding into the background socio-political situations that influenced the development of the model. However, the context of the developed model is a short-lived description of the main characteristics that may help gaining viewpoint of the full attributes following the structural and process descriptions of the model (Boderick, 2011). In the current study, the model comprised PHC facilities settings in which the model will be formulated and views of participants (professional nurses and SAW) and the reasons for model development.

6.5.5 Structure of the conceptual model

Model structures are determined by concepts identified and the relationship between these concepts. In the current study, the researcher has drawn sketchy diagrams representing structures of the developed model (Figure 6.7) illustrating relationship between identified concepts (Chinn & Kramer, 2005 cited in Mkhize, 2009).

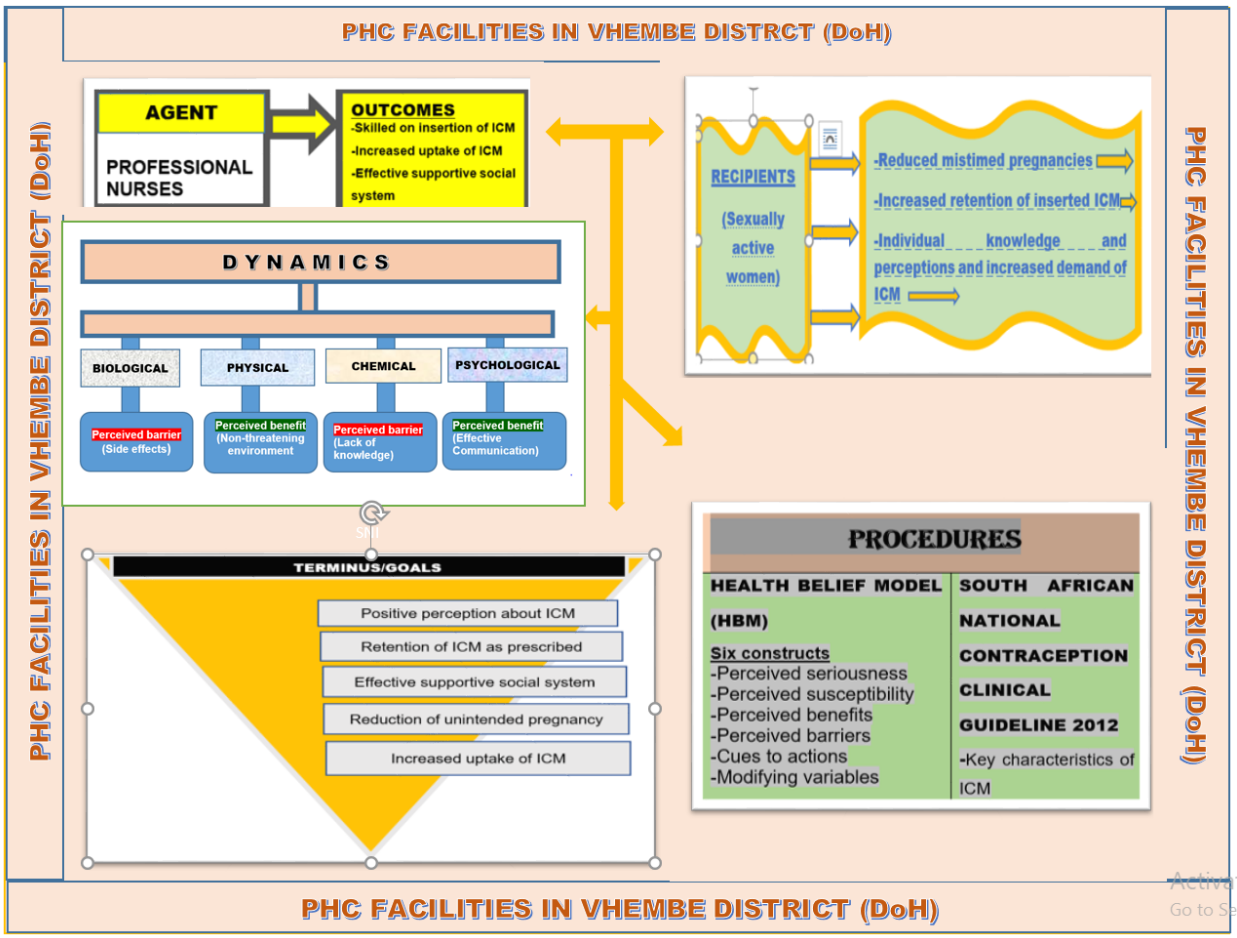

Figure 6.7: Conceptual model of "Promote the uptake of Implanon (Implant Contraceptive method

6.5.6 Assumptions

George (2010); Chinn and Kramer (2008) clarified that assumptions are reports or opinions that are widely accepted and central components of theory or model. The assumptions of the model based on the study findings and the use of SA National Contraception Clinical Guideline on Subdermal Implants and HBM. The initiation and insertion of Implanon (ICM), done by following the stipulated information in the SA National Contraception Clinical Guideline 2012.

- Both participants (agents and recipients) had their own beliefs and understanding towards LARC, ICM.
- Agents (professional nurses) and recipients (SAW) had personal attitude that influence the use of implantable contraceptives
- Recipients have family planning needs that should be met through effective provision of LARC, ICM irrespective of different influences that may prevent the provision process from being productive.

6.6 Model evaluation

According to Chinn and Kramer (1999), evaluation of a model ensures its effectiveness during the implementation process, in the current study it will be done following the guidelines for critical reflection of theory in **Table:** 6.2:

Table: 6.2: Model evaluation

Questions	Response
How clear is the model?	Clarity discusses how well the model is understood and ideas conceptualized consistently. Sematic clarity and consistency refers to understand-ability of theoretical meaning of the concepts. Structural clarity and consistency were done in the process of concept analysis (Section 5.3). The concepts, defined and used consistently to side-step confusion. Researcher used different structures in the model to guide the discussion.
How simple is the model?	Simplicity according to Chinn and Kramer (1999) is the minimal number of elements within the descriptive category or particular concepts and their relationship. The model is simple as the structure of "promote the uptake of ICM" could be followed by using the visual diagrams. The model is simple because its use could promote the skills in rendering RHS at PHC facilities.

How general is the model?	Generality brings up the extensiveness of the scope of the concepts and aim within the model. The model can be used at PHC facilities to promote the use ICM including other RHS in general, with the purpose of encouraging use of contraceptives, effective management of contraceptive side effects, increased retention of ICM and preventing mistimed pregnancies/ births.
How accessible is the model?	The model is accessible in the sense that it explained the existing experiences and the way the expected outcomes may be achieved, through implementation of the HBM constructs and SA Contraception Guideline. In the current study, the definitions of the concepts were the clues to accessibility of the model.
How important is the model?	The importance of the model as outlined by Chinn and Kramer (1999) depends on the professional values in nursing practice, education and research. This study addresses the extent to which professional nurses and SAW including public members can contribute to promote the uptake of ICM at PHC facilities.

6.7 Summary

In this chapter, the process of model development of “Promote the uptake of Implanon (ICM)” done, to establish how the concept fits within the RHS at PHC facilities. The model could be used in the facilitation of LARC use by SAW in Vhembe District. The formulated guidelines described to operationalize the developed model.

CHAPTER 7
MODEL VALIDATION

7.1 Introduction

The previous chapter charted model development following six areas outlined by Dickoff et al. (2008), model description, its' structures and operational process described. Chapter 7 deliberates model validation and justification for achievement of objectives of the current study as indicated in chapter 1. Justification of the study will be done to clarify contribution made by promoting the uptake of ICM to promote the health of SAW.

7.1.1 Purpose of model validation

- Evaluate applicability of the model at PHC facilities in the Vhembe District
- To find out the value and contributions that the developed model could promote the uptake of ICM

7.1.2 The objectives of this chapter

- To validate the developed model compared to rationale and purpose of the study
- To close the identified problems and collaboration between professional nurses and SAW/ public members.

7.2 Methodology for validation of the developed model

The validation process commenced after completion of the main research study. However, the researcher had insight on how the model will be used. The researcher presented series of questions to share knowledge on how the developed model may serve the purpose to promote uptake of ICM by SAW at PHC facilities in Vhembe District. Furthermore, it was indicated that realistic knowledge could be appropriate through validation (Chinn & Kramer, 1999), therefore validation was completed to discover whether the developed model was applicable to correct the breaches identified during the research study. Validation was done through the practice of quantitative research design method. The method was selected for its nature of generalization and because a huge amount of data can be collected within a short period.

7.2.1 Sampling

The two sub-districts, Musina and Thulamela, were sampled in the main study, and were used for validation. A purposive non-probability sampling method, employed to select participants to participate in the validation process (Burns & Grove, 2013). Researcher employed her judgement to choose participants with most required attributes and signified categories to validate the developed model for implementation.

The population comprised of 15 participants, of which five were OMN and ten professional nurses in participating facilities, who are involved in inserting ICM. The researcher presented the guidelines and checklist to chosen professional nurses and OMN for practice-based evidence i.e. to operationalize the developed model. Chinn and Kramer (2014) alluded that selecting health professionals for validation of the model in promoting health related behaviours is termed practice-based evidence.

7.3 Data collection

The researcher developed a validation tool in the form of checklist for all participants (Annexure J). A summary of the developed model and checklists delivered personally to participants. The researcher purposely sampled one OMN and two professional nurses per facility to validate the guidelines to operationalize the model and questionnaire to promote the uptake of ICM. The researcher adhered to all ethical considerations, participants signed consent forms. Participants encouraged answering questionnaire without discussing with each other.

Fifteen participants validated the guidelines of developed model grounded on its structure representation of simplicity, clarity, consistency, acceptability and ability to cover the scope. The method for data collection employed was quantitative method as the use of questionnaire was done. The researcher indicated the reasons for model validation as a means for assessing the applicability and efficiency of the model at PHC facilities in the Vhembe District. The researcher presented background information of the research conducted, findings of the study and the developed model guidelines. Questions that emerged from the validation criteria were clarified after presenting the information. The questionnaires constructed in English and participants had to tick the appropriate answer if they agree or disagree on the provided spaces. Spaces for remarks provided for inputs at the end of each intervention.

7.4 Data analysis

During data analysis, descriptive statistics employed to describe and summarize data collected during data validation.

7.4.1 Presentation of the results

The researcher presented the results using **Table** 7.1: Most participants agreed that the guidelines to operationalize the model developed was fitting well within their field of work, will facilitate and promote the uptake of ICM by SAW at PHC facilities.

7.4.1.1 Biographical data of the participants

Table 7.1: Indicates the biographical data of participants. A total of 15 participants were chosen to participate in the validation of the developed model. All participants are employed in the DoH in Vhembe District with experience of more than three years working at PHC facilities, ten participants inserting and five monitoring insertion of ICM. The reason for including OMN in the sample for model validation is because they report utilization of ICM on a monthly basis, moreover they are accounting officers of all services rendered at PHC facilities. These helped because knowledge and skills they had in RHS were considered in development of the model. The majority of participants aged between the ages of 50-59 (46.7%) which indicated that they were familiar with the culture of DoH‘s implementation of family planning policies and guidelines, most helpful in the development of the model.

The participants were selected for the reason that they are implementers of reproductive health services polices and guidelines, of which their ideas are crucial for applicability of the developed model. Almost 93.3% of participants (14) had more than three years of experience in the provision of RHS in particicular, ICM which assisted in the development of the model because the knowledge and skills they possessed in the field of family planning. The majority of participants had basic diploma or degree in nursing whereas those who were trained on ICM were ten professional nurses and OMN not trained. This indicates that there is need for training of OMN who are supervisors of all health programmes implemented at PHC facilities.

Table 7.1: Biographical data of participants

Race group	Frequency	Percentage
Professional nurses	15	100%
Age (years)		
20-29	1	6.7%
30-39	2	13.3%
40-49	4	26.7%
50-59	7	46.7%
60 and above	1	6.7%
Total	15	100%
Occupation		
Professional nurse	10	66.7%
Operational manager	5	33.3%
Total	15	100
Years of experience I inserting ICM		
1-3 years	1	6.7%
4-5 years	13	86.6%
> 5 years	1	6.7%
Total	15	100%
Highest level of education		
Diploma	6	40%
Degree	7	46.7%
Master's degree	2	13.3%
Total	15	100%
Trained on insertion of ICM	10	66.6%

7.5 Discussion of the Validation Results

Table 7.2: displays the responses of model validation in the current study. Fifteen participants participated in model validation process of this study. Of the 15 (100%) participated in the validation of the model, ten (66.6%) were professional nurses and five (33.3%) were OMN. Nearly all participants agreed with the developed model to close the gap of ICM underutilization by SAW at PHC facilities in Vhembe District. All participants (100%) agreed that the model is not difficult; henceforth, it gives a clear explanation/process on how to implement and how professional nurses should promote the uptake of ICM by SAW at facilities. Participants further agreed that the model clearly describes nurses' role in RHS. Moreover, it will enhance the skills of professional nurses on insertion of ICM to SAW.

All participants (100%) agreed that the developed model gives a simple explanation on how the uptake of ICM should be promoted at facilities. Of all 15 (100%) one participant (6.6%) indicated that there is some of the information that needs to be removed even though such information is not indicated. All 15 (100%) participants agreed that the model presented sufficient dynamics that affect the utilization of ICM. Additionally, all participants (100%) approved that the process in the model was consistent and can be applied practically. However, 15 (100%) participants agreed

that the model is important as it addressed the gap of ICM usage at PHC facilities. Acceptability of the model recommended by 100% of participants, also agreed that the model is consistent. Consequently, participants who validated the developed model had interest and proposed its' implementation. Likelihood is that professional nurses and OMN responses revealed consensus that a model to promote the use of ICM by SAW should be at PHC facilities. Some authors, Chinn and Kramer (2014) alluded that sharing of information with fellow professionals is important in the profession. Therefore, the assumption of the developed model may provide useful information that professional nurses and OMN need to promote the use of ICM by SAW at PHC facilities in Vhembe District.

Table 7.2: Results of validation

There is an indication that few professional nurses were trained to insert ICM to SAW requesting the device for birth control				
Guideline	Activity	Frequency	Percentage	Remarks
Ability to integrate theory to practice and application of the information from the South African (SA) National Contraception Clinical Guideline on Subdermal Implants	All professional nurses rendering RHS at PHC facilities to be trained to insert ICM and be supported by programme managers or supervisors from Vhembe District	15	100%	
	Newly introduced contraceptive method should be launched in all municipalities under Vhembe District to cover all areas receiving services from Vhembe PHC facilities	15	100%	
	Launching of newly introduced services must involve all stakeholders in the communities to impart knowledge to members of the public who have influence in child bearing process	15	100%	
	Continuous and constant information sharing among professional nurse is significant for effective RHS in the health facilities	15	100%	
	Management of perceived barriers that are believe to hinder utilization of ICM by SAW should be effectively practiced continuously by trained professionals	15	100%	

There is an indication that effective communication between SAW and professional nurses at PHC facilities to promote uptake of ICM through application of information from the SA National Contraception Clinical Guideline on Subdermal Implants				
Guideline	Activity	Frequency	Percentage	Remarks
Enhancement of effective communication to promote the uptake of ICM through incorporation of theory to practice and application of information from the SA National Contraception	Facility year plan indicate that there are months allocated for mass campaign and social gathering, school/home visits focusing on information giving to public members	14	93%	
	Facility daily health education programme indicate integration of RHS with other health services rendered at PHC facilities, and recorded in health education book as evidence	14	93%	
	Facility daily health education programme indicate integration of RHS with other health services rendered at PHC facilities, and recorded in health education book as evidence	14	93%	
	Facility daily health education programme indicate integration of RHS with other health services rendered at PHC facilities, and recorded in health education book as evidence	14	93%	

	SAW during antenatal care (ANC) and post-partum period SAW are given on use of ICM and recorded on patients' documents (maternity case record or booklet)	14	93%	
	Counselling skills: Professional nurses should undergo sufficient short course training on counselling, to empower them on preferred counselling skills.	14	93%	
	CHW's must be trained and sent to villages with full information related to Implanon (ICM) to recruit SAW to utilize the device	13	86%	
There is an indication that professional nurses at PHC facilities have knowledge about LARC, ICM introduced in SA in 2014 February, through application of information from the SA National Contraceptive Clinical Guideline on Subdermal Implants				
Guideline	Activity	Frequency	Percentage	Remarks
Professional nurses demonstrate knowledge about the newly introduced LARC, ICM through incorporation of theory to practice and application of information from the SA National Contraception Clinical Guideline on Subdermal Implants	SAW are treated with respect and dignity to in consideration of their uniqueness with regard to individual differences before insertion of ICM to can avoid complication	15	100%	
	Professional nurses to attend warm-up or refreshers' courses enabling to update their skills and for new developments about the device as needed	15	100%	
	SAW to visit facilities and consult skilled professional to share correct information and guidance regarding ICM, to clear the myths and rumours they heard from their peers, friends and relatives	15	100%	
	Professional nurses are approachable by SAW from different socioeconomic classes irrespective of their level of education, visiting facilities for RHS	15	100%	
	As part of support from professional nurses to SAW, ICM device must be shown to SAW during demonstration of how it is inserted on the upper arm of a woman	13	86%	
	SAW be given a relevant return date or referred to the nearest facility in case the nurse in that shift is on leave, rather than just turning the patient away without clear explanation or referral	15	100%	

There is an indication that availability and functionality of resources are maximised to promote the uptake of ICM by SAW, through incorporation of, and application of information from the SA National Contraception Clinical Guideline on Subdermal Implants

Guideline	Activity	Frequency	Percentage	Remarks
Promoting enabling environment confirmed by adequate resources, human, equipment's and materials to promote the uptake of ICM, through incorporation of theory to practice and application of information from the SA National Contraception Clinical Guideline on	Professional nurses to ensure ordering and availability of ICM at PHC facilities at all times and shopping around at nearby facilities in case shortage of the device is experienced	15	100%	
	Facility managers must allocate the few trained/skilled professional nurses on insertion of ICM in such a manner that in each shift the service is rendered	14	93%	
	Availability of materials needed during insertion and removal of ICM ensured by staff inserting the service at PHC facilities	15	100%	
	The sterile technique should be followed to prevent unnecessary sepsis on the site of insertion	15	100%	
	Professional nurses' should ensure confidentiality to gain trust and support SAW on informed decisions they take	15	100%	

There is an indication that SAW have knowledge about the availability of LARC ICM at PHC facilities through incorporation of the HBM constructs

Guideline	Activity	Frequency	Percentage	Remarks
Promoting staff, community and individual activities to promote the uptake of ICM, through incorporation of and application of information from the SA National Contraception Clinical Guideline	Enrolled nurses, auxiliary nurses and CHW should be trained on ICM, to enable them to teach parents/guardians, SAW and teenagers on available and effective contraceptives at PHC facilities	15	100%	
	SAW should be encouraged to attend health promotion gatherings (social gatherings) to can gain more information on information regarding contraception and birth control	15	100%	
	SAW to know their rights and responsibilities regarding health matters, they have right to information through consultation or enquiring about the correct information after hearing rumours about contraceptives	15	100%	

	There should always be enough ICM stock at PHC facilities, to ensure availability and accessibility of the service to clients	14	93%	No enough stock
	Youth friendly services to be intensified at PHC facilities to train youth boys and girls about contraception to gain sexual related information at an early age of life	15	100%	
	Sexual partners/ husbands should be encouraged to visit health facilities with their sexual partners/ wives to be taught together, gain information on contraception to can support them when choosing method of contraceptives	15	100%	

7.6 Summary

Validation of the developed model was conducted with 15 participants purposely selected at PHC facilities involved in the main research study. Participants agreed that the developed model is appropriate for promoting the use of ICM at PHC facilities in Vhembe District. Participants were given opportunity to make suggestions, which the researcher considered even though they were few. The following chapter presents the conclusions, limitations, recommendations and summary of the current study.

CHAPTER 8
CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

8.1 Introduction

The previous chapter presented and discussed model validation against its rationale, purpose and objectives. Validated data, collected from professional nurses and OMN working at PHC facilities in Vhembe District. Gabs not found from the developed model. This chapter focuses on conclusion, limitations and recommendations of the study.

8.2 Purpose of the study

The overarching purpose of this study existed to develop a model that will promote the use of Implant Contraceptive Method in Vhembe District, Limpopo Province.

8.3 Conclusion

8.3.1 Conclusion related to objectives of the study

The objectives of this study were as follows:

8.3.1.1 Qualitative research objectives only

Phase 1

- To explore the perceptions of SAW about the usage of ICM
- To identify the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District
- To explore professional nurses' views about factors contributing to the utilization of ICM by SAW
- To determine the available strategies to promote the utilization of ICM

Phase 2

- To conduct a concept analysis of core-concepts identified
- To develop a model to promote the use of ICM by SAW
- To validate the developed model to promote the use of ICM use by SAW

This process was attained through the following:

- Identification and description of the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District
- Determined the available strategies to promote the utilization of ICM at PHC facilities in Vhembe
- Exploration and description of the perceptions of professional nurses' views about factors contributing to the utilization of ICM by SAW and the perceptions of SAW about the usage of ICM
- Concept analysis and model development to promote the use of ICM by SAW in Vhembe District, Limpopo Province
- Validation of the developed model and guidelines formulated for implementing "A model to promote the use of ICM by SAW in Vhembe District" that will be used to improve the quality of RHS. Furthermore, validation was conducted with subjects' professional nurses and OMN to ensure that guidelines for implementation are suitable and relevant to the provision of RHS at PHC facilities in Vhembe District.

The objectives of this study were attained by utilization of qualitative approach. Semi-structured in-depth interviews were conducted with ten most senior professional nurses and five FGD methods were used to collect data from 62 sexually active women in qualitative approach. This study found that the qualitative findings answered the research questions. A model was developed by utilization of evidence obtained from data analysis in order to conduct concept analysis and develop "A model to promote the use of ICM by SAW at PHC facilities in Vhembe District" and to formulate guidelines to operationalize the model."

8.4 Summary of chapters in this thesis

Table 8.1: Summary of chapters in this thesis

Chapter	Descriptions
1	**An orientation to the study.** It is an introductory chapter. It discusses the background, rationale, significance of the study, problem statement, purpose of the study, research questions, objectives, conceptual framework, definition of concepts, the outline of the dissertation, a brief description of research design, trustworthiness as well as ethical consideration.
2	**Literature Review** This chapter discusses the literature review related to the topic of "A model to promote the use of Implant Contraceptive Method at PHC facilities in Vhembe District, Limpopo Province. The literature review has been discussed under the following headings: • Description of ICM

<table>
<tr><td></td><td>

Types of ICM
ICM's mechanism of action
Historical background of ICM
South African National Contraception Clinical Guideline on subdermal implants
SAW's knowledge about ICM
The factors that influence the utilization and non-utilization of ICM by SAW
Culture and contraceptive use
Professional nurses' views about factors contributing to the utilization of ICM by SAW
Psychosocial determinants of contraceptive use
Strategies

</td></tr>
<tr><td>3</td><td>Research Methodology
An overview of the methodology used presented in this chapter. This chapter designates the research design, research setting, population, sampling, data collection and data analysis of this study. Ethical considerations and measures to ensure trustworthiness are also deliberated.</td></tr>
<tr><td>4</td><td>Results and discussion: Data Analysis, Interpretation and Discussion
The findings of the study analysed, interpreted and controlled through the literature
<table>
<tr><th>Themes reflecting the views of professional nurses regarding the utilization of ICM</th><th>Themes reflecting the views of SAW regarding the usage of ICM</th></tr>
<tr><td>1. Description of the factors which contribute to poor uptake of ICM by SAW

2. Description of the factors which contribute to expected uptake of ICM by SAW

3.Strategies to be used to promote required uptake of ICM by SAW</td><td>1. Descriptions of the perceptions of SAW on the use of ICM

2.Description of the reasons that influence poor uptake of ICM</td></tr>
<tr><td colspan="2">Information gotten from professional nurses describing their views about factors contributing to the utilization of ICM by SAW revealed that there is underutilization of ICM in Vhembe District. In addition, the perceptions of SAW about the usage of ICM confirmed the underutilization of the device. Data analysis conducted independently following procedures of qualitative approach. This study found that the qualitative findings answered the research questions.</td></tr>
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<tr><td>5</td><td>Concept analysis
This chapter discussed the concept analysis phase two utilized in this study. Concept analysis conducted adapted the eight steps in the Walker and Avant Method to clarify and distinguish the definition of the main concepts. The definition of the main concepts are as follows:

Selecting a concept
Determining the purpose of analysis
Identifying all the uses of the concept
Determining the defining attributes

</td></tr>
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	• Contrasting the model case • Contrasting additional cases, borderline, related, contrary, invented and illegitimate cases • Identifying antecedents and consequences • Defining empirical references
6	**Model development** This chapter discussed the model development and model evaluation. A model to promote the use of ICM was conceptualized using the six areas as described by Dickoff et al (1968) as follows: • Agent: Professional nurses • Recipient: SAW • Context: PHC facilities • Dynamics: Biological factors: Treatment side effects Physical factors: Non-threatening environment Chemical factors : Lack of knowledge Physiological factors : Effective communication • Procedure: -Implementation of the key characteristics of the South African National Contraception Clinical Guideline - Implementation of the six construct of HBM Perceived seriousness Perceived susceptibility Perceived benefits Perceived barriers Cues to actions Modifying variables • Terminus: Positive perceptions about ICM Retention of ICM as prescribed Effective supportive system Uptake of ICM Reduction of unintended pregnancies

7	**Model validation** Model validated by subject professional nurses and OMN working at PHC facilities in Vhembe District. Model validation was conducted adopting Chinn and Kramer (1999) by posing the following questions: • Does the model give a clear direction on how it is to be implemented? • Is the model giving a simple explanation process on how the uptake of Implanon (ICM) should be promoted at PHC facilities? • Does the model presents appropriate dynamics/ underlying causes that affect the process of ICM uptake at PHC facilities? • Is there information that you can correct and or remove? • Does the model describe professional nurses' role in rendering reproductive health services? • Is the model consistent? • Is the model acceptable • From your own point of view, is the model important The topic understudy is an original study that may contribute to the body of knowledge hence the provision of quality RSH at PHC facilities may also improve, uptake of ICM.
8	**Conclusion, Limitations and Recommendations** This chapter provides the conclusion, including strengths and limitations of the research findings. There are also recommendations regarding the presented research, guidelines to operationalize the model and future research.

8.5 Limitations

The study was conducted in one of the five districts of the Limpopo Province, Vhembe District. Delays and slowed-down encountered during the first two years of the study, due to re-formulation of the study topic. In the Vhembe District, only two Sub-Districts were included in this study, Musina, the smallest and Thulamela the biggest of them all. Majority of nursing personnel were interested in this research study, very few lacked interest on introduction of the topic, more especially those not trained on insertion of ICM.

Less informed SAW were shy to talk about ICM, they do not have information about the newly inverted device, but interested on listening to those who have information. The model developed was presented to professional nurses and OMN at PHC facilities for validation. The targeted population showed interest to validate the developed model.

8.6 Recommendations

Recommendations were formulated based on the findings of the current study and to ensure that a model to promote the use of ICM is operationalized to improve provision of quality RHS at PHC facilities. The researcher made recommendations related to nursing practice, further nursing

research and nursing education. The researcher recommended that the application of the developed model be implemented at PHC facilities providing RHS in Vhembe District, Limpopo Province.

8.6.1 Nursing Practice

- For this service to run smoothly at PHC facilities, Vhembe District responsible managers to support professional nurses and OMN who are hands on rendering RHS. Introduction of new RHS such ICM require effective interventions by District managers, through training all CHW, professional nurses and OMN working at PHC facilities. CHW to continue giving information in the communities and refer SAW, partners and collaborates to health facilities for services. During outreach services, public members to be encouraged to visit PHC facilities for more information and questions regarding ICM.
- Involvement of all stakeholders (churches, women's groups, clinic committee members and ward counsellors meetings) in the communities during launching campaigns may facilitate the use of ICM.
- Mobile clinic staff to be trained to insert ICM at visiting points far from PHC facilities to avail the service.
- Professional nurses to encourage SAW partners and family members to support them in their childbearing ages, to visit clinics/PHC facilities for use of LARC.
- The developed model should be implemented in health facilities providing family planning services.
- Experiences of professional nurses during implementation of the developed model should be assessed and clarification given where necessary.

8.6.2 Nursing Research

- The developed model should be piloted and evaluated to identify areas to further improve the quality of RHS, insertion ICM.
- Model guidelines should be evaluated to determine its effectiveness during model implementation.
- Challenges faced by SAW in childbearing ages regarding newly introduced ICM need further investigation.
- Challenges of male sexual partners regarding giving support to their female partners is critical and need to be dealt with.

8.6.3 Nursing Education

The developed model should be included in continuous professional development programme to increase the knowledge and understanding of the ICM as one of LARC.

8.4 Summary

This chapter discussed the conclusion, limitations and recommendations of the study. Conclusion of this study addresses how the purpose and objectives were reached. The summary of the chapters within this thesis was highlighted. This chapter also outlined the limitations and the recommendations based on the research results. The main purpose of this study was to develop a model to promote the use of ICM at PHC facilities in Vhembe District, Limpopo Province.

The researcher implemented a qualitative strand only, which involved collecting and analyzing data from professional nurses and SAW. The qualitative approach was employed to meet the four objectives of Phase 1 in the current study. The objectives were to explore the perceptions of SAW about the usage of ICM, identify the factors that influence the utilization and non-utilization of ICM by SAW in Vhembe District. The third objective was to explore professional nurses' views about factors contributing to the utilization of ICM by SAW and the fourth one was to determine the available strategies to promote the utilization of ICM.

The three objectives of Phase 2 in this study were to conduct a concept analysis of core concepts identified which met by identifying core-concept "*promote the uptake of Implanon".* The other one was to develop a model to promote the use of ICM by SAW. The developed model followed the six components; namely, goals, concepts, definitions, relationships, structure, and assumptions as defined in Chinn and Jacobs (1987). The last objective to validate the developed model to promotion of ICM use by SAW. Subjects of the study, professional nurses and OMN at PHC facilities in Vhembe District validated the model.

The research revealed that launching of this newly inverted method did not cover all areas served by Vhembe District. Professional nurses and OMN should inform public members about newly introduced RHS at PHC facilities to enhance usage. That may be done through health education, mass campaigns and individuals, couples or family counselling about the new method.

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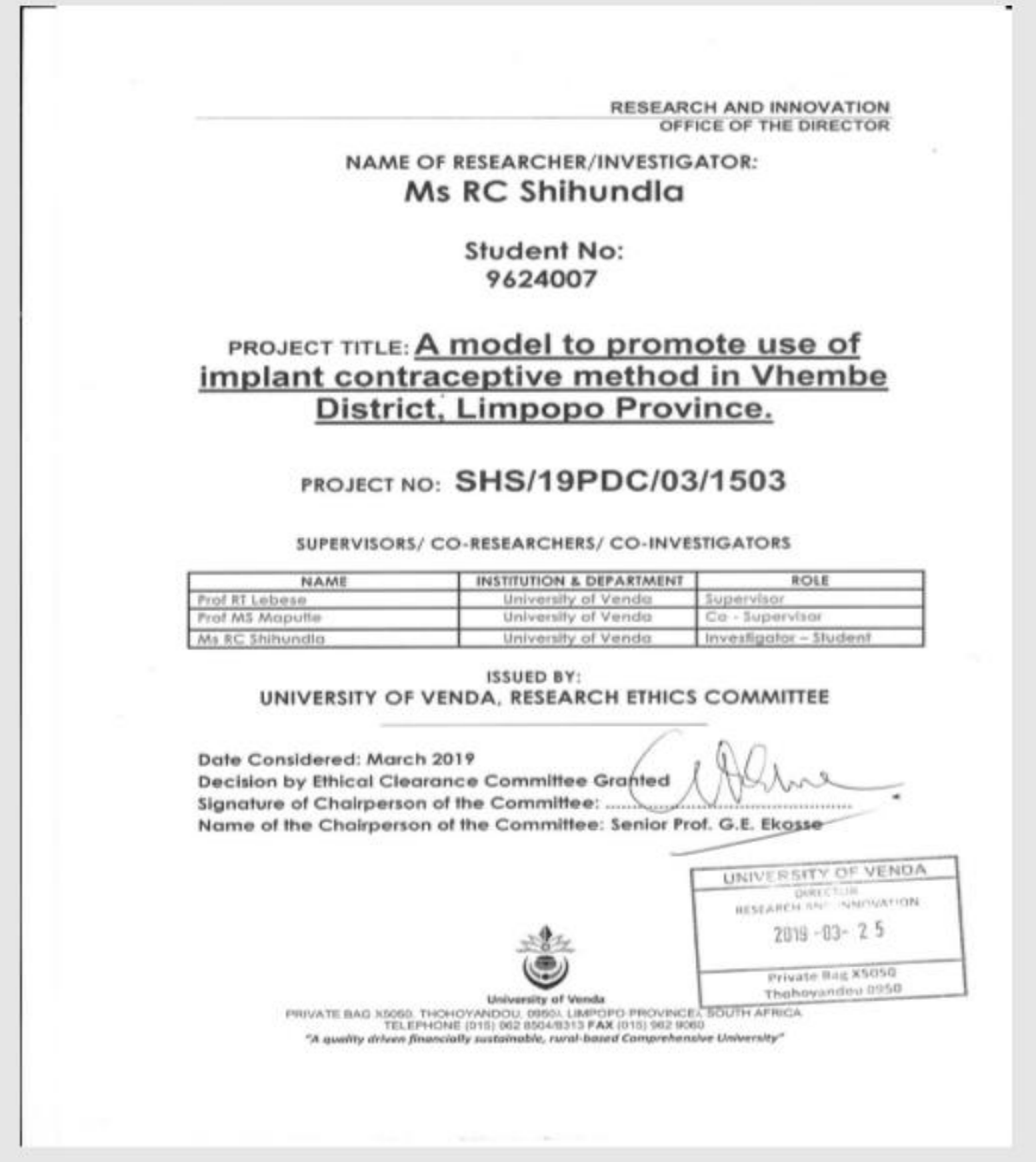
ANNEXURES

ANNEXURE A

Clearance Certificate from the University of Venda

Research Ethics Committee



RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms RC Shihundla

Student No:
9624007

PROJECT TITLE: **A model to promote use of implant contraceptive method in Vhembe District, Limpopo Province.**

PROJECT NO: **SHS/19PDC/03/1503**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof RT Lebese	University of Venda	Supervisor
Prof MS Mapulle	University of Venda	Co - Supervisor
Ms RC Shihundla	University of Venda	Investigator – Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: March 2019
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Senior Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2019 -03- 25
Private Bag X5050
Thohoyandou 0950

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 FAX (015) 962 9060
"A quality driven financially sustainable, rural-based Comprehensive University"

ANNEXURE B

Request for Permission to conduct the Study in Limpopo Province Department of Health Facilities

P.O. Box 305
Matavhela
0990
20 May 2019

Department of Health
Vhembe District
Thohoyandou
0950

Dear Sir / Madam

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY AT PHC FACILITIES IN VHEMBE DISTRICT

I Shihundla R.C., student NO:9624007, a Doctoral (PHDP) student at the University of Venda under School of Health Science, hereby request for permission to conduct a research study at Musina and Thulamela Sub-Districts PHC facilities in the Vhembe District.

Research Topic: "***A model to promote the use of implant contraceptive method in Vhembe District, Limpopo Province***".

All information gathered from participants will be treated confidentially and used only for the purpose of research. Participants in this case will be sexually active women and professional nurses at participating PHC facilities, at Musina and Thulamela Sub-Districts. The research will help the Department of Health, through provision of essential information on challenges faced in the implementation of polices and improve the use of implant contraceptive method by sexually active women at PHC facilities. Consult my Promoter Professor R.T. Lebese (015 962 8000) in case more information is required in the process of considering the request.

Yours faithfully
Shihundla R.C. 0738449222

Date: 20/05/2019

ANNEXURE C

Permission from Limpopo Province Department of Health to Conduct the Study

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Ref: LP_201904_004
Enquiries: Stander SS
Tel: 015 293 6650
Email: research.limpopo@gmail.com

SHIHUNDLA RC
University of Venda
Private Bag x 5050
Thohoyandou
0950

Greetings,

RE: A MODEL TO PROMOTE US EOF IMPLANT CONTRACEPTIVE METHOD IN VHEMBE DISTRICT, LIMPOPO PROVINCE

Permission to conduct the above mentioned study is hereby granted.

1. Kindly be informed that:-
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher
   - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
   - In the course of your study there should be no action that disrupts the services, or incur any cost on the Department.
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a 1 year period.
   - If the proposal has been amended, a new approval should be sought from the Department of Health.
   - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Head of Department

02/05/2019
Date

Private Bag X9302 Polokwane
Fidel Castro Ruz House, 18 College Street, Polokwane 0700, Tel: 015 293 6000/12, Fax: 015 293 6211.

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ANNEXURE D

Permission from Department of Health-Vhembe District to Conduct the Study

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OFHEALTH
VHEMBE DISTRICT

Ref: S5/6
Enq: Muvari MME
Date: 29 May 2019

Dear Sir/Madam..... SHIHUNDLA R.C

Permission to conduct a research on the "MODEL TO PROMOTE THE USE OF IMPLANT CONTRA".

1. The above matter refers.

2. Your letter received on the 29 May 2019 requesting for permission to conduct an investigation is hereby acknowledged.

3. The District has no objection to your request.

4. Permission is therefore granted for the study to be conducted within Vhembe District. You are expected to submit the results to the District.

5. You are however advised to make the necessary arrangements with the facilities concerned.

Wishing you success in your endeavors.

.....
CHIEF DIRECTOR: DISTRICT HEALTH

29/05/2019
DATE

Private Bag X5009 THOHOYANDOU 0950
OLD parliamentary Building Tel (015) 962 1000 (Health) (015) 962 4958 (Social Dev) Fax (015) 962 2274/4623
Old Parliamentary Building Tel: (015) 962 1848, (015) 962 1852, (015) 962 1754, (015) 962 1001/2/3/4/5/6 Fax (015) 962 2373, (015) 962 227

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ANNEXURE E

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

Title of the Research Study : A model to promote use of implant contraceptive method in Vhembe District, Limpopo Province

Principal Investigator/s/ researcher : Shihundla Rhulani Caroline,

Masters of Nursing

Co-Investigator/s/supervisor/s : Professor Maputle M.S (Co-supervisor) Professor Lebese R.T (Supervisor)

Brief Introduction and Purpose of the Study:

The purpose of this study is to develop a model to promote the use of Implant Contraceptive Method in Vhembe District, Limpopo Province. The study will employ the qualitative approach**,** using the contextual, explorative and descriptive design. The study will be conducted at PHC facilities in Thulamela and Musina Sub-Districts, in Vhembe District of Limpopo Province and the information will be reported as such without any alterations. Purposive sampling method, a non-probability sampling will be employed to select the two Sub-Districts and their respective PHC facilities and participants. The researcher seeks to interview the 10 most senior professional nurses, 2 per facility and 50 sexually active women in five focus group, one focus group per facility.

Outline of the Procedures

The researcher will inform the operational manager nurse (OMN) of the particular facility about the study and the procedure to recruit participants, sexually active women and professional nurses for the study. Then OMN will call all sexually active women coming for reproductive health care services, aged 18-45 years. The researcher will explain the criterions that lead one to participate in this research study. For professional nurses the OMN will identify professional nurses trained on insertion of ICM and the criterion for selection will be explained by the researcher.

The researcher will interview participants (semi-structured interview and focus groups) in a private room provided in each PHC facility to ensure privacy and prevent interruption. Most senior professional nurses (semi-structured interview) and sexually active women (in focus group discussion) will be asked questions based on factors that influence utilization and non-utilization of Implant contraceptive method using participant's local language. To save patients (sexually active women) 's time, in each facility the researcher will start with focus group discussion, may take 45-60 minutes then semi-structured interview that may also take 40-50 minutes. Participants are expected to be free when answering questions and the focus group discussion ground rules will be sent and the confidentiality binding form will be signed by each participant.

Inclusion/exclusion criteria

Inclusion: Sexually active women aged 18-45 years visiting the participating PHC facilities in Vhembe District for reproductive health service at the time of data collection. Most senior professional nurses trained on insertion of ICM and has two or more years of experience on inserting the device. Professional nurses must also be working in the PHC where the research will be carried out.

Exclusion: Sexually active women aged 18-45 years those from other Districts, mental health care users, and professional nurses trained but not hands-on, inserting ICM device will be excluded.

Explanation of tools and measurement outcomes

A voice recorder: A voice recorder will be used during interviews to capture information accurately. Permission to use a voice recorder will be obtained from the participants. Informed consent forms will be signed by the participants. The reason for using a voice recorder will be explained to the participants.

Field notes: Field notes will be written during interviews and temporary key words, cues or drawings that will assist to trigger the memory of the researcher about what will be happening during data collection. The notes will represent the observer's efforts to record information and to synthesize and understand the data (Polit & Beck 2008). Participants will be informed about the purpose for writing field notes.

Any follow-ups, any placebo or no treatment

The researcher is not intending to do any follow-ups but if the need arise the participants will be informed on time. There will be no placebo or no treatment as participants will be asked questions only.

Risks or Discomforts to the Participant:

Benefits

The study may help increase the body of knowledge about Implant contraceptive method by providing baseline information and make it available for health providers, policy-makers researchers, society at large and communities who need to practice birth control using the most cost-effective contraceptive method. The Department of health may benefit in this way, the effective use of the device until the prescribed time of removal will mean an improvement of the service and no waste of material will ever be experienced.

Reason/s why the Participant May Be Withdrawn from the Study

The researcher will clearly explain about the purpose of the study using participants' local language and check the principle of voluntary consent or willingness to participate in this research study. That is to indicate that participants have the right to withdraw at any given time without being penalised, which indicate that participation is voluntary.

Remuneration : **None, participants will not be remunerated.**

Costs of the Study : **No costs will be covered by participants for this study.**

Confidentiality : Participants names will not be used, numbers or codes will be used, for participants to remain anonymous throughout the study and this will always be adhered to. The researcher will assure participants that information gathered in confidence will be protected (Leedy and Ormrod, 2010, Polit and Beck, 2008), completed interview schedules will be kept safe, under lock and key, only be accessed by researcher and study supervisors. Moreover, it will be kept until the research report is accepted by the authorities concerned.

Research-related Injury : No research-related injuries are expected. No compensation will be offered, moreover the researcher, supervisors and facility operational manager will be contacted to offer help.

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

(Supervisor and details) Please contact the researcher Shihundla Rhulani Caroline (tel no. 073 8449 222), my supervisor Professor R.T. Lebese (tel no. 015 962 8000) or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the

Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, (Shihundla Rhulani Caroline), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: **SHS/19PDC/03/1503**,
- I have also received, read and understood the above written information (*Participant Letter of Information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I, …… …… …… ……..

(*Name of researcher*) Shihundla Rhulani Caroline herewith confirm that the above participant has been fully Informed about the nature, conduct and risks of the above study.

Full Name of Researcher

Shihundla Rhulani Caroline Date: …….. Signature……

Full Name of Witness (If applicable)

…… Date …… Signature……..

Full Name of Legal Guardian (If applicable)

…… Date…… Signature……

ANNEXURE F

Informed Consent Form

A model to promote the use of implant contraceptive method in Vhembe District, Limpopo Province.

I,……agree to take part in the research study. The researcher explained the research study to me. I understand, agreed and willing to take part in this research project:

- Be interviewed by the researcher;
- Allow the research to be voice recorded;
- Answer questions about implant contraceptive method;
- Make myself available for further interview or follow-up that may be required;
- Be informed about the research results; and
- Have the results used in the nursing publications or presentation.

I understand that the information provided by me shall remain confidential

- My participation is voluntary
- I can choose not to participate in part or the whole project; and
- I can at any time withdraw, from participating without being penalized or disadvantaged in any way.

Participants' signature: …….. Date: ……

Witness' signature: …… Date: ……

Researcher's signature: …….. Date: …….....

ANNEXURE G

Focus Group Confidentiality Binding Form

Research Topic: "*A model to promote the use of implant contraceptive method in Vhembe District, Limpopo Province.*"

The study purpose was described to me in language that I understand. My questions about the study were answered. I understand what my participation will involve and I agree to participate on my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits. I understand that confidentiality is dependent on participants' in the Focus Group. Maintaining confidentiality, I hereby agree to the following:

I agree to uphold the confidentiality of the discussions in the focus group by not disclosing the identity of other participants or any aspects of their contributions to members outside of the group. Should I have any questions regarding this study or wish to report any problems, experienced related to the study, will contact the researcher:

Researcher's Name: Shihundla R.C
School of Health Sciences
University of Venda
073 8449 222 nwagerman@gmail.com
Promoter's name: Professor Lebese R.T.
University of Venda @ 015 962 8000

Participant's name…….. Participant's signature……

Witness' name …… Witness' signature …….

Date……..

ANNEXURE H

Interview Guide for Professional nurses

Research Topic: "*A model to promote the use of implant contraceptive method in Vhembe District, Limpopo Province.*"

- What do you think are the factors contributing to utilization of ICM by SAW?
- What are the factors that influence non-utilization of ICM?
- What are the available strategies that can be utilized to promote the use of ICM?

ANNEXURE I

Interview Guide for Sexually Active Women (Focus Group Discussion)

Research Topic: "*A model to promote the use of implant contraceptive method in Vhembe District, Limpopo Province.*"

- In your own words, what are your perceptions about the usage of ICM?

- In your own words, what are the factors that influence utilization ICM?

- In your own words, what are the factors that influence non-utilization of ICM?

ANNEXURE J

Validation Instrument Questionnaire

INSTRUCTIONS

- Please tick or fill the appropriate gaps
- Do not write your name except the code provided
- Respond to all the questions
- Do not discuss your answer with anybody

Code : Operational manager = **A** Professional nurse = **B**

Section 1 : Biographical data

Participant code					
Age					
Gender					
Race group	African	White	Coloured	Indian	Other
	1	2	3	4	5
Nationality	South African			1	
	Other, please specify			2	
Occupation	Professional nurse		Operational manager		
	1				
Years of Experience					
Highest level of education	Basic Diploma/ Degree in Nursing			Master's Degree	
Tick……>>>>>>>>>	diploma		Degree		
Trained on insertion of ICM	Yes		No	If Yes, Years……	

Section 2: Data Distribution

No	Questions	Agree		Disagree		Remarks
		Frequ-ency	Perce-ntage	Frequ-ency	Perce-ntage	
1.	Does the model give a clear direction on how it is to be implemented					
2.	Is the model giving a simple explanation process on how the uptake of Implanon (ICM) should be promoted at PHC facilities?					
3.	Does the model presents appropriate dynamics/ underlying causes that affect the process of ICM uptake at PHC facilities?					
4.	Is there information that you can correct and or remove?					
5.	Does the model describe professional nurses' role in rendering reproductive health services					
6.	Is the model consistent?					
7.	Is the model acceptable?					
8.	From your own point of view, is the model important?					

ANNEXURE K

Transcript of a Professional nurse

Researcher: *Good day!*

Participant B: Good day!

Researcher: *How are you?*

Participant B: I am fine

Researcher: *I am Caroline Shihundla, a PHD student at the University of Venda. I am here to ask you few questions as I indicated before, that can assist me in my research study called 'A model to promote the use of implant contraceptive method in Vhembe District, Limpopo Province.' What do you think are the factors contributing to non-utilization of ICM by SAW?*

Participant B: There are false rumors about this method, from SAW 's peers and those who have ever used this method and when they hear about those they do not want to try to use the method they conclude that the rumors they heard is true. That is the main problem about SAW instead of visiting the facilities to find out from those who are rendering the RHS, they (SAW) just conclude. Some SAW experience amenorrhea, which they feel uncomfortable, as they are interested on the bleeding process on monthly basis. They believe that menstruating every month reduces weight gain and when they menstruate, they feel that pride that they are real women. They are fearful of side effects like bleeding irregularities, fear of falling pregnant while utilizing the method is another issue that prevents them from using ICM. Another side effect is weight gain; some think and fear that (ICM) may take long period before returning to fertility. Some patients (SAW) say we are just not interested in using this type of method due to lack of knowledge about this device.

Researcher: *What do you think are the factors contributing to utilization of ICM by SAW?*

Participant B: Those who used implant are fully informed about how it functions, they have full understanding about the methods including the benefits. The benefit they talk about is that it is LARC and there are no risks of falling pregnant, as it is highly effective method. Those who use it are interested as when they reach the term for removal they want to be inserted again. They say we feel pain once during insertion and for the second time after 3 years during removal of the device. It is unlike the injectable where you visit the clinic for being inflicted with needles every two or three months, four to six times per year. They visit the clinic frequently for review of

treatment, mean while those on ICM come once and for all, they visit when there is a need, for example irregular bleeding but they say they are not interested on irregular bleeding as one the side effects. SAW who use ICM, their interest rest on the effectiveness of the method. The Implanon device when removed it does not remain in the body like injectable, where a person may wait for up to nine to twelve months without falling pregnant. Its removal means immediate return to fertility. The device can be removed anytime without the medication remaining in the body like injectable, which remain and lengthen period of returning to fertility.

Participant B: Some SAW experience amenorrhea, which they feel comfortable, as they do not like the bleeding process on monthly basis. Their life plans are not interrupted when using this LARC because mistimed pregnancy is not a problem, this device prevent pregnancy up to 99% unlike other methods of family planning where one can fall pregnant if she forgets to take a pill or return date to be injected. They are feeling relaxed when doing their daily duties without thinking of the return date to visit their clinic.

Researcher: *What are the available strategies that can be used to promote the utilization of ICM?*

Participant B: 1. Health education will be the first one

One of the strategies is to teach SAW about the advantages of ICM and re-emphasized about the importance of preventing unintended pregnancy. SAW must first try to use the method; it is then that they can say the truth about the side effects unlike talking from rumors. SAW whose sexual partners do not want or agree with utilization of other family planning methods may find that this is the right method they can use. After full explanation on this type of method, it can help because they will make informed decision to use the method.

2. Peer education

As health providers, we can organize peer education by health professionals together with SAW who ever used ICM in the past. SAW who are on ICM may be summoned to share their experiences and explain their feelings and advantages of ICM to their fellow SAW. This will also involve experienced SAW who has used this method for full period of three years to tell them how ICM functions in human body as this differs according to individual hormones.

3. Teachable moments

The other issue is though information to those who are in need for using this method. This will enhance understanding and informed decision making on choosing the method. Even those

coming for consultation should be given information about the new method to help discourage the myths and rumors SAW heard from peers.

Researcher: *And the other strategy that you may add?*

Participant B: 4. Radio slot

There should be dedicated staff member who is knowledgeable and able to explain to the public about this ICM. This person should be able to answer relevant and irrelevant questions asked about ICM. He or she must be able to guide SAW who are willing to prevent unintended pregnancy for a long period.

5. Television slot

The Television slot that will demonstrate insertion and removal of ICM also show people who are on ICM can help people (SAW) to understand this type of family planning method. Even the television advert about ICM can help SAW understand as majority of people are interested on most adverts.

6. School health program

Teaching vigorously and repeatedly at schools, especially in secondary and tertiary levels, where education without disruption is required. It is possible to teach at primary school as we have programs that we use at school.

Researcher: *What else do you think of, as a strategy?*

Participant B: 7. Parent's information

Teaching parents' about this method and other different types of family planning available at facilities. It is important for parents to talk about sexual issues with their kids to prevent mistimed pregnancies, as this ICM is cost-effective. Moreover, there is this statement that says those who are sexual active and have started having sex, when taught about sexuality is not easy for them to stop. Therefore, it is important that parents start talking about sexuality and pregnancy prevention at an early age when kids are still at primary level.

8. Mobile clinics

To try to cover SAW far away from clinics, mobile staff must insert ICM during their visits at official identified points. Women should not be turned away without accessing such RHS, and told to visit the clinic for the service. The Vhembe District must also take note of this alarming challenge to include Mobile staff in the training for insertion of ICM.

Researcher: *What are the challenges related to availability of ICM at your facility in the previous three months?*

Participant B: There are no challenges of availability of ICM in this facility except that the method is underutilized by SAW according to the monthly reports observed. The other challenge is that our patients are not informed about the new ICM. The method is always available, we experienced shortage of other methods in the previous three months but ICM was readily available. I think the reason for availability of this device is that it is not a busy method like other SACM and injectable. It is not a busy method, as we insert one to three patients per month, not more than that.

Researcher: *Do you think it is accessible to the public as a whole?*

Participant B: Hmm… yes because nowadays clinics are closer to each other and patients are able to walk and arrive at clinics.

Researcher: *What advice do you give to your patients who are on ICM in relation to HIV/AIDS prevention?*

Participant B: ICM is an effective LARC but like other methods of family planning, it does not prevent HIV/AIDS and other STI's. They are bound to prevent spread of infections by using the barrier method, consistent use of condoms is encouraged. In addition, as professional nurses providing the services, we always remind them that the use of condoms need cooperation of the other partner that need good communication with the sexual partner, as the condom is user depended.

ANNEXURE L

Transcript of Sexually Active Women (Focus Group Discussion)

Researcher: *Good afternoon!*

Participants: Good afternoon!

Researcher: *My name is Caroline Shihundla from Mufulwi Village, Thengwe. I am a PHD student at the University of Venda, conducting research about 'A model to promote the use of implant contraceptive method in Vhembe District of Limpopo Province. Today we are going to talk about implant contraceptive method. With your own words, can you tell me your perceptions about the usage of ICM?*

Participant 1: I do not like Implanon because of fear of unknown as it is inserted into human body. I do not understand what is happening when it is remaining for a long period three years. The reason for that I think is I have not received full information about this new method since it was introduced. Nurses do not give health education like before or during the time they introduced the other contraceptives, I checked this several times.

Participant 2: Even me, I do not know whether it will affect my health or not, whether after removal there will be some changes in the body or not. Whether it may remain in my body for life or not, I feel afraid when I think of it even though I have not used it yet. Hmm! Sometimes rumors are true but sometimes they are not, we end-up being confused not knowing whether to use the device or not since we are not informed. Myself I am hearing this information in this interview and I am learning a lot since I just heard about the device by bits and pieces of information in different conversations with friends and peers.

Participant 3: I think in my mind, it may prevent pregnancy even in the near future that I may remain barren. When the device is inserted it causes swelling I observed one who had swollen insertion site which became septic. Then she ended up removing the device due to the mentioned reason and because it was very painful.

Participant 4: The bleeding discourages majority of us as SAW not to utilize the device. Continuous or irregular bleeding disturbs our sexual relationship. It turns what we think is normal

life to the so-called wrong direction. Our sexual partners emotionally become affected and that encourages them (males) to have multiple partners as every day the wife is menstruating.

Participant 5: I also see the bleeding problems as being unhealthy life style as no one is expected to bleed for the whole month without a break. It is really tiresome and disgusting even for those who do not understand to finish the whole month without having sex. The method is new, very few women have experience about the method and majority of them never shared their experiences, which causes fear to most SAW.

Participant 6: And as SAW, it is not good for not having sexual activities due to such disturbance of irregular or continuous bleeding. It makes life boring for both sexual partners.

Participant 7: As sexually active persons, we are also afraid as our partners may label us as having terminated the pregnancy (TOP) as some associate continuous bleeding.

Participant 8: It is also frightening because ICM is inserted on the less active arm. They say if one uses that arm more actively the medication that is released will be finished before the expected period of time (three years). That may lead one to fall pregnant. Some say the device (ICM) will be moving from site of insertion to the heart and kill a person (SAW).

Participant 12: The government might have observed that SAW are giving birth over than is expected, then they decided to bring this new method to de limit the unwanted process or this behavior of birth giving. I also see it as the method that want to reduce children who are born, and consume more government money in the form of child grant. I do not know the correct numbers of population sometimes you can see as a person that the country is overpopulated more especially during the days where women are earning children grant, so this can method can maintain this population.

Participant 13: There are rumors that people (SAW) are gaining weight due to amenorrhea after inserting the device (ICM). I have observed some SAW who gained weight who were using this method of birth control. Hmmm… I am also afraid to gain weight because majority of men dislikes heavy weight women and one may be divorced due to that. Majority of SAW does not want to gain weight remember it also mean changing your wardrobe which is expensive.

Participant 6: There is this myth that there should be no more children in South Africa as the country looks to be over populated due to poor birth control, hence introduction of ICM in 2014. Majority of women who do not use ICM believe that even after removal of the device the will be no more giving birth.

Participant 14: I am not sure of availability of this ICM at facilities because we have never requested it as we are using other types of contraceptives. One can just think it is not available mean while the method is available in numbers in the facility. We do not ask because we dislike the method generally.

Researcher: *What do you think are the factors that influence utilization ICM?*

Participant 2: I think SAW are interested because this new method, ICM last for a very long period, imagine three years. We serve money even though is little we can use the transport fees for other expenses at home unlike with other methods that requires us to revisit facilities more regularly for review of treatment.

Participant 4: We also have enough time to spend in our homes with children and our sexual partners that enhances partner relationship. There is no duty of remembering the return date to the clinic and that fear that one may fall pregnancy accidentally.

Participant 2: As ICM prevents pregnancies 99%, guaranteed as we have seen people using it never fell pregnant, it encourages some SAW with lower understanding or little knowledge to have sex without using condoms. This may promote an increase of new infections of HIV/AIDS and other STI's as they know they will not fall pregnant by forgetting injections.

Participant 3: ICM might be available because it seems majority of SAW are not using it due to lack of knowledge, it may remain available at facilities due to underutilization. The availability of the method is known, by those who use the method or those who came across information given by health providers and those who happen to ask in the facility.

Participant 12: In general, very few people in both sexes are accepting the method but majority do not accept it because they are not informed about it. Some women use ICM because they want to use and test new method despite its side effects with that point in mind that whenever we

come across problems or challenges nurses are there, we will be assisted. You will find the number of SAW doing this will be very few as compared to the whole population of SAW.

Researcher: *What are the factors that influence non-utilization of ICM?*

Participant 3: Lack of partner support, we do not have enough support on the side of male partners as they do not know much about family planning methods. Male partners who are not interested on issues of family planning are those who still believe that when a wife is on contraceptive method they get affected by myths such as waist pain they do not support ICM.

Participant 2: Our male partners believe that their sexual behavior may be affected too. Their activeness during sexual intercourse is reduced, their waist becomes painful and they may experience premature ejaculation at some point of time.

Participant 13: Lack of knowledge about family planning methods and sexuality in Black communities is a challenge as this method is made for SAW in different races for birth control. I believe that other races may be effectively using this method, once a method is introduced there is a need for such treatment even though SAW are reluctant to use it. I remember one older woman said even when injectable were introduced people were afraid to use it with lots of stories but as information was given continuously it is used now.

Participant 5: During my teenage time, we were never allowed to use family planning methods. Our parents could not talk to us about pregnancy prevention as they thought it would encourage youth to practice sexual activities before we are fully grown up. Therefore, it is also difficult for me to talk about family planning issues to my daughters and just believe that they will hear this information at clinics and media. We feel it is a sensitive issue to tell our children, we are not confident enough to talk about family planning with them as we think it may have future challenges in their lives. But, I learnt that it is difficult to accept and is hurting when your child come home being pregnant as you turn to think of the information you know about family planning, and it could have helped. I should have told my daughter but it is difficult for me to start. We emphasize when the daughter has given birth being afraid that she might fall pregnant again.

Participant 9: Inadequate parental support, for young girl's whose parent's knowledge is insufficient deny that foreign body is not good at all. Some say this may affect the fertility of young

people in the future. I think giving health education to teenage girl's parents to enhance support for those who experience early sexual active. Some parents turn to say it is not good for a girl to use family planning method before she has given birth. People have the myth that using contraceptive method to young girls affect fertility in the future leading one to be barren.

Participant 13: The other thing that causes poor support by parents is that they do not have knowledge on sexual issues. They never communicated sexual and reproductive issues with their biological children. Even to those who are learned, is still a challenge to talk about sex and family planning related matters and guidance to their kids. Some parents think they will be teaching their children to indulge on sex at an early age. It is difficult to teach someone about the information that you also were never taught, you just found out by yourself.

Participant 4: According to what I observed one day at one clinic, I think some nurses are not trained and have no information related to ICM. My friend was denied this service as nurse said that the one who insert the device is off-duty.

Researcher: *Really? Is that so?*

Participant 5: Yes, I also experienced that one of the nurses trying to discourage one client who was requesting ICM. She said to that woman come I would give you an injection I do not insert that (ICM), if not come some other time when the inserter is on duty.

Researcher: *Is there anything to talk about or question?*

Participant 1: It seems no.

Researcher: *In the absence of questions or comments, thus it means the end of our conversation today. In case of any clarification, talk to me using my contacts that I gave you. I appreciate your great efforts of sharing information with me, thank you all.*

ANNEXURE M

Confirmation by Language Editor

STEVENS EDITING AND PROOFREADING
~ Editing ~ Proofreading ~

BA: English; Industrial psychology (UNISA)
Sole Proprietor
Full Membership: (STE002)
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THIS IS TO CERTIFY THAT:

I have language edited a thesis for Ms Rhulani Caroline Shihundla.
Doctor of Philosophy degree –
Department of Advanced Nursing Science, Faculty of Health Sciences

University of Venda – Private Bag X 5050, Thohoyandou, 0950 South Africa

The title of the thesis is : A Model to Promote the use of Implant Contraceptive Method in Vhembe District, Limpopo Province

Ms Shihundla R.C. is a student at the University of Venda.; student no. 9624007; email: nwagerman@gmail.com, cell: 073 8449 222.

The scope of my editing comprised:

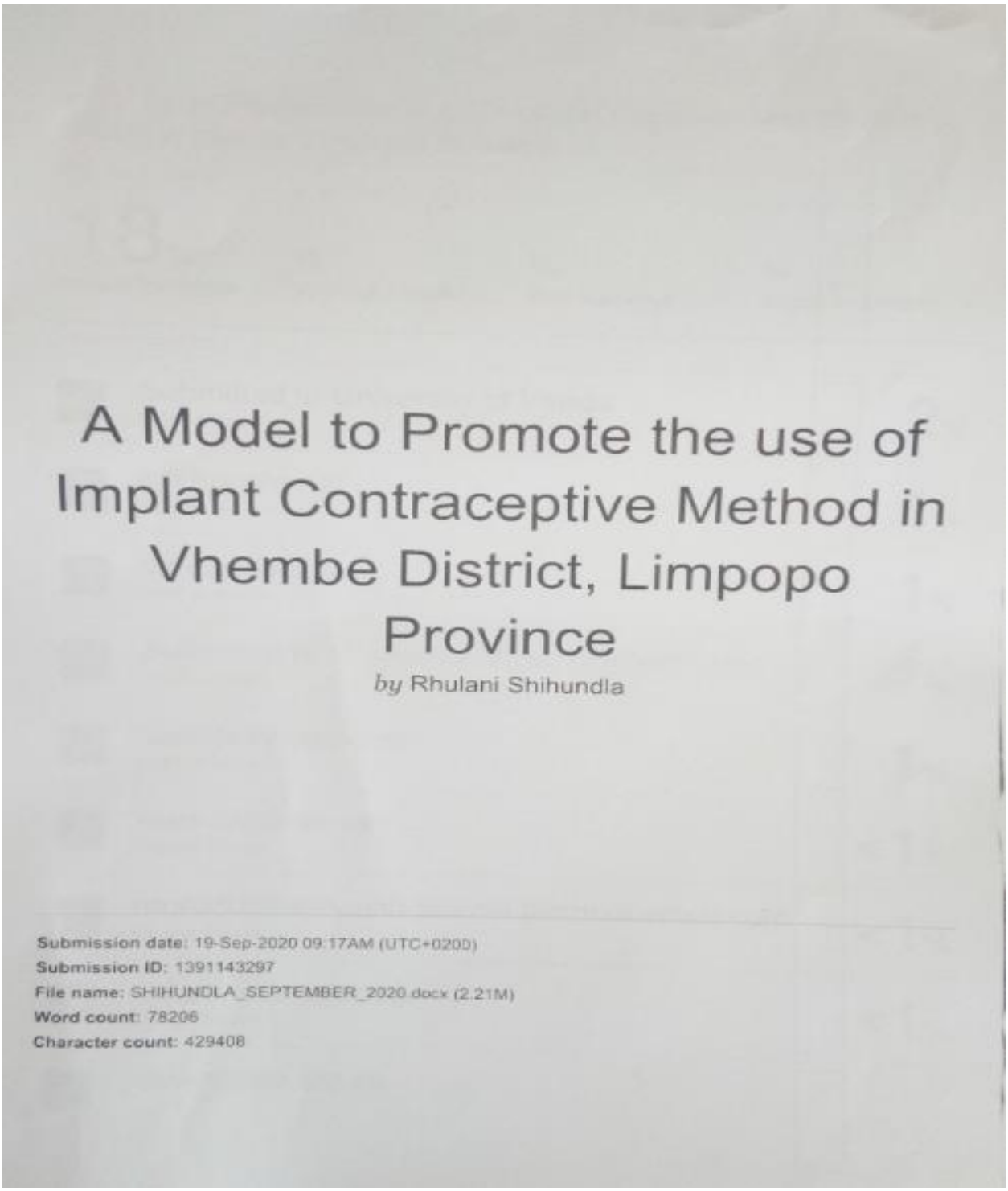
- Spelling
- Tense
- Vocabulary
- Punctuation
- Word usage
- Language and sentence structure
- Checking of in-text referencing style

It was a pleasure working with this student who communicated effectively and promptly. She presented the editor with a well-written document. My best wishes accompany Shihundla R.C. I wish her good success in her studies and career.

Yours faithfully,
Charlotte Stevens (Ms)
Stevens Editing and Proofreading
e: ajc.stevens@gmail.com
[Note: Signature withheld for security purposes.]

ANNEXURE N

Turnitin Report A



A Model to Promote the use of Implant Contraceptive Method in Vhembe District, Limpopo Province

by Rhulani Shihundla

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Submission ID: 1391143297
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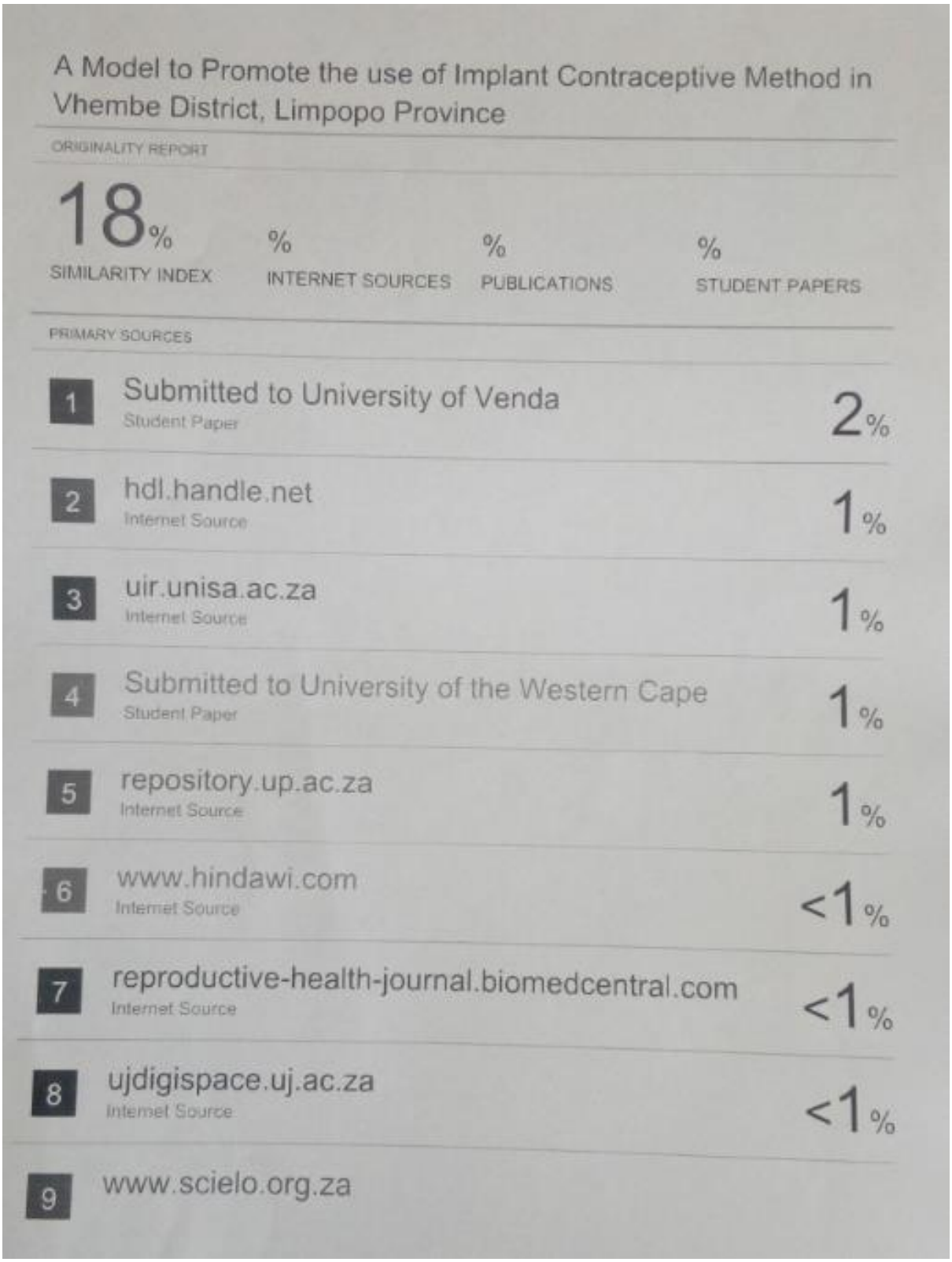
Word count: 78206
Character count: 429408

Turnitin Report B



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