KNOWLEDGE AMONG CHILDBEARING-AGE WOMEN REGARDING PRECONCEPTION HEALTHCARE SERVICES IN THE RURAL AREAS OF THULAMELA MUNICIPALITY, VHEMBE DISTRICT

by

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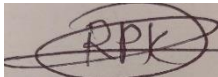**SUPERVISOR: DR RALIPHASWA NS**

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FEBRUARY 2023

DECLARATION

I, **Kubayi Refiloe Precious,** hereby declare that the dissertation entitled *"knowledge among childbearing-age women regarding preconception healthcare services in the rural area of Thulamela Municipality, Vhembe district"* has not previously been presented for a degree at this university or any other, that it is our original work in conception and execution, and that any citations made in it have been properly acknowledged.

Signature: Date: 14/02/2023

University of Venda

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SOUTH AFRICAN MEDICAL RESEARCH COUNCIL

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DEDICATION

This dissertation is dedicated to my late grandmother, Mrs Evelina Kubayi, who passed away on 19 February 2022. You will forever live in my heart, Granny.

KNOWLEDGE AMONG CHILDBEARING-AGE WOMEN REGARDING PRECONCEPTION HEALTHCARE SERVICES IN THE RURAL AREA OF THULAMELA MUNICIPALITY, VHEMBE DISTRICT.

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ABSTRACT

Background: Although Preconception Care (PCC) and Reproductive Life Planning (RLP) programmes were established by the National Department of Health (NDoH) for all women of childbearing age, most women do not receive the services. Although PCC is free throughout South Africa, including the area where the current study focused, majority of childbearing women still persistently miss this freely provided indispensable services. Thus, infant, and maternal morbidity and mortality rates are rising among this age group.

Purpose: The purpose of this study was to assess the knowledge among childbearing-age women regarding preconception healthcare services in the rural area of Thulamela Municipality, Vhembe district.

Methods: A quantitative, non-experimental, descriptive, and cross-sectional survey was adopted as the design followed for this study.

The population for the study comprised all women of childbearing age who met the inclusion criteria and were willing to participate from rural area of Thulamela municipality in Vhembe district. Purposive sampling method was used in this study. 117 respondents

were available and willing to participate in this study. Ethical clearance was obtained from the University of Venda, permission to access facilities from the province, and consent from the respondent was sought. Self-administered questionnaires were used to collect data. Statistical Package for Social Sciences, Version 27, was used for data analysis. The data analysis and summaries employed descriptive statistics, frequencies, and percentages.

Results: The findings showed that respondents (70,9%) were not aware of PCC in the Rural area of Thulamela municipality, Vhembe district while a minority (31.62%) reported that they could access PCC.

Conclusion: In this study, the use of PCC services was shown to be poor. The study recommends strengthening information sharing, health education and communication activities. Awareness towards childbearing women regarding PCC should be increased.

Keywords: childbearing age, child mortality, healthcare, knowledge, preconception, women

LIST OF ACRONYMS AND ABBREVIATIONS

CDC	Centers for Disease Control and Prevention
HIV	Human Immunodeficiency Virus
KZN	Kwa-Zulu Natal
NDoH	National Department of Health
PCC	Preconception Care
PHC	Primary Health Care
SPSS	Statistical Package for the Social Sciences
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization
SDGs	Sustainable Development Goals
HBM	Health Belief Model

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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

For every woman and partner to have a favourable pregnancy outcome, preconception care (PCC) is essential to improve the mother's and new-born health (World Health Organization WHO [WHO], 2013a). Maternal and child health has received much attention from conception until six weeks after the baby is born. However, according to data from the WHO (2013a), minimising health risks that could harm the woman and her unborn child after conception is typically somewhat delayed. This study aimed to establish knowledge gaps and opportunities for PCC knowledge that might improve maternal mortality rates and clinical outcomes.

PCC has been suggested to reduce the rate of unwanted pregnancies in women of childbearing age (Dean et al., 2014c). The unintended pregnancy rate varied from state to state and ranged from 40 to 65 unintended pregnancies per 1000 women aged 15 to 44, according to a study describing the unintended pregnancy epidemic in the US (Salazar & Sebastian, 2014). Therefore, the vital health intervention provided once a woman and her spouse decide to have a child would be too late in 40% of pregnancies (Singh, 2014). Related studies focused on accessibility antenatal care (ANC) and strategies to access PCC; there are gaps in identifying the knowledge of PCC among women of childbearing age; hence, this study is significant. Most rural areas have limited resources, resulting in limited access to care, including PCC. A quantitative, non-experimental, descriptive, and cross-sectional survey was adopted as the design followed in this study. Purposive sampling method was used in this study.

1.2 BACKGROUND

PCC refers to the delivery of biomedical, behavioural and social health measures to women and couples before they become pregnant with the goal of enhancing their health

and minimising behaviours, as well as individual and external factors, that may negatively impact the health of the mother and the unborn child (WHO, 2013a). Improving mother and child health outcomes in the short and long run is its goal (WHO, 2013a). This study only focused on women, excluding their partners. The Alma-Ata Declaration (2019) states that maternal and child health services are an essential part of primary healthcare. However, there is a lack of awareness of preconception healthcare services among women of childbearing age in rural regions, leading to high mortality and morbidity rates as well as unfavorable pregnancy results. Therefore, this study focused on the knowledge among women of childbearing age regarding preconception healthcare services.

In 2017, there were roughly 808 deaths of women worldwide each day because of pregnancy and childbirth problems (Mamo et al., 2021). Statistics show that every minute, 380 women get to be pregnant, 190 have unintended or unwanted pregnancies, 110 have complications associated with pregnancy, 40 have illegal abortions, and one woman passes away due to a pregnancy-related reason (Nepali & Sapkota, 2017). PCC has been shown to reduce the risk of preterm births for all women; prevent teenage pregnancy and unplanned pregnancies; improve prenatal weight; encourage a healthy diet that includes the use of supplements; screen for, identify, and treat mental health issues; and reduce intimate partner violence (WHO, 2012). Additionally, it encourages immunization of children and teenagers; prevents and manages STIs, including screening for HIV/AIDS; identifies and controls chronic diseases; encourages quitting smoking; and limits contact with smoke exposure (WHO, 2012). By eliminating behaviours and environmental factors that lead to undesirable pregnancy outcomes, this care strives to enhance people's health status (Lassi et al., 2014). However, according to the WHO (2013a) statistics, eliminating risk factors that could harm the woman and her fetus after conception is typically too late.

Preconception used in China, Iran, Nepal, and Canada is 40% (Ding, 2015), 47% (Shadab & Nekuei, 2017), 51% (Nepali & Sapkota, 2017), and 54.0% (Ontario, 2009) respectively. PCC use is considerably lower in developing nations than it is in developed ones, with rates of 7.9%, 9%, and 27.2%, respectively in Brazil, Sudan, and Sri Lanka (Nasimento & Borges, 2015; Ahmed & Mohamed, 2015; Patabendige & Goonewardene, 2013). Notwithstanding the measures in place, there has been limited global improvement

in maternal and child health findings over the past 20 years. Studies have shown that fewer than one in three women of reproductive age visited healthcare facilities and spoke with a healthcare professional before becoming pregnant about their general health and how it might affect the course of their pregnancy (WHO, 2013). PCC is acknowledged as a critical component in enhancing maternal health, but most childbearing women know little about the significance of preconception healthcare to infant mortality.

An estimated 303,000 women globally died in 2015 from problems associated with pregnancy and delivery, with South Asia and sub-Saharan Africa accounting for 99% of these deaths (Basha, 2019). Haemorrhage (27%), pre-existing medical problems (15%), hypertension (14%), sepsis (11%), abortion (8%), and other indirect causes (7%) are the leading causes of maternal mortality worldwide (Black et al., 2016). According to the Central Statistical Agency (2016), the maternal mortality rate in Ethiopia in 2016 was estimated to be 412 deaths per 100,000 live births, and the under-five mortality rate was expected to be 67 per 1000 live births. Planning a pregnancy is necessary to improve preconception health. Pregnancies are typically classified as planned if they occur at the "proper moment" and as unexpected if they occur at an unfavourable or unintended time (Ezer et al., 2019). The fetal organs have formed by the time most women become aware that they are pregnant and first interact with antenatal care. Thus, interventions to stop negative organogenesis-related pregnancy results usually come too late.

Although Preconception Care (PCC) and Reproductive Life Planning (RLP) programmes were established by the National Department of Health (NDoH) for all women of childbearing age, the majority of women do not receive the servicesas a result, all health professionals who come into contact with women of reproductive age must encourage them to make wise decisions and help those who are contemplating pregnancy improve their health and have the necessary information before becoming pregnant (National Department of Health [NDoH], 2015). PCC and medical benefits have been shown to improve maternal health outcomes. The maternal and child mortality rate is reduced by 57%, and the maternal and child morbidity rate is reduced by 73% when PCC is used effectively (WHO, 2016). PCC is viewed as an advanced chance to enhance long-term

outcomes for teenage girls, women, and children, practice family planning and lower maternal and neonatal mortality (Stephenson et al., 2018).

Non-pregnancy-related infections, obstetric haemorrhage, and complications of pregnancy-related hypertension were identified as the three conditions contributing most significantly to avoidable maternal deaths in South Africa's 2010–2013 National Committee on Confidential Enquiries into Maternal Deaths reports. In South Africa, particularly KwaZulu-Natal (KZN), the diseases mentioned above are linked to 66.7% and 56.8% of potentially preventable maternal fatalities, respectively (National Committee for Confidential Enquiries into Maternal Deaths, 2014).

According to Section 27(1)(a) of the Constitution of the Republic of South Africa (Act 108 of 1996), everyone has the right to obtain healthcare services, including reproductive health. Furthermore, Section 27(3) of the Constitution (Act 108 of 1996) states that no one may be denied access to emergency medical care. Therefore, it is possible to argue that the constitutionally guaranteed rights to obtain healthcare services extend to children's rights to basic healthcare and detainees and convicts to medical care (South African National Constitutional Assembly, 2017). However, having a right to something does not guarantee that one will receive it.

1.3 PROBLEM STATEMENT

A problem statement indicates the difference between the desired (goal) state and the existing (problem) state of a process or a product. It summarises a problem that needs to be solved or a condition that needs to be improved (Kush & Max, 2015). The formulation of an issue requires precise definitions of the terms used to identify the variables and their interactions (Maxwell, 2013; Bless et al., 2006).

According to a study by Schwartz & Baral (2015), preconception counselling is one of the most effective approaches for Human Immunodeficiency Virus (HIV) positive women who desire to become pregnant in the future to prevent transmission. However, this information seems to be lacking in most women of childbearing age. Family planning is

also a preventive measure against infant and under-five mortality. Despite a gradual drop from 2012 to 2015, Statistics South Africa [Stats SA] (2016) reported that Limpopo was the only province where more child deaths were reported in 2015 than in 2011.

During the researcher's undergraduate clinical studies, the researcher was placed at a local clinic in a village in Vhembe District. Most pregnant women there had limited knowledge regarding pregnancy, indicating a lack of PCC in their area. For instance, most women would come for ANC first booking late. Therefore, the healthcare workers would start educating them from scratch so the women could get an insight into conception. Rural area of Vhembe district is struggling to enhance the provision of healthcare services, because there are no health campaigns, no health promoters and the community members have little to no knowledge of the services to be provided to them. Providing healthcare depends on understanding rapid quality management, effectively providing the service, and providing quality data to create knowledge to support organisational decision-making and problem-solving (Marutha et al, 2018). Therefore, in light of the above, the researcher saw a need to conduct a study about the knowledge among childbearing-age women regarding preconception healthcare services in the rural area of Vhembe district, Limpopo province.

1.4 RATIONALE OF THE STUDY

The rationale of this study was to study the preconceptual knowledge among women of childbearing age in the Vhembe District and find opportunities to provide preconception knowledge that improves the health outcome and maternal mortality rate. Other studies and comparative studies in Malawi concentrated on preconception methods to enhance mother and infant outcomes. Therefore, this continuum still has a gap, especially for young women, who typically receive little or no healthcare from the age of 18 to their first pregnancy. Furthermore, antenatal treatment is too late to prevent the fetus from being harmed by a woman's health risks or issues during the critical phase of organogenesis. By ensuring ongoing health monitoring and early intervention, PCC completes the holistic

approach and ensures women have the greatest possible health before starting their pregnancies.

1.5 PURPOSE OF THE STUDY AND RESEARCH OBJECTIVES

1.5.1 Purpose of the study

Purpose of the is to understand "an event, activity, process, or one or more individuals" (Creswell, 2018). The problem serves as the basis for the research purpose, which determines the study's unique focus or objective (Grove & Gray, 2019).

The purpose of this study was to assess the knowledge among childbearing-age women regarding preconception healthcare services in the rural area of Vhembe District, Limpopo Province.

The following research objectives and questions summarised the research problem and guided the study:

1.5.2 Research objectives

Burns and Grove (2020) describe research objectives as "clear, concise, declarative statements given in the present tense and for simplicity with only one or two aspects." Brink, Van der Walt and Rensburg (2012) emphasize that research objectives are clear, concise and declarative statements written in the present tense. The objectives of this study are to:

- Determine the knowledge among women of childbearing age regarding preconception healthcare services on risk prevention of pregnancy in Rural area of Vhembe district.
- Describe the attitudes of women of childbearing age towards preconception care knowledge.
- Identify the healthcare services received on risk prevention before pregnancy by women of childbearing age in Rural area of Vhembe district.

1.5.3 Research questions

A research question is an explicit, present-tense, interrogative statement that comprises one or more variables and is intended to direct the conduct of the study (Grove & Gray, 2019). The objectives were specific and reflected the title. Different research questions and objectives required different methodologies. In this study, the research questions were posed as follows:

- Do women of childbearing age know the preconception and risk prevention healthcare services before pregnancy at Rural area of Vhembe district, Limpopo Province?
- What attitudes do women of childbearing age have toward preconception healthcare services at Rural area of Vhembe district, Limpopo Province?
- What the healthcare services received on risk prevention before pregnancy by women of childbearing age in Rural area of Vhembe district?

1.6 SIGNIFICANCE OF THE STUDY

This study benefits women of childbearing age by empowering them to make informed decisions about seeking healthcare before pregnancy. It also enhances family and social support systems for women of childbearing age regarding preconception healthcare services in Rural area of Vhembe district. This study illuminated some of the challenges experienced by women of childbearing age regarding preconception healthcare services in Rural area of Vhembe district. This study yields positive financial benefits to healthcare organisations by reducing maternal and infant hospitalisations. The realisation is primarily beneficial to women of childbearing age as they are armed with knowledge on challenges and how to overcome them. Most women continue conceiving without knowing what caused the premature death of their child due to a lack of understanding of PCC. Bringing forth knowledge about the preconception of women of childbearing age contributes to reducing the child mortality rate, which may reduce fertility rates in developing areas. Working with community partners, such as home-based care workers, might improve the knowledge distributed to the community about health issues.

This study highlights the importance of healthcare accessibility because, in most rural areas, there are various barriers to healthcare accessibility. This study might also help the nursing industry respond to changes in the healthcare environment, patients, population and government regulations. The findings of this study could set the stage for additional research on this topic or related themes, which might provide results that differ from those of the previous researcher. This study might also benefit the community with social factors such as women empowerment, improved communication, and increased participation of couples in decision-making around birth abnormalities, birth spacing, etc. Informing women about preconception might reduce the rate of child mortality and morbidity caused by health complications which benefit the Department of Health regarding the use of medical equipment because less equipment will be used. Additionally, recommendations could be made to enhance preconception healthcare services; hence, increasing their accessibility and use by women planning to have children to reduce pregnancy risks.

1.7 CONCEPTUAL FRAMEWORK

The Health Belief Model (HBM) served as the theoretical foundation for this study. The HBM was utilised to explain why childbearing women did not utilise it or what prompted them to seek PCC before becoming pregnant. The HBM is described in detail in Chapter 2; the illustration of key ideas that underlie HBM is also presented. The HBM was chosen as the best framework for the study because PCC for childbearing should be viewed as a reflection of both the individual woman's and society's health belief system (HBS).

HBM is a theory of value expectation (Hanson & Benedict, 2002). Value-expectancy concepts could be interpreted in the context of health-related behaviours as the desire to have a safe pregnancy outcome, prevention of pregnancy complications, abnormal babies, and prevention of STIs, HIV/AIDS, or to remain well, and the belief that a specific health action (attending PCC) and the availability to a woman would prevent illness during pregnancy or prevention of unplanned pregnancies.

The HBM assumes that a course of action, effective utilisation of PCC services available to childbearing women, would be beneficial in decreasing either their susceptibility to or the severity of (repeated) accidental pregnancies or giving birth to defective neonates. Healthcare professionals brought up the fact that many of the women they treat are coping with personal obstacles that may prevent them from attending PCC appointments. In addition, the majority noted that PCC visits might not be as valuable due to logistical issues with transportation and childcare (Heaman et al., 2015). This study used six HBM concepts, namely, perceived susceptibility, perceived barriers, benefits, perceived cost, efficiency, and cues to action (see section 2.3.1).

1.8 DEFINITION OF KEY TERMS

- **Knowledge** is derived from information but is more meaningful than information (Servin & De Brun, 2005). In this study, knowledge is referred to as understanding information about preconception healthcare services.

- **The childbearing age** is the age range in which a woman can become pregnant (Centers for Disease Control and Prevention, 2017). For example, it can be defined as being between 16 and 49. In this study, childbearing age refers to women aged 18-35 who can conceive or become pregnant.

- **A woman** is an adult female human being (Mosby, 2019). In this study, a woman is defined as a female between 18 and 35 capable of conceiving.

- **Preconception** is a woman's health before she becomes pregnant (Office on Women's Health Pre-Conception, 2017). In this study, preconception is referred to as the well-being or health of women before they conceive.

- **Healthcare** is a state of physical, mental, and social well-being that is more than the absence of disease or infirmity (WHO, 2011). In this study, healthcare is referred to as the maintenance and improvement of treatment, prevention, recovery and cure of illness, injury and other physical, emotional and mental harm to women prior to their pregnancy.

1.9 RESEARCH DESIGN AND METHODS

1.9.1 Research design

This study used a non-experimental, descriptive, and cross-sectional survey as a research design to learn more about the knowledge of women of childbearing age about preconception healthcare services in the rural area of Vhembe District, Limpopo Province. The goal of such a design is to provide a detailed description of the phenomenon being investigated so that it can be addressed (Burns & Grove, 2020).

1.9.2 Setting of the study

This study was conducted at rural area of Thulamela municipality in Vhembe district, 50 kilometres from Thohoyandou, the capital city of Vhembe District, Limpopo Province. According to the Census (2011), Vhembe District is the most populated district in Limpopo, with 1 294 722 inhabitants. The population at rural area of Thulamela municipality in Vhembe district 2,325 in a 2,79-squire area. The study was conducted in the village at the respondents' respective homes.

1.9.3 Population and sample

1.9.3.1 Population

A population is a clearly classified group with distinct characteristics. People, animals, objects, or events can all be part of a population. The chosen population consisted of women of childbearing age in order to assess their knowledge regarding PCC at rural area of Thulamela municipality in Vhembe district, Limpopo Province. The accessible population of the study was women of childbearing age who reside in Rural area of Vhembe district in Vhembe District, Limpopo Province.

Women who satisfy the inclusion criterion but are not mentally stable were excluded from the study, while women who meet the inclusion criteria but are not of childbearing age were classified among the accessible population.

1.9.3.2 Sampling technique

Sampling is the process of choosing a sub-section of a population to represent the entire population (LoBiondo-Wood & Haber, 201). On the day of data collection, the researcher went to Rural area of Vhembe district and respondents were sampled purposively from the households with respondents who met criteria. Questionnaires were distributed to respondents who were present and willing to participate in the study on the days of the visit (Burns & Grove, 2020). The questionnaire was developed in English and subsequently translated into Tshivenda by a language expert from the University of Venda in order to accommodate all the respondents, as the dominant language is Tshivenda. This was also to ensure that even those who could not read and write English well were also allowed to participate in the study if they were willing. Respondents were also given a chance to sign consent form voluntary without being forced as long as they were comfortable to participate in the study.

The researcher chose subjects who met the inclusion criteria to avoid bias (refer to Chapter 3). Respondents for the study were chosen using purposive sampling at Rural area of Thulamela municipality in the Vhembe District at the royal house where they were asked to come for this study. The sample consisted of 117 women of childbearing age.

1.9.4 Data collection instrument

A structured, pre-tested questionnaire was used to collect data. The researcher arranged the questionnaire. The research methodology used in this study is discussed in detail in Chapter 3.

1.9.5 Data analysis

The researcher encoded and computerised the data using the Statistical Package for Social Sciences (SPSS) Version 27. Descriptive statistics, frequencies, and percentages were used in the data analysis and summaries.

1.9.6 Generalisability

Respondents from Rural area of Vhembe district in Limpopo Province were interviewed on the topic of interest. The respondents were purposively chosen. Thus, the findings will not be generalisable to the entire population under study.

1.9.7 Ethical considerations

Ethical considerations were followed during the research process. Permission to conduct this study was obtained from the University Higher Degree Committee and the Chief of Rural area of Vhembe district to ensure ethical conduct.

Each research participant provided informed consent. To maintain confidentiality and anonymity, neither the respondents' nor the institution's names were recorded on the questionnaires. Moreover, as the study was non-experimental, there were no physical or psychological risks. The study's ethical considerations are discussed in detail in Chapter 3, section 3.3.

1.10 DELIMITATIONS OF THE STUDY

Interviews were conducted with 117 respondents at Rural area of Vhembe district in the Limpopo Province using a standardised questionnaire. Although similar outcomes could be attained in other regions, they may not be viable to generalise the findings of this study outside of the region in which the research was conducted. According to Burns and Grove (2020), constraints are restraints on a study that can lessen the generalisability of the findings. Conceptual and methodological limits are the two different categories. The results cannot be abstractly generalised due to conceptual constraints. The methodological limitations limit the population to which the results can be generalised (Burns & Grove 2020). Furthermore, the results of this study were gathered and submitted by childbearing women from the only sampled village in the Vhembe District, restricting the applicability of the findings to many other regions of the Limpopo Province.

1.11 OUTLINE OF THE STUDY

Chapter 1 discusses the study's background, rationale, research problem, goals, significance, research design, methodology, ethical considerations, key terms and summarises the chapter.

Chapter 2 reviews the literature on women of reproductive age's understanding of preconception healthcare services.

Chapter 3 discusses the research design and methodology, including the population, sampling, data collection, and data-gathering tool.

Chapter 4 analyses and interprets the data from the study.

Chapter 5 presents the findings, recommendations for future research, and methods to raise awareness of preconception healthcare services among women of reproductive age in the rural area of Thulamela municipality in Vhembe district.

1.12 SUMMARY

This chapter briefly discussed the background of the study; rationale; problem statement; the significance of the study; conceptual framework; research design and methodology; including population and sample, data collection, reliability and validity; and ethical considerations. The study's key terms were also defined. Chapter 2 reviews the literature pertaining to this study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter presented the orientation to the study. The current chapter deals with the relevant literature review pertaining to the knowledge among women of childbearing age regarding PCC services and their utilization.

2.2 REASON FOR A LITERATURE REVIEW

A literature review assists the researcher in setting the groundwork for the study by introducing the reader to theoretical or practical concerns related to the subject. A comprehensive summary of the information available on a subject of interest is, referred to as a literature review, frequently written to contextualize the research challenge (Polit & Beck, 2017). A literature review often includes an overview, synthesis, and critical evaluation of prior research, a challenge or problematization of accepted knowledge, the identification or formulation of new research challenges, and the formulation of potential research questions (Boell & Cecez-Kecmanovic, 2015). PCC is essential to ANC because it lowers the risk of maternal and infant mortality, birth defects such as neural tube defects, low birth weight babies, preterm babies, and post-term babies. It also promotes a healthy pregnancy and outcome for the fetus and increases readiness for pregnancy (WHO, 2013b). The Inter-Agency Group for Safe Motherhood created a package of PCC services in 2012, including family planning, adolescent reproductive health education programmes, and others (Moos et al., 2018). The WHO's Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013–2020 has increased awareness of the significance of PCC (Ojukwu et al., 2016).

2.3 CONCEPTUAL FRAMEWORK

The study's framework organises and provides a context for the researcher to evaluate the issue, collect, and analyse the data (Brink et al., 2012). According to Burns and Grove (2020), a framework is "the abstract logical structure of meaning that directs the progress of the study and permits the researcher to link the findings to the body of knowledge that defines nursing science and/or health science."

The HBM (see figure 2.3) served as the study's theoretical framework. According to Brink et al. (2012), theories help researchers understand the phenomena of interest and the causes of their occurrence. They also help researchers connect observations and facts into an organised framework.

According to Abraham and Sheeran (2015), US public health researchers started creating psychological models in the 1950s to boost the efficacy of health education programmes. For example, a free TB health screening programme's failure led to the Health Belief Paradigm, a social cognition model emphasising health (Coulson et al., 2016). Health professionals and behavioural scientists wanted to determine why and when people took steps to prevent, identify, and treat diseases. The model is used to inform intervention design and evaluation and is a validated method of identifying correlates of health behaviours that may be significant in behaviour changes (Skinner et al., 2015). The health behaviours that have been emphasised have been highly diverse, varying from health-improving behaviours like exercise and healthy eating to health-productive behaviours including going to health screening clinics, getting immunized against diseases, and using condoms in response to the threat of AIDS, to avoiding health-harming behaviours like smoking and excessive alcohol consumption and sick-role behaviours, and following prescribed treatment plans (Abraham & Sheeran, 2015).
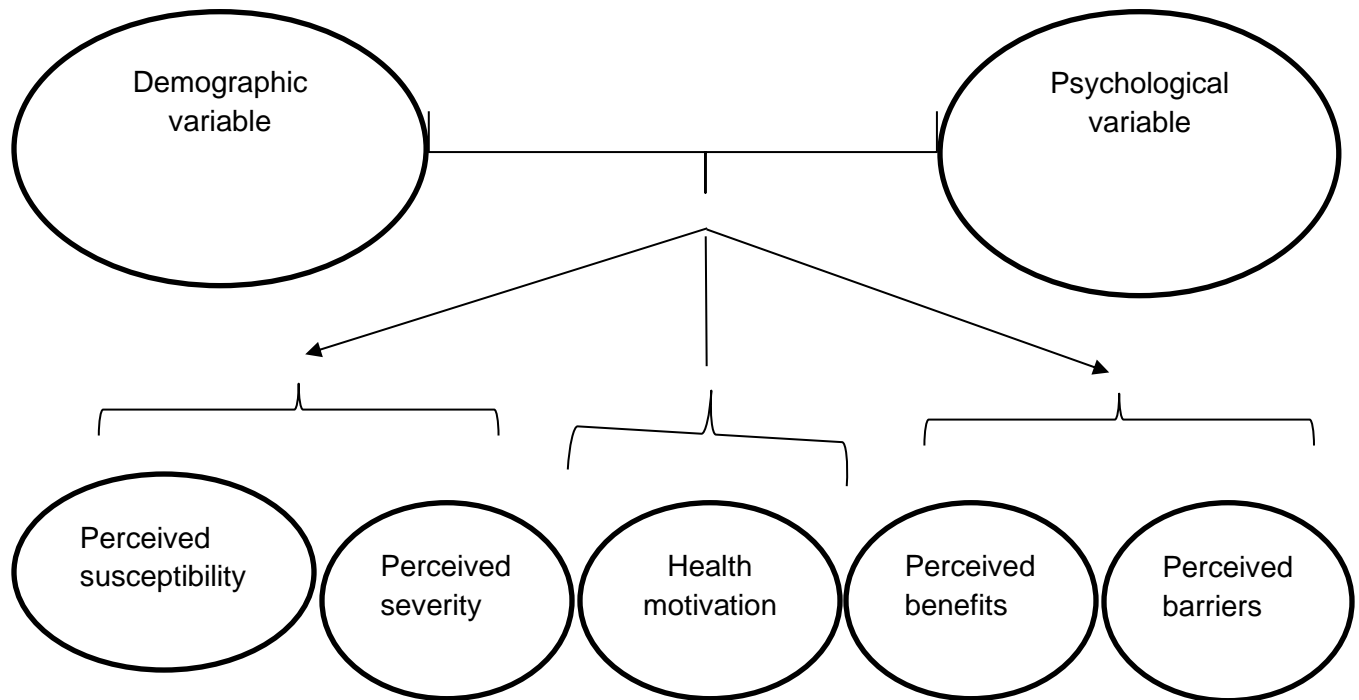
Figure 2.3: Diagram of Health Belief Model

2.3.1 Brief description of the Health Believe Model

This model was chosen as the most appropriate for this study because preconception reflects a person's behaviour toward the practice of HBS of both the individual woman and the broader society. The following elements contribute to how HBM works: moderating variables (culture, education level, prior experiences, skill, and motivation, to name a few); cues to action (family member's illness, media reports, mass media campaigns, advice from others, reminder postcards from a healthcare provider, or health warning labels on products); and self-efficacy (belief in one's own capacity to act). These elements affect how serious, susceptible, and advantageous we perceive something to be (Paek et al., 2011). Six major components of the HBM were identified and used in the study (Tarkang & Zotor, 2015):

- o   perceived susceptibility
- o   perceived benefits
- o   perceived barriers

- o perceived cost
- o efficacy
- o and cues to action

2.3.1.1 Perceived susceptibility

Perceived susceptibility is described as the "individual's perception of the degree of his/her susceptibility to a health problem" (Frewen et al., 1994).

Wallace et al., (2003) posit that perceptions of pregnancy susceptibility might encourage women of childbearing age to use preconception healthcare services. However, a study in the United States of America (USA) shows people have different beliefs. For example, some women of childbearing age would seek PCC to check if they had any aberrant genes. However, certain individuals report unplanned pregnancies; therefore, such women of childbearing age failed to use PCC service, although they perceived themselves to be susceptible to developing abnormalities during pregnancy.

2.3.1.2 Perceived severity

In perceived severity, the client is concerned about disease or problems associated with the non-use of PCC, such as willingness to seek preconception before pregnancy. Risk perception influences whether people engage in preventative health behaviours, including getting protective health exams (Champion & Skinner, 2008). Mitchell, Littlefield, and Gutter (1999) discovered that 88.0% of their respondents understood the importance of their partners informing them of any services that must be completed prior to becoming pregnant.

2.3.1.3 Perceived threat

Perceived threat is between two beliefs: perceived susceptibility to illness or health breakdown and anticipated severity of the consequences of such illness (Conner & Norman, 1996). In this study, the implications of unplanned pregnancies and lack of

knowledge of PCC before pregnancies, particularly in women of childbearing age, their health should be perceived as a serious threat to the women, their families and unborn children. According to Hiltabiddle (1996), perceived health risks include phobias, psychological and physical barriers, accessibility issues, and the lack of PCC in Rural area of Vhembe district. However, Clarke, Lovegrove, Williams and MacPerson (2000) are of the view that perceived dangers also cover situations where preventive action is continuously done, such as using reproductive health services or receiving PCC before becoming pregnant. Many people still struggle with sexual and reproductive health, and they are also denied the freedom to make choices that will affect their health and well-being (Santhya & Jejeebhoy, 2015).

2.3.1.4 Perceived benefits of preconception health services

Individual childbearing women should believe that services are available and that their continuous usage will reduce the need for non-use of contraceptive methods (Hiltabiddle, 1996). People are more likely to follow health advice when they think doing so will help avoid, detect, or treat the condition and lessen its harm to them (Hanson & Benedict, 2002; Nefale, 1999 & Ross, 2001).

Parents' and partners' desire to use preconception healthcare services is important psycho-social support. Perceived advantages in this study refer to opinions on how well-recommended preventive health measures, such as the availability of reproductive and preconception healthcare services to help avoid genetic abnormalities and pregnancy difficulties, work.

2.3.1.5 Perceived barriers on the utilisation of preconception healthcare services

"Possible hurdles or hindrances to engaging in preventative behaviors, including such considerations as expense, discomfort, and unpleasantness" are examples of perceived barriers (Agha et al., 2001; Laraque et al., 1997). According to Sortet and Banks (1997), perceived obstacles to taking health measures include phobic reactions, physical and psychological barriers, accessibility issues, and personality traits. As a result of the

distances from where women of reproductive age live, the financial cost of transportation may also have a detrimental impact on how often preconception services are used.

2.3.1.6 Perceived cost

Many women of childbearing age do not use preconception healthcare services, especially in developing countries where such services are unknown and do not exist unless on a referral basis (Ukoha & Mtshali, 2022). In most countries, reasons for not using preconception services might be costs in terms of transportation fees and poor knowledge of women and other family members.

2.3.1.7 Efficacy

Efficacy indicates that "other preventive strategies are weighed against the effectiveness of preconception care services in preventing pregnancy" (Centers for Disease Control and Prevention, 2012). Effectiveness is mentioned when a childbearing woman utilises preventive services to avoid complications during pregnancy, labour and puerperium. Given these findings, it is critical that healthcare workers recommend that childbearing women be examined before pregnancy to exclude complications, thus reducing the mortality rate of mothers and neonates.

2.3.1.8 Cues to action

Investigating what constitutes a trigger to action and how it influences behaviour is ongoing. Promoting childbearing healthcare services on the radio and other exposure to information from PCC services may influence people to employ a practice that is advised to be effective. According to Kim, Kols, and Mucheke (1998), preconception counselling, examination, and other checks are essential for informing clients about numerous findings that might influence women's decisions.

2.4 FINDINGS OF RELATED STUDIES

2.4.1 Knowledge among women of childbearing age regarding preconception healthcare services

According to studies, women who receive PCC are more informed and frequently exhibit risk-reduction behaviours. However, the respondents' awareness of the risks associated with insufficient spacing, suggestions for optimal birth spacing practices, and the dangers of maternal anaemia to the fetus was limited in relation to these specific preconception health themes (Kasim et al., 2016). A study conducted in the Abhar District in northwest Iran in 2015 revealed that, although all the women had access to preconception healthcare, they had inadequate knowledge about preconception health (Jafari & Rashidi, 2017). According to Abrha, Asresu and Weldearegay (2020), 39.5% of the participants knew PCC was available in the North of Ethiopia. According to a previous study, women who receive PCC interventions are also better informed about PCC. Even brief counselling can improve a woman's comprehension of general and specific preconception health risks (Klaas et al, 2018).

2.4.2 Attitudes of women of childbearing age towards preconception care

The attitudes and participation of women are essential to the effectiveness of PCC. According to research, most women in Bachok (98.5%) had positive attitudes toward PCC, with only 1.5% having negative ones (Kasim et al., 2016). A survey carried out in Khartoum State, Sudan, revealed that most of the respondents had a good attitude towards PCC. Despite having insufficient knowledge about PCC, the majority of them believed that it offered benefits. Other studies have already reported similar results (Ahmed et al.,2015). A study done on adolescent girls revealed that during the pre-test level, 96.7% of the respondents had an unfavorable attitude toward PCC, 3.0% had a moderate attitude, and none had a favorable attitude; however, during the post-test, 100% of the respondents had a favorable attitude (Krishnan et al., 2016). Furthermore, according to a survey in the Northern Region of Ghana, 96 (48.0%) of the respondents strongly agreed that every woman needed PCC, while four (2.0%) strongly disagreed. Therefore, according to the study, PCC is necessary during the reproductive years.

Finally, the data revealed that 160 people (80%) had negative attitudes toward PCC (Boakye-Yiadom et al., 2020).

2.4.3 Healthcare services received on risk prevention before pregnancy by women of childbearing age.

Evidence shows that preconception health and medical care improve mother and baby health outcomes. Therefore, utilising PCC effectively lowers mother and child mortality by 57% and morbidity by 73% (Goshu, 2018). However, although the notion of preconception healthcare facilities is not new, it is still not widely used, especially in developing countries. This is one of the main causes of the high maternal and fetal mortality and morbidity rates in developing nations (Roshina et al., 2018).

Various articles claim that preconception use is influenced by factors such as age, gender, educational level, ethnicity, income, marital status, history of family planning use, health status, history of ANC visits, parity, intention to become pregnant, and gravidity. Additionally, PCC use among Ethiopian women of reproductive age is unclear or far too low (Gusho, 2018Limited household resources and income, lack of transportation options, indirect transportation costs, a lack of knowledge about health care services and providers, problems with stigma and women's self-esteem and assertiveness, a lack of birth preparation, cultural beliefs and practices, and ignorance about necessary obstetric health services were the main demand-side barriers identified (Kyei-Nimakoh et al.2017).

WHO (2012) states that there are several helpful ways to address preconception health issues, problematic behaviors, and risk factors that increase the risk of mother and child death and morbidity. Various methods would need to be used to deliver these interventions, including:

- o Health promotion and education.
- o Immunization.
- o Nutritional support and food security; and
- o Information and access to contraceptive services (medical and social).

2.4.4 Medical conditions that affect women of childbearing age.

2.4.4.1 Depression

It is estimated that 15% of women will experience depression at some point in their lives, with pregnancy and the postpartum period being the most common times (Sheeba et al.,2019). Low birth weight, preterm birth, and decreased fetal development are a few of the negative impacts of depression during pregnancy that some research has shown. However, other studies have found that it does not affect pregnancy (Jarde et al., 2016). Preeclampsia, premature delivery, low birth weight, and caesarean delivery are among the pregnancy problems and negative outcomes that some studies have linked to prenatal depression, although others have not (Yedid et al., 2016).

Women were only classified as having pre-gestational depression if a psychiatrist or family doctor had previously diagnosed them. Only the most severe cases should have been included; therefore, it's probable that some people with lesser or treatable depression went unnoticed. We did not separate our analyses based on the disease's stage (severity) or whether or not the women received treatment while pregnant. Caregiver bias cannot be excluded because the doctors typically diagnosed pre-gestational depression at the time of labour and delivery, yet, this mirrors a real-life scenario, boosting the clinical value of our findings (Yedid et al., 2016).

2.4.4.2 Maternal weight

International studies have emphasised the effects maternal obesity has on both the mother and her child. Increased risks include those for the mother's health throughout pregnancy (such as gestational diabetes, hypertension, and thromboembolic complications), those for the baby (such as macrosomia, shoulder dystocia, late foetal death, and congenital abnormalities), and those for labour complications and the need for more frequently scheduled induced and surgical deliveries (Heslehurst, 2019).

Few intervention trials have addressed obesity or undernutrition in women of reproductive age. The goal should be to acquire and maintain appropriate nutritional intake and weight before pregnancy because weight and micronutrient status during pregnancy are

influenced by factors such as food insecurity and birth spacing, which require comprehensive treatments. Additionally, decreasing weight during pregnancy is not advised, especially for overweight or obese women; therefore, it is essential to check one's weight and nutritional status between pregnancies (Dean et al., 2014b).

PCC is defined for the application of this review as "any intervention provided to women and couples of childbearing ages, regardless of pregnancy status or desire, before pregnancy, to improve health outcomes for women, newborns, and children." Nutritional risks and interventions are a significant part of PCC (Dean et al., 2014a).

2.4.4.3 Anaemia

The diseases that affect women of childbearing age, pregnant women and teenage girls have been significantly impacted by anaemia, which in turn has a considerable impact on maternal mortality and morbidity. Numerous variables, including a woman's age, place of residence, smoking habits, level of education, and BMI status, can affect her anaemia (Yuan et al, 2022). It is dangerous when women of reproductive age have iron deficiency anaemia, especially in low- and middle-income countries (LMICs). Pregnancy makes the condition worse, with recognised negative results. Even with interpregnancy iron supplements, most changes take a while to enhance the iron status. Maternal anemia has been linked to death in observational studies, with one finding showing a 29% linear increase in mortality for every 10 g/L decrease in maternal haemoglobin. Benson et al., 2021).

2.4.4.4 Hypertension

Hypertension or high blood pressure is the major risk factor for all cardiovascular disorders (Kjeldsen, 2018). The prevalence and causes of each ailment are independently examined in the literature on tobacco smoking and hypertension in women of reproductive age. Studies examine socioeconomic tobacco consumption patterns, tobacco use during pregnancy, tobacco use types and geographic correlates (smoking or smokeless tobacco), educational and wealth or economic inequality related to tobacco use, and the links between tobacco use and child mortality, food insecurity, and intimate partner violence (Datta, 2021).

Each year, it is predicted that hypertensive-related causes kill approximately 500,000 women in underdeveloped nations between the ages of 19 and 49. Between 1% and 5% of pregnancies are complicated by chronic hypertension, but this estimate is based on a small number of population-based research, including publications from more than 20 years ago. (Bramham et al. 2014). However, although it can be prevented, the growth and effectiveness of lowering maternal death through the prevention and treatment of hypertension have not been very successful (Naseem et al., 2018).

2.4.4.5 Diabetes Mellitus

Many adverse outcomes are associated with poor diabetes control in early pregnancy, highlighting the importance of pregnancy planning (Egan, 2016). There may be additional financial, cultural, and ethnic hurdles for women with type 2 diabetes to receive healthcare because they are more likely to reside in socioeconomically disadvantaged areas and to be members of ethnic minority groups (Yamamoto, 2018). All pregnant women, their partners, families, and healthcare professionals must be made aware of the risks related to diabetes (Wotherspoon, 2017).

2.4.4.6 Sexually transmitted infections

Sexually transmitted infections (STIs) are conditions that develop or are spread through sex and have clinical signs of abnormalities, often in the genitalia (Mularsih, 2020). More than 60% of the 820,000 young people aged 15 to 24 who were newly infected with HIV in LMICs in 2011 were female (WHO, 2013). While personality characteristics have been taken into consideration, contextual factors—such as socioeconomic or job status—emerge as key determining factors for the development of HIV risk behaviors (Alcocer-Bruno et al., 2020). To limit sexual transmissions, effective prevention is urgently needed. Additionally, significant social science challenges still exist in preventing HIV among women globally (Klaas et al, 2018)

2.5 BARRIERS THAT HINDER THE PROVISION OF PRECONCEPTION CARE

Future parents' lack of experience with and ignorance of PCC has been largely linked to the absence of a centrally planned and integrated PCC package (i.e., a PCC programme in which PCC content is normalised). This lack of knowledge among prospective parents was thought to be the primary reason for PCC's low uptake. Healthcare workers also find it challenging to establish a routine and build expertise in PCC delivery due to the limited uptake of PCC (M'hamdi et al., 2017) and the lack of motivation to provide PCC are barriers to the provision by healthcare workers (Ojukwu. 2016).

Lack of understanding, the perception that there are no dangers, prior pregnancy experiences, and incomplete pregnancy preparation are the most frequently noted hurdles to PCC utilisation. The two most commonly mentioned facilitators simply believed in the benefits and accessibility of PCC. The included studies listed PCC availability as both a barrier and a facilitator (Poels et al., 2016). According to a study by M'hamdi et al. (2017), several factors contribute to low adoption, including unfamiliarity and a lack of information regarding PCC (2017). Access to nearby healthcare facilities and socioeconomic barriers continue to be the most significant barriers to healthcare service provision worldwide (Rahman, 2017). In addition, providers' lack of competence and confidence due to low service utilisation eventually prevented them from establishing routines and acquiring experience in providing pre-pregnancy care services (M'hamdi et al., 2016).

2.6 RECOMMENDATIONS

Suggestions have been provided for mutual accountability among healthcare workers who care for women of childbearing age; enhanced educational campaigns to raise awareness of the need for PCC; and the advancement of therapeutic therapies for providing PCC in most African countries despite financial constraints (Zühlke & Acquah, 2016). In addition, PCC should target both men and women, individuals and couples, whether pregnant or not (WHO, 2013b).

Following a review of published evidence, the 10 recommendations for improving health through advances in clinical care, public health, and community action are as follows: "Increasing awareness; Preventative measures visits; Interventions for identified risks; Inter-conception care; Preconception check-up; Health insurance coverage for low-income women; Public health programs and strategies; Research and monitoring improvement" (Johnson & colleagues, 2015).

According to the WHO (2012), PCC delivery pathways and methods could include:

- o Primary care.
- o Faith-based organisations and programmes;
- o Existing ministry of health programmes;
- o Educational system.
- o Social welfare programmes; and
- o Workplace programmes.

2.7 SUMMARY

This chapter presented with the relevant literature review pertaining to the knowledge among women of childbearing age regarding PCC services and their utilization. The following were discussed in this chapter reason for a literature review, findings of related studies, conceptual framework, barriers that hinder the provision of preconception care and recommendations.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The literature review pertaining to this study's topic was discussed in Chapter 2. This chapter discusses the research methodology, with particular reference to the research design and methods, the sample's target population, the selection criteria, the research instrument, ethical considerations, and the data analysis steps.

The methodology is the procedure used to structure a study in order to collect and analyze data in a systematic manner (Polit & Beck, 2021). It is the science of determining how to conduct research. Essentially, research methodology refers to the procedure's researchers use to describe, explain, and predict phenomena. It is also defined as the study of methods for acquiring knowledge. Its goal is to provide a research work plan.

The study assessed the knowledge and access of women of reproductive age to preconception healthcare services in Rural area of Vhembe district. This study adopted a quantitative approach. In quantitative studies, the features of things or events are represented by numerical values. The researcher developed a self-administered questionnaire for women of childbearing age and used a questionnaire to collect data. The HBM model inspired the research on the questionnaire's question structure.

3.2 STUDY APPROACH

The quantitative approach, also known as the structured approach, was employed in this study. Everything that makes up the research process, such as objectives, design, sample, and the questions the researcher intends to ask respondents, is predetermined in this approach (Polit & Beck, 2021). The researcher chose this approach based on the assumption that gathering this disparate data would provide a better understanding of the research problem (Creswell, 2018). Quantifying the variation to determine the extent of a

problem, issue, or phenomenon is more appropriate. This study approach was appropriate for this study because it allowed for a larger sample size and avoided researcher interference.

3.2.1 Study design

Philosophical "assumptions drive methodological decisions"; thus, the study design is related to the philosophical orientation of the study and researcher. The research question, research objectives, phenomena of interest, population, and sampling strategies all influence the study design (Majid, 2017). A researcher discovers new meaning, describes what is known, determines the frequency with which something occurs, and categorises the information using a predetermined instrument in quantitative descriptive studies (Polit & Beck, 2017). Thus, this study used a non-experimental, descriptive, and cross-sectional survey. A large quantity of information can be collected at a specific time period in a cross-sectional design, allowing the results to be readily available. In addition, cross-sectional studies seek reliable data in order to generate solid conclusions and new hypotheses that can be investigated in future research. This design was appropriate for this study because it was cost-effective and targeted a larger sample size.

A non-experimental design was used in order to examine the situation as it was without manipulation (Burns & Grove, 2018). The non-experimental design was chosen because the researcher had no intention of developing any intervention or framework for this study because it was outside this project's scope. Expanding the knowledge base, which opens up new opportunities for learning and growth, is the reason for this design. A relationship or association is found when one variable varies systematically, directly or indirectly. This design helps identify things that need further investigation, which was applied in this study.

Descriptive design can distinguish issues with existing practice, justify it, make judgments, find out what other professionals in similar situations are doing, or create theories (Grove & Gray, 2018). In this study, the respondents were questioned on their knowledge regarding preconception healthcare services to child mortality so that problems may be

identified. The researcher described the knowledge among women of childbearing age regarding preconception healthcare services in the Vhembe District.

3.3 STUDY SETTING

According to Grove & Gray (2018), a research setting refers to the specific location or locations where data is collected. The location of a study is determined by the nature of the research question and the type of data required to answer the research questions. The study was conducted at Rural area of Thulamela municipality. The selected villages where this study focused, are located at about 389 kms northwest of Thohoyandou Capital City in Vhembe district, where the respondents of the study were purposefully sampled for the study.

3.4 STUDY POPULATION

A population is a complete set of persons or objects, characterised by designated criteria, which the researcher intends studying (Polit & Beck, 2020. According to Burns and Grove (2020); LoBiondo-Wood and Haber (2017), research population is "the totality of all subjects that conform to a set of specifications".

3.4.1 Targeted population

The target population and accessible population are associated terms. Grove and Gray, 2019); Grove and Gray (2018) define a target population as "the entire specific aggregate of cases about which the researcher would like to make generalisations of the results". For the purposes of this study, the target or entire population comprised all females 1151 of the main population. LoBiondo-Wood and Haber (2017) however, define an accessible population as "the aggregate of cases that conform to the designated criteria, and that are accessible to the researcher as a pool of subjects for the study".

According to Stats SA (2011), there were 527 households, a total population of 2052 people at Rural area of Vhembe district, in which 56.1% of the population were females, which is 1151. Out of 1151 female population, only 15.1% of the females was required to participate. Therefore, estimated population of the childbearing age women was 15.6% of the females, which made up to 180 respondents.

The estimated study population was calculated according to the as following formular:

o   Total population x female percentage of the population = total number of females

   2052 x 56.1% = 1151

   Therefore, the total number of females = 1151

o   Total number of females x percentage of women of childbearing age = number of population of women of childbearing age

   1151 x 15.6% = 180

   Therefore, the total number of the accessible population were 180 respondents.

In this study, the accessible population was the childbearing age women between 18 to 35 years, residing at the Jurisdiction of purposively sampled villages in Vhembe district. Out of 1151 females, only 180 respondents who agreed to sign a concern form, who met the criteria for inclusion, were invited to participate in the data collection process. Those who were not at work or studying were purposefully sampled from the sampled households in the selected villages. Only the childbearing age women who met the criteria for inclusion and were present on the day in which the researcher visited each village and the household for data collection were invited to participate in data collection.

The main motivation for selecting the childbearing age women to explore their knowledge preconception healthcare services, was the fact that they constituted high risk age groups for poor use of the preconception healthcare services. Childbearing age women have high rates of unplanned pregnancies because they are at the vulnerable years due to poor knowledge regarding the PPC services.

In this study, the accessible population consisted of women between 18 to 35 years residing at Rural area of Vhembe district. The estimated population of women of childbearing age was 15.6%, in which the researcher arrived at 180 as the representative for the all-female of childbearing age at the sampled village. The respondents that answered the questionnaire were only 117 due to the exclusion criterion and the delimitations such as unavailability due to work or school.

The inclusion criterion considered women within the childbearing age, as discussed above. The exclusion criteria were women who were not mentally fit or stable. The accessible population were women who were not at work or studying during the study period.

The statistical information was derived from a sample of 117 respondents who completed questionnaires. Some of the respondents chose not to complete certain sections of the questionnaires, or certain items within specific sections, presumably because of the personal nature of the questions asked, especially those on sexuality. The percentages were calculated on the number of responses to each item (valid percent), not on the total number of questionnaires received. This was done as a function of the SPSS version 27 program.

3.4.2 Sampling

Sampling is the process by which a researcher chooses a sample from a population in order to collect data on the phenomena in a way that accurately represents the population of interest (Brink et al, 2018).

3.4.2.1 Sampling of the village

The study occurred at the Rural area of Thulamela municipality in Vhembe district under the leadership of a traditional Chief known as "Musanda" in Tshivenda. In this study, purposive sampling was used to select the village as the researcher identified a challenge in women of childbearing age concerning preconception information. Therefore, the researcher saw a need for a study on preconception knowledge to be conducted at Rural area of Thulamela municipality in Vhembe district. Purposive sampling method was

preferred as it helped facilitate the purpose of this study. Purposive sampling refers to selecting samples from the total sample size depending on the survey researcher's assessment (Vijayamohan, 2022).

3.4.2.2 Sampling of the respondents

The sample is the process of choosing a section of the population to represent the complete population. In contrast, the sampling strategy is the method used to choose a sample in a study (Polit & Beck, 2021).

Sampling can be grouped into two categories, namely probability and non-probability sampling (Polit & Beck, 2021). Probability sampling is characterised by an equal chance of inclusion of each element in the sample and in the case of non-probability sampling, this is not the case. During the present study, aspects of probability sampling were reflected by the way in which female in this study were selected. However, participated group of childbearing age women were selected by non-probability sampling, more specifically, purposive sampling. In this study, the childbearing women who happened to be at home during data collection and were willing to participate, formed part of the study participants. In addition, purposive sampling represents judgmental sampling involving the conscious selection of certain subjects or elements to include in the study (Etikan & Bala, 2017). In this study, purposive sampling was used to ensure that only childbearing age women who are between 18 to 35 years of age were included in the sample. This was implemented at the royal house where all women of this age were asked to come to the chief's kraal. Purposive sampling involves "the conscious selection by the researcher of certain subjects or typical situations" (Polit & Beck, 2021).

Any person who happens to be willing to take part in the interview, and meets the inclusive criteria set for the study, gets included in a purposive sample. The researcher finds it easy to obtain participants, but the risk of bias is lesser than in random sampling, because each member of the population has an equal chance of being included in the sample. Results obtained from a purposive sample might not be generalisable to the entire population. Etikan and Bala (2017) warn that convenience sampling is considered a poor

approach to sampling because it provides little opportunity to control for bias. Therefore, the researcher decided to use purposive sampling in identifying respondents for this study. According to Polit and Beck (2021), purposive sampling is appropriate for conducting descriptive surveys that seek to describe lived experiences, such as preconception care experiences among the childbearing women.

3.4.3 Sample size

The sample size consisted of a maximum of 117 respondents in the selected village who were available and willing to participate in the study as elaborated above. The total sample size consisted of (117) 10.2% of the female population.

3.5 PRE-TEST

According to Kumar (2018), pre-testing includes choosing a few questionnaires and coding the responses to identify any coding-related issues. Pre-testing the questionnaires ensured they were well-phrased and clear enough to allow for the best possible data collection and understanding. A pre-test questionnaire survey of 10 to 11 respondents was conducted, which was approximately 10% of the sampling size. The respondents were called to the royal house, whereby the total population sampling procedure was used to sample respondents from the targeted population. The pre-test was conducted at a nearby village as it has the same characteristics as the study area. The time required to complete the questionnaire was approximately 30 to 40 minutes. The pre-test was then repeated on the same respondents two weeks after the first pre-test was done. This ensured clarity of the question and evaluated whether the desired information to be collected assisted in furthering the study. To protect the researcher and the respondents from Covid-19, the researcher and respondents wore their masks and ensured social distancing. The researcher went around the village with hand sanitiser and encouraged respondents to sanitize before and after answering the questionnaire.

3.6 DATA COLLECTION

To be able to respond to relevant research questions and assess results, one must first collect data, which is the process of obtaining information on specific variables in an established systematic manner. This study collected data in the selected field of study, Rural area of Vhembe district, in a systemic fashion that captured quality evidence that allowed data analysis. As the study was conducted using a quantitative research approach, a quantitative data collection method was utilized to gather information from the respondents. Questionnaires were used to gather information from the respondents. The questionnaire took approximately 30 and 40 minutes to complete.

Plans for gathering data for quantitative investigations should produce data that is accurate, valid, and significant (Polit & Beck, 2021). Using the structured questionnaire, eligible participants who agreed to participate in the study were asked questions. All the objectives were stated following a thorough review of the existing literature covered in the questionnaire's combination of closed- and open-ended questions. Major demographic and health information on the sample, such as age, gender, marital status, race, ethnicity, education, and social-economic status, was acquired in some areas (Polit & Beck, 2021). The questionnaire was used with permission in order to create a useful tool that would produce accurate data for the study's setting in the rural area of Thulamela municipality in Vhembe district.

Before constructing the questions, relevant literature was studied to ensure content validity. The questionnaire was developed concerning the study objectives, target respondents, and questionnaire design. The questionnaire was divided into five sections. The sections included socio-demographic: PCC-related questions, additional factors related to PCC, attitude towards PCC, and questions regarding actual and potential access to resources and services. The questionnaire covered the study objectives. The type of questionnaires used was the guided response type which was multiple response questions.

The tool for gathering data for this study was created with the utmost care to ensure that the questions were clear, considerate of patients' psychological needs, and bias-free

(Polit & Beck 2017). Peers and statisticians rigorously reviewed the instrument to ensure it could gather the required data; in the case of quantitative data, 10% is permitted for pre-test purposes. After making an appointment with them, the researcher collected data at a time deemed most suitable for the respondents. Data were collected for a month, (from 02 May 2022 to 03 June 2022); the suitable date depended on the respondents. The questionnaire was developed in English and subsequently translated into Tshivenda by a language expert from the University of Venda in order to accommodate all the respondents, as the dominant language is Tshivenda. This was also to ensure that even those who could not read and write English well were also allowed to participate in the study if they were willing. The researcher was available during data collection to give clarity when there were issues to be clarified. This also increased the retention rate as completed questionnaires were collected immediately after completion.

3.7 VALIDATION AND RELIABILITY

The degree to which a concept is precisely quantified in a quantitative investigation is known as validity. An alarm clock programmed to sound at 6:30 each morning but rings at 7:00 is a clear illustration of validity and reliability. It is not valid because it is not ringing at the desired time despite being reliable (it rings at the same time every day) (Heale & Twycross, 2015). A measure's reliability is related to its consistency. For example, an individual taking an assessment to assess motivation ought to provide somewhat consistent answers each time (Heale & Twycross, 2015).

3.7.1 Reliability

Reliability and validity are closely related; the researcher must consider both qualities when selecting a research instrument. When using the same responder over time, an instrument's consistency in producing the same results is called reliability (Burns & Groove, 2017). In this study, reliability was ensured by consistently collecting cost-effective information that reduced the chances of errors in the study. The researcher used stability (test-retest) to ensure reliability by administering the same questionnaire to the

same respondents twice, three to five days apart, to check if the responses were consistent. It would indicate that the instrument was unreliable and needed to be adjusted if the respondents did not all reply in the same manner. To avoid memorisation by the respondents, the questions were administered to respondents at various intervals.

3.7.3 Validity

The extent to which the instrument measures what it is designed to measure is a matter of validity (Ngwenya, 2018).

- **Data validity** was ensured by asking close-ended questions to eliminate more questions from the discussion. The questionnaires were written in plain English to avoid misinterpretations. Respondents were also given time to review the questionnaire and ask any clarity-seeking questions. The local language (Tshivenda) was used. The questions were translated into Tshivenda by a language expert from the University of Venda.

- **Content validity** refers to the extent to which a measurement tool contains a sufficient sample of the measured contrast (Polit & Beck, 2017). Before developing the study's questions, a thorough literature review was conducted to verify topic validity. The supervisors also reviewed the study's content relevance.

- **Face validity** relates to the subjective evaluations made by researchers of the presentation and applicability of the measuring tool, especially if the instrument's items seem appropriate, acceptable, straightforward, and clear (Taherdoost, (2016). In this study, face validity was obtained by asking people to rate the validity of a questionnaire as it appeared to them.

3.8 DATA COLLECTION

After receiving approval from the University faculty and receiving ethical clearance from the Ethics Committee of the University, the researcher scheduled a meeting with the target demographic. Prior to giving them the questionnaires, the target group was given the study's goal during the meeting. The information sheet and questionnaire were sent

simultaneously to inform and secure written informed permission from each respondent. By excluding names from the questionnaire, anonymity was ensured. All research projects require anonymity; thus, the researcher had a convenient, safe place where completed surveys were sealed in envelopes and stored. To protect the researcher and the respondents from Covid-19, the researcher and respondents wore their masks and ensured social distancing. The researcher went around the village with hand sanitiser and encouraged respondents to sanitize before and after answering the questionnaire.

3.9 DATA MANAGEMENT AND ANALYSIS

3.9.1 Data management

Collected data were captured on the computer and safely locked away. The data gathered is only accessible to the researcher and the supervisors. The respondents were assured that the final results would be applied statistically to the entire population. After three years, the information will be deleted from the computer, and the questionnaire will be shredded. Moreover, data have been managed using the following steps: collect data, prepare data, process data, analyse data, and interpret data. These steps are briefly discussed below:

1. *Data collection*

Data were collected at Rural area of Vhembe district in a systemic fashion, capturing quality evidence that allowed data analysis.

2. *Prepare data.*

Data preparation is the first part of data manipulation. It is impossible to process raw data; thus, the researcher validated the data and checked its accuracy.

3. *Process data*

The researcher framed collected data through editing, coding, classifying, tabulating, charting, and diagramming. The aim of data processing in this research was data reduction or minimization.

4. *Analyse data*

The researcher examined the data and collected meaningful results. Packaged computer analysis applications like SPSS version 27 have been used to analyse the data.

5. *Interpret data.*

The researcher interpreted the data. Pie charts, histograms, and bar graphs were used to present the data that had been analysed (see chapter 4, Data analysis).

A research hypothesis is tested using data analysis, methodical organisation and synthesis of research data (Polit, 2017). Descriptive statistics enable researchers to reduce, summarise and describe quantitative data from empirical evidence. In order to convey information about the study sample, descriptive statistics such as the mean, mode, and standard deviation will be utilised to analyse the data (Polit & Beck, 2021). In addition, packaged computer analysis packages like SPSS version 27 will be used to analyse quantitative data (Grove & Gray, 2018). The researcher wrote down all the details on paper, inputted the pertinent study-related data, and uploaded the information into pre-packaged computer programmes for data analysis. Nevertheless, the researcher analysed the data. Pie charts, histograms, and bar graphs have been used to present the data that has been analysed.

3.10 ETHICAL CONSIDERATION

The field of ethics is called moral philosophy, that is morally good and bad, what is right and what is wrong (Tauginienė et al., 2018). Regardless of the research methodology used, research ethics are important while conducting a study. Therefore, this section has used and considered informed permission, confidentiality, anonymity, and voluntary ethics to prevent misunderstandings that would hinder the study process. Permission to conduct the study was obtained from the University of Venda's Ethics Committee and the

Chief of a Rural area of Thulamela municipality in Vhembe district. The consent form was translated into Tshivenda language to assist respondents in gaining more information and to make it easy for them to understand.

The respondents were made aware that participation was voluntary and that they could withdraw from the study at any time if they were uncomfortable. Respondents' names were not used; code names were used (Grove & Gray, 2018). The following ethical concepts were adhered to in this study:

- **Confidentiality:** refers to the handling of information that a person will reveal in a trusting relationship with the expectation that it won't be disclosed to others without their consent in ways consistent with the original disclosure (Resnik, 2015). In this study, the researcher did not share the participant's information with anyone outside the research team. In addition, the data collected was kept safe to maintain confidentiality.
- **Anonymity:** In this study, anonymity ensures that the identity of research participants will remain unknown. The researcher kept the respondents' identities hidden for the benefit of the study. Moreover, anonymity in this study was ensured by using the following mechanisms:

    o Give a code or number to each respondent.
    o When talking about the data, use the code names.
    o Store the master list of respondents' names and corresponding code numbers in a secure location.
    o Remove and destroy the genuine names list.
- **Privacy**: In this study, privacy refers to the freedom of the respondents to choose the moment, setting, and degree of sharing of their private information. Moreover, the researcher ensured that the respondent's identity was kept confidential and could not be leaked in any way. The villagers' identity was written in letters or codes. The researcher did not invade the respondents' privacy by sharing private information without the respondent's knowledge or will.

- **Informed consent**: means that the respondents understand the aim and objectives. Informed consent must be obtained from each respondent. This study was explained clearly to the respondents, and they were not forced to participate; they volunteered their participation. The researcher provided relevant information about the study in written and verbal form, where the researcher discussed the research project with the respondents. The respondents were given the first 5 to 10 minutes to read and sign the consent form.

- **Risk and discomfort involved**: There may be foreseen risks for respondents in the study, such as loss of time, physical discomfort, fatigue or boredom, and emotional distress. Participation in the study involved answering certain questions that the researcher asked in one-to-one communication. It took less than 60 minutes to answer the questionnaire for each respondent.

- **Respondent's rights:** In this study, participation was voluntary. Respondents were informed that they could withdraw from the study at any time, and there was no penalty for withdrawal of participation. The respondents have a right to be informed about the research, its purpose and benefits, and what will be required of them during the study. Respondents were provided with an information sheet and requested to sign a consent form to indicate their agreement to participate.

3.11 DELIMITATION OF THE STUDY

The study only sampled women of childbearing age in one village at Thulamela municipality in Vhembe district. Only 10,2% of the targeted population were available and willing to be part of the study, leaving out the 5.4% of the population not included due to unavailability and unwillingness to participate. There are preconception situations regarding cultural behaviors because it is taboo (or inappropriate) to discuss preconception and maternal issues in some cultures. The study's target group is women of childbearing age. However, individuals between the ages of 16 and 17 were not chosen because the researcher would have to obtain their parent's consent, which might be time-consuming. Moreover, it may prompt ethical concerns that might compromise confidentiality and respondents' privacy.

3.12 PLAN FOR DISSEMINATION OF RESULTS

Dissemination is defined as the "communication of clinical, research, and theoretical findings to transition new knowledge to the point of care" (Brown & Schmidt, 2019). For research to be adopted and impact society, it must be effectively delivered and communicated. Governments and stakeholders are alerted to research findings, enhancing their visibility, comprehension, and application. The researcher will present the research findings at regional, national and international conferences and publish an article in a recognised journal. A copy of the article will be delivered to the University of Venda to ensure it is available to other researchers.

3.13 SUMMARY

The study's research methodology and design were discussed in this chapter. Data analysis, results interpretation, and a discussion of the research findings are the main topics of Chapter 4.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter analyses the data and presents the study's findings. The results also reveal the personal characteristics of the respondents who participated in the study. Women of childbearing ages (respondents) in Rural area of Vhembe district were questioned about their knowledge of PCC. A questionnaire containing both open-ended and closed-ended questions was developed to gather information.

4.2 DATA ANALYSIS AND DISCUSSION OF FINDINGS

The outcomes of data obtained from women of child-bearing age at Rural area of Vhembe district are discussed in this chapter. The statistician used IBM SPSS Statistics version 27 to analyse the data. A variety of graphs, including cross-tabulations, were used to present the descriptive data. In addition, the researcher used frequencies and percentages to identify relationships between variables, and a standardized questionnaire with five sections was used to collect data from respondents. The questionnaire was structured as follows:

Section A: Socio-demographic information

Section B: Preconceptual care-related questions

Section C: Additional factors related to preconception care.

Section D: Attitude towards preconception care

Section E: Access to actual and potential resources and services

The statistical information was derived from a sample of one hundred and seventeen (117) respondents who completed questionnaires. Some of the respondents chose not to complete certain sections of the questionnaires, or certain items within specific sections, presumably because of the personal nature of the questions asked, especially those on knowledge. Perhaps those respondents did not want to disclose that they don't have knowledge. The percentages were calculated on the number of responses to each item (valid percent), not on the total number of questionnaires received. This was done as a function of the SPSS version 27 program on the advice of the Statistician.

Only one hundred and seventeen (117) responses were considered complete. As many as sixty-three (63) respondents missed certain aspects such as signing of the concern forms, not available on the day of the researcher 's visits for data collection, or missing out certain section of the questionnaires, therefore, they were disqualified from the study, only fully completed questionnaires were considered. The results are discussed in numerical order according to the questionnaire's structure.

4.3 SOCIO-DEMOGRAPHIC CHARACTERISTICS

Table 4.1 displays respondents' socio-demographic information. The socio-demographic information included gender, age, occupation and respondents' educational level. Although not essential to the study, the personal information helped place the findings in perspective.

4.3.1 Respondents' age

This study included 117 women of childbearing age in Rural area of Vhembe district. The age of the respondents ranged from 18 to 35 years. The age composition consisted of 44,4% of respondents between 18-25 years of age, while 55.6% were between the ages of 26-35.

4.3.2 Respondents' occupation

The majority of the respondents were in the age range of 18 to 26 years. Considering the occupational status, 20.5% are employed, 44.4% are unemployed, 23.9% are students, and 11.1% indicated other.

4.3.3 Respondents' highest level of education

The educational background of the respondents shows their highest educational level. Table 1 indicates that 1.7% had primary school education, 65.8% had secondary school, and 32.5% had tertiary-level education. In addition, 1.7% of women never attended or reached the secondary level of education.

Table 4.1: Socio-demographic characteristics of women of childbearing age (n-117)

Socio-demographic characteristics	Frequency	Percent %	Valid Percent %
Age			
18-25	52	44.4	44.4
26-35	65	55.6	55.6
Total	117	100.0	100.0
Occupation			
Employed	24	20.5	20.5
Unemployed	52	44.4	44.4
Student	28	23.9	23.9
Other	13	11.1	11.1
Total	117	100.0	100.0

Highest level of education			
Primary school	2	1.7	1.7
Secondary school	77	65.8	65.8
Tertiary school	38	32.5	32.5
Other	0	0	0
Total	117	100.0	100.0

4.4 KNOWLEDGE OF PRECONCEPTION CARE

This study reported that 70.9% of women in this study had never received information regarding PCC from any healthcare practitioner. This suggests that healthcare practitioners have a negligible information distribution among childbearing women. Furthermore, this suggests insufficient knowledge among childbearing women. This is comparable to a study by Ayalew et al.., (2017) that looked at women's preconception knowledge and attitudes in the United Kingdom and found that more than half of the women were unaware that PCC services were offered at their health centres. Table 4.2 highlights respondents' responses to the knowledge questions.

4.4.1 Quality of sexual knowledge

Considering what is known about PCC, 40.2% of the respondents reported they had received solid sexual education, while 59.8% reported they had received limited sexual knowledge. Therefore, most respondents did not have adequate knowledge about sexual awareness, suggesting insufficient knowledge regarding sexual PCC.

4.4.2 Appropriate knowledge of contraception

Family planning programmes are necessary for PCC because unplanned pregnancies will occur without them. In this study, 44.4% of the respondents reported solid information regarding pregnancy prevention, and 65.6% reported limited information. This suggests that PCC knowledge has not yet been exhaustively covered because most women of childbearing age have inadequate information regarding pregnancy prevention.

4.4.3 Knowledge that contributes to a healthy pregnancy and baby.

The mother's knowledge of caregiving impacts the effectiveness of the care given to the baby or child. This study found that 66.7% of respondents were knowledgeable about what contributes to a healthy pregnancy and a healthy baby, while 43.3% were not. Although the majority were knowledgeable, the percentage of individuals with limited knowledge about the factors that influence their and their baby's health remains a concern, indicating a lack of PCC knowledge.

4.4.4 Development of health problems during pregnancy and having an unplanned pregnancy

The majority (74.4%) of the respondents reported that developing health problems during pregnancy and having an unplanned pregnancy is a challenge, while 25.6% did not think so. Developing health issues during pregnancy can be dangerous because they can pose a threat to the unborn baby and complications for the mother. Yet, 25.6% of women in this study do not know that it threatens their health and pregnancy outcomes, suggesting limited PCC knowledge.

4.4.5 Impact of sexually transmitted infections

PCC includes the knowledge of sexual infections and their harmful impact on both the mother and unborn baby. Yet, 12% of the respondents reported that they would not become worried about the effects of STIs. In comparison, 88% reported they would be worried, although the percentage of respondents who would not become worried about

the impact of STI is low. However, it is still concerning because it indicates the lack of PCC knowledge among women of childbearing age.

4.4.6 Birth control prevents unplanned pregnancy.

A majority (56.4%) of the respondents reported that birth control does not always prevent pregnancy, and 43.6% reported that birth control prevents pregnancy. This study found a relationship between respondents' educational levels and their understanding of PCC; women with greater levels of education had a better PCC understanding. This study supports Akinajo, Osanyin & Okojie (2019), who found that preconception knowledge increases with one's schooling level.

Table 4.2: Knowledge of preconception care among women of childbearing age

		Frequency	Percent %	Valid Percent
Quality of sexual knowledge				
Valid	Limited	47	40.2	40.2
	Strong	70	59.8	59.8
Appropriate knowledge of contraception				
Valid	Limited	65	55.6	55.6
	Strong	52	44.4	44.4
Knowledge that contributes to healthy pregnancy and baby				
Valid	Limited	39	33.3	33.3
	Strong	78	66.7	66.7
Development of health problems during pregnancy				
Valid	not a problem	30	25.6	25.6
	serious problem	87	74.4	74.4
Having an unplanned pregnancy				
Valid	not a problem	30	25.6	25.6
	serious problem	87	74.4	74.4
Become worried about the impact of sexually transmitted infections				
Valid	not at all	14	12	12

	a lot	103	88	88
Birth control prevents unplanned pregnancy				
Valid	not at all	66	56.4	56.4
	a lot	51	43.6	43.6
Knowledge about smoking				
Valid	Important	74	63.2	63.2
	not important	43	36.8	36.8
Knowledge about alcohol				
Valid	Important	72	61.5	61.5
	not important	45	38.5	38.5
Knowledge about maternity care				
Valid	Important	111	94.9	94.9
	not important	6	5.1	5.1
Knowledge about genetic counselling				
Valid	Important	109	93.2	93.2
	not important	8	6.8	6.8
Knowledge about drug use				
Valid	Important	88	75.2	75.2
	not important	29	24.8	24.8

4.4.7 Knowledge about alcohol, maternal care, genetic counselling and drug use

The majority of the respondents reported that it is important to know or have the respective services when planning a pregnancy. For example, one should anticipate the dangers associated with smoking (63.2%), alcohol (61.5%), maternity care (94.9%), genetic counselling (93.2%), and drugs (75.2%). On the other hand, the respondents reported that it is not important for them to seek knowledge about the following (as indicated in Table 2): smoking (36.8%), alcohol (38.8%), maternity care (5.1%), genetic counselling (6.8%), and drugs (24.8%). This study revealed that most respondents indicated the importance of knowing and seeking knowledge regarding factors related to PCC. This finding contradicted the results of the study conducted by Akinajo, Osanyin & Okojie (2019) in Nigeria, revealing a low knowledge level among respondents.

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4.4.8 Respondent's age at first birth in contrast with the number of children per woman (count)

Figure 4.1 below shows the results of the respondent's age at first birth in contrast with the number of children per woman (count). This study revealed that 89.7% of the respondents know the appropriate childbearing age. However, approximately 9.4% of respondents did not know about the danger of grand multi gravida, and 31.62% also did not know the importance of birth spacing.
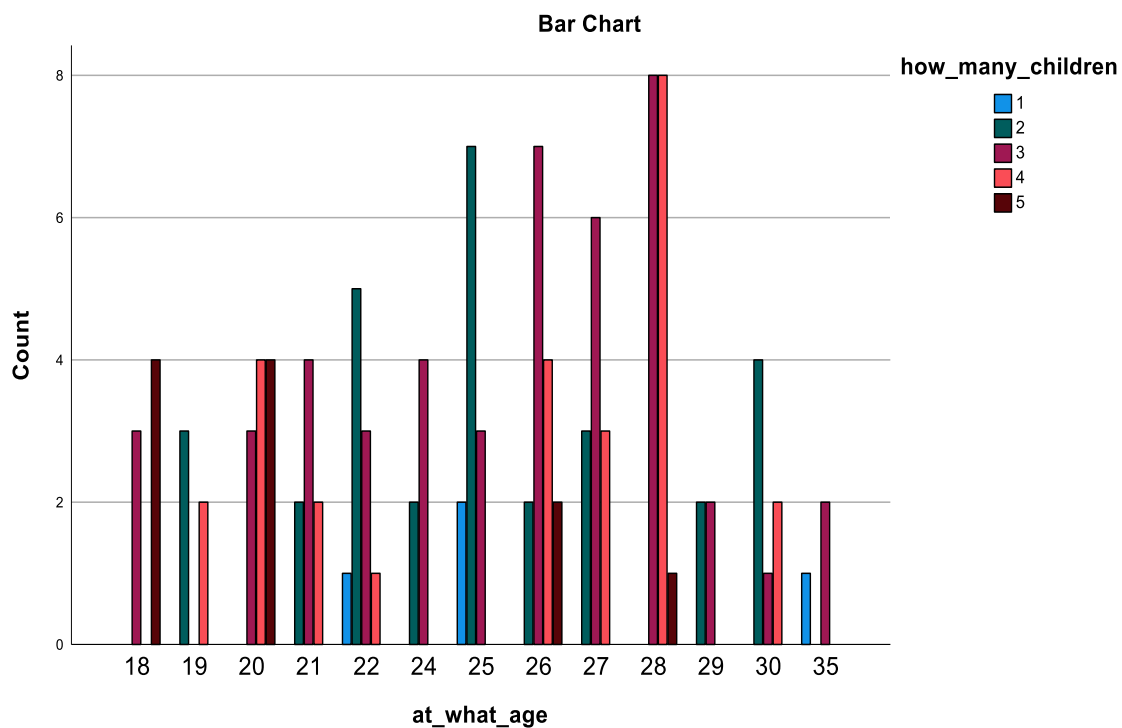
Figure 4.1: First birth in contrast with the number of children per woman (count)

4.5 ATTITUDE TOWARDS PRECONCEPTION CARE

Figure 4.2 shows that most respondents have a positive attitude towards PCC; 77% were confident they would get preconception counselling before getting pregnant, and 84.6% believed they would follow the advice given at preconception counselling in order to have a healthy pregnancy and baby. The majority of the respondents clearly show a positive

attitude towards PCC; however, a concerning percentage of respondents had a negative attitude towards PCC, indicating a lack of information regarding the importance of PCC knowledge among women of childbearing age. This percentage is a little lower than that identified by Kransdorf, Raghu, Kling et. al (2016) whose study found that nearly all respondents (98.6%) understood the value of improving their health before becoming pregnant (Teng & Ahmed, 2017). This current study shows that 56.41% of respondents are confident they would abstain from sex if birth control is unavailable. Similarly, 48.72% are confident that they would use birth control each time they have sexual intercourse when preventing pregnancy. Moreover, the majority (76%) of the respondents indicated they have time for PCC, and 82.1% agree that nurses are the best for providing PCC services.
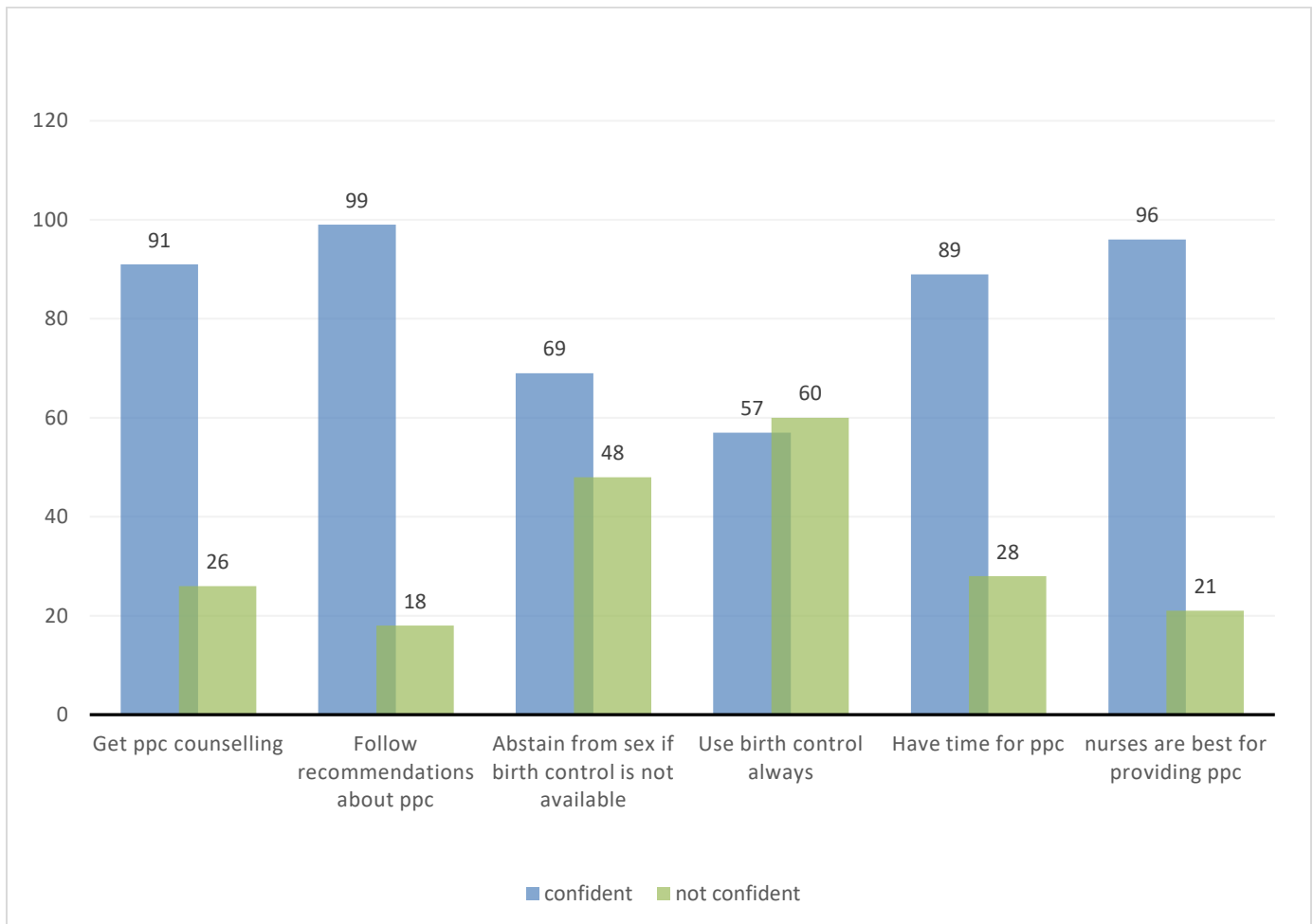
Figure 4.2: Attitude to preconception care

4.6 POTENTIAL ACCESS TO RESOURCES AND SERVICES

Table 4.3: Access to preconception care resources and services

	Frequency		Percent %	
	Yes	No	Yes	No
Access to healthcare facilities	117	0	100.0	0
Afford health services	117	0	100.0	0
Health facilities provide preconception care	37	80	31.62	68.38
Provided with resources that promote preconception care	37	80	31.62	68.38

Regarding the accessibility to PCC resources and services, all (100%) respondents have access to healthcare facilities. Therefore, 100% of respondents can afford health services. Moreover, 31.62% replied that the health facilities provide PCC; this shows that the health facilities are inconsistent when providing patients with PCC. PCC and related information should be provided to all, yet 68.38% indicated that the health facilities do not provide them with PCC services, which shows that there is limited knowledge regarding PCC among women of childbearing age. In addition, 31.62% of respondents reported that the health facility provides them with services and resources that promote PCC services, and 68.38% reported that they are not provided with resources that promote PCC from their health facilities. Several respondents indicated they were provided with PCC resources; however, most reported that they were not provided with them, which shows that PCC was inconsistently provided to all patients. All the respondents reported that they have good access to health facilities and can afford health services as they have a primary healthcare facility in the village. Yet, the majority indicated that they are not provided with PCC services, as illustrated in Table 4.3.

4.7 SUMMARY

The researcher analysed the findings of this study, which aimed to assess the knowledge of women of childbearing age about preconception healthcare services in the rural areas of Vhembe District, Limpopo Province, Rural area of Vhembe district. Most respondents had not received any information about PCC. However, while all respondents had access to a healthcare facility, only a few had received PCC service at their healthcare facility. In addition, the majority of respondents had a positive attitude toward receiving and following PCC recommendations provided to them. The respondents' knowledge, attitude, and behaviours were influenced by a few demographic characteristics such as gender, age, occupation and respondents' educational level. The study also noted certain enablers and challenges to the provision of PCC. Therefore, this research needs further studies.

4.8 CONCLUSION

This chapter presented the data analysis and results of the study. The conclusions and recommendations of the study are discussed in Chapter 5.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter presented the study's findings. This chapter discussed the limits, suggestions, and analysis of the research findings on PCC knowledge among women of childbearing age. The chapter also highlighted the study's limitations. Finally, suggestions are made based on the research findings and the study's conclusions.

The research objectives are to:

- Determine the knowledge among women of childbearing age regarding preconception healthcare services on risk prevention of pregnancy in Rural area of Vhembe district.
- Describe the attitudes of women of childbearing age towards preconception care knowledge.
- Identify the healthcare services received on risk prevention before pregnancy by women of childbearing age in Rural area of Vhembe district.

The study's research questions are stated as follows:

- Do women of childbearing age know the preconception and risk prevention healthcare services before pregnancy at Rural area of Vhembe district, Limpopo Province?
- What attitudes do women of childbearing age have toward preconception healthcare services at Rural area of Vhembe district, Limpopo Province?
- Do women of childbearing age receive any healthcare service as a risk prevention method before pregnancy at Rural area of Vhembe district, Limpopo Province?

5.2 RESEARCH DESIGN AND METHOD

As philosophical "assumptions dictate methodological decisions," the study design is tied to the researcher's and the study's philosophical viewpoint. The research question, objectives, phenomena of interest, population, and sampling techniques all impact the study design (Majid, 2017). A non-experimental, descriptive, and cross-sectional survey was employed for this study. Cross-sectional studies seek to gather verifiable information that enables the formulation of solid findings and the development of unique hypotheses that can be explored in further study. This design was appropriate for this study because it was cost-effective and targeted a larger sample size.

The objective of the non-experimental design was to analyze the situation as it was without any changes (Grove & Gray, 2018). The researcher did not intend to provide any intervention for this study because it was beyond the project's parameters; hence, a non-experimental design was adopted. Expanding the knowledge base, which opens new opportunities for learning and growth, is the reason for this design. A relationship or association is found when one variable varies systematically, directly or indirectly. This design helps identify things that need further investigation, which was applied in this study.

Descriptive design can be used to find issues with current practice, defend the practice, form opinions, find out what similar experts are doing in comparable circumstances, or create a theory (Grove & Gray, 2018). In this study, the respondents were questioned on their knowledge regarding preconception healthcare services to child mortality to identify the issues. The researcher described the knowledge among women of childbearing age regarding preconception healthcare services in the Vhembe District. In this study, the population consisted of women between 18 and 35 years residing in Rural area of Vhembe district. The estimated population of women of childbearing age was 10.2% of the females, which was approximately 117 women, leading to a sample size of 117. A statistician used IBM SPSS Statistics version 27 to analyze the data. Graphs and cross-tabulations were used to display descriptive statistics.

5.3 SUMMARY AND INTERPRETATION OF THE RESEARCH FINDINGS

- **Respondent's occupation**

In terms of occupation, 20.5% of respondents are employed, 44.4% are unemployed, 23.9% are students, and 11.1% do not fit into any of the above categories. The majority of women with low, moderate, or no income did not use PCC services, compared to wealthy, high-income women, according to several studies conducted in African countries. This study thus supports previous research indicating that employed women were more likely than unemployed women to visit PCC services. In addition, the majority of employed women had a positive attitude towards receiving PCC.

- **Respondents' highest level of education**

The respondents' educational backgrounds reveal their highest degree of schooling. In this study, 1.7% of respondents had only completed elementary school, 65.8% had completed high school, and 32.5% had completed tertiary education. Thirty-two-point five percent of women attended higher education, while 65.8% never attended or completed secondary school. Since most respondents lacked higher education, it is clear that the women in this study knew less about the importance of education and, thus, do not value preconception knowledge.

- **Knowledge of preconception care**

According to the findings of this study, 70.9% of women reported receiving no PCC information from any healthcare practitioner. This indicates that healthcare practitioners have negligible information distribution among childbearing women. This demonstrates that childbearing women lack adequate understanding.

Regarding PCC knowledge, 40.2% of respondents reported receiving solid sexual education, while 59.8% reported receiving limited sexual knowledge. The majority of respondents did not have a suitable degree of understanding about sexual awareness, indicating that there is insufficient knowledge regarding sexual PCC.

- **Appropriate knowledge of contraception**

Family planning programmes are essential for PCC because they prevent unintended pregnancies. In this study, 44.4% of respondents reported having good knowledge about pregnancy prevention. In comparison, 65.6% reported poor knowledge about pregnancy prevention, indicating that PCC knowledge has not yet been fully addressed because most women of childbearing age lack adequate knowledge about contraceptive methods.

- **Knowledge that contributes to a healthy pregnancy and baby**

The mother's understanding of caregiving influences the effectiveness of the care provided to the new-born or child. According to this study, 66.7% of respondents were informed of the factors contributing to a successful pregnancy and healthy child, compared to 43.3% who were not. Although most people are informed, the percentage of individuals with little understanding of the factors that influence their and their baby's health is concerning, showing a lack of PCC knowledge.

- **Development of health problems during pregnancy and having an unplanned pregnancy**

When asked whether having an unwanted pregnancy and experiencing health issues while pregnant are severe, 74.4% of respondents said they are, while 25.6% said they are not. Although having health challenges during pregnancy can be risky for both the mother and the unborn child, only 25.6% of the women in this study are aware that they pose a risk to their health and the success of their pregnancies, demonstrating a lack of PCC knowledge.

- **Impact of sexually transmitted infections**

PCC involves knowledge about sexual infections and their adverse effects on both the mother and the unborn baby; yet 12% of respondents said they would not be concerned about the impact of STI, while 88% said they would be concerned. While the percentage of respondents who would not be concerned about the impact of STI is low, it is nevertheless significant since it demonstrates the impairment of the service and the lack of knowledge that these women have.

- **Birth control prevents unplanned pregnancy.**

Forty-three-point six percent of respondents said that birth control always prevents pregnancy, while 56.4% said it does not constantly do so. According to this study's findings, women with greater levels of education had better PCC knowledge, which also found a correlation between respondents' knowledge of PCC and their educational background. This study supports Akinajo, Osanyin & Okojie (2019), who found that education increases preconception knowledge.

- **Knowledge about alcohol, maternal care, genetic counselling and drug use**

The majority of respondents indicated that it is important to be aware of the following when preparing for pregnancy: smoking (63.2%), alcohol (61.5%), maternity care (94.9%), genetic counselling (93.2%), and drugs (75.2%). However, knowledge about smoking (36.8%), alcohol (38.8%), maternity care (5.1%), genetic counselling (6.8%), and knowledge about drugs (24.8%) were among the topics that respondents said they did not find crucial to learn more about. On the other hand, most respondents believed it was crucial to be aware of and seek out information on PCC-related factors. This conclusion was at odds with the findings of a study in Nigeria which showed that respondents had a poor understanding.

- **Attitude towards preconception care**

The majority of respondents in this study have a favourable attitude regarding PCC. Seventy-seven percent of respondents said they were confident they would have preconception counselling before becoming pregnant, and 84.6% said they would heed the advice given at the counselling in order to have a healthy pregnancy and child. Despite the majority of respondents displaying a positive attitude toward PCC, there is still a concerning percentage of respondents who had a negative attitude toward PCC, suggesting that there is a lack of knowledge among women of childbearing age regarding the significance of PCC. According to this study, 56.41% of respondents are certain they would stop being sexually active if birth control were inaccessible, and 48.72% are confident that they would use birth control every time they engaged in sexual activity to

avoid becoming pregnant. Most respondents (76%) indicated that they have time for PCC. According to 82.1% of respondents, nurses are the best at offering PCC services.

- **Potential access to resources and services**

Regarding the services and resources available for PCC's accessibility, access to healthcare facilities is available to all study respondents. All respondents (100%) said they could afford healthcare services. However, PCC is provided by health facilities, according to 31.62% of respondents, demonstrating a lack of consistency. In comparison, 68.38% of respondents said their health facilities do not offer them resources to support PCC, whereas 31.62% said they receive PCC services and resources. Although some respondents indicated they had access to PCC resources, most claimed none, demonstrating that not all patients received PCC consistently. As there is a primary healthcare facility in the village, all respondents said they had easy access to the healthcare facility and could afford the health services. However, the majority indicated that they do not receive PCC services.

5.4 DISCUSSION

This study showed that responders had a good level of PCC knowledge. However, the respondents' understanding of the risks associated with poor spacing, the significance of contraceptives, and suggestions for optimal birth spacing practices are limited. In this study, nearly all respondents who had previously undergone PCC learned about it at an antenatal clinic after becoming pregnant. This finding is alarming because Multiple studies have shown links between short intervals between births and poor results for mother and child health, including infant and maternal mortality. Women in low- and middle-income countries are more likely to have recent births (Pimentel et al., 2020).

Preconception clinics have not been formally recognised in diverse communities. However, PCC is included during family planning appointments and follow-up visits for chronic illnesses like diabetes and hypertension. Therefore, it is possible that women that do not visit clinics and who don't have a chronic condition aren't aware of PCC.

The attitudes and participation of women are essential for the effectiveness of PCC. The results of the current study indicated that most of the women in Rural area of Vhembe district had positive attitudes concerning PCC. However, the minority with a negative attitude towards PCC shows a need for awareness and educational campaigns that will emphasise the benefits of PCC services to promote good obstetric outcomes. According to a study done in rural Africa, moms there have lower levels of awareness and a more negative attitude toward preconception care than in other studies (Kassa et al., 2019).

5.5 RECOMMENDATIONS

Nurses, in particular, should exert more effort to persuade women to consider PCC and repeatedly stress the value and advantages of such care. The researcher recommends that education about pre-pregnancy care be given continuously, beginning in school. Information about pre-pregnancy care can be incorporated into school curricula, particularly in higher education. All childbearing women who visit clinics for purposes other than pregnancy planning should also be given this information. Health education programmes at healthcare centres and leaflet distribution are two ways to spread knowledge and also including awareness programmes and integration of PCC in sexual and reproductive health and HIV services. The importance of men in preconception health and healthcare should be acknowledged; men's education may raise married couples' understanding of these issues.

5.6 CONTRIBUTION OF THE STUDY

Bringing forth knowledge about the preconception of women of childbearing age contributes to reducing the child mortality rate, which may decrease the fertility rate in developing areas.

This study may help nursing staff respond to changes in the healthcare environment, patients, populations and government regulations. The outcomes from this study may open doors for further studies on this topic or related topics, which might present different findings from the previous researcher. The community may also benefit from this research

regarding societal issues, including women's equality, improved communication among couples, and increased collective decision about birth abnormalities, birth spacing, etc. Informing women about preconception may reduce the rate of child mortality and morbidity caused by health complications which benefit the NDoH, which will benefit the health system by reduction in costs. Additionally, recommendations could be made to enhance preconception healthcare services, increasing their accessibility and use by women planning to have children to avoid pregnancy risks.

5.7 LIMITATIONS OF THE STUDY

This study's sample size was modest; out of 1151 females, only 180 were eligible for this study. Only 117 (10,2%) of the targeted population were available and willing to participate in the study, leaving out the 5.4% of the population not included due to unavailability and unwillingness to participate. Most females were either over the age of 35 or younger than 18 years. Most people who are based in Rural area of Thulamela municipality, Vhembe district are elderly people. The other limitation was that it was not easy to gather the target group because others were not interested at first, and others were at work during the time data were collected. The sample size was small, so the generalizability was not possible.

5.8 CONCLUSION

The study intended to assess knowledge among women of childbearing age regarding preconception healthcare services in the rural area of Vhembe District, Limpopo Province. This study used a non-experimental, descriptive, and cross-sectional survey. This study was able to meet the objectives of this study; this study revealed that most women of childbearing age were fairly knowledgeable about PCC. However, most of them had never received any information regarding PCC or any healthcare practitioner, which showed they had access to healthcare services; yet the minority were not provided with PCC services. Most reported that they were provided with PCC services during ANC or

their monthly consultations. This finding showed a need for healthcare providers to emphasize the need and benefits of PCC services for women of childbearing age.

5.9 REFERENCES

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APPENDIX A: ETHICAL CLEARANCE CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms RP Kubayi

STUDENT NO:
16013820

PROJECT TITLE: **Knowledge among childbearing age women regarding preconception health care services in the rural area of Vhembe District, Limpopo Province.**

ETHICAL CLEARENCE NO: FHS/22/PDC/01/2504

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr NS Raliphaswa	University of Venda (Advanced Nursing Sciences)	Supervisor
Prof ML Netshikweta	University of Venda (Advanced Nursing Sciences)	Co - Supervisor
Ms RP Kubayi	University of Venda	Investigator – Student

Type: **Masters Research**
Risk: **Minimal risk to humans, animals or environment (Category 2)**
Approval Period: **April 2022 – April 2024**

The Human and Clinical Trails Research Ethics Committee (HCTREC) hereby approves your project as indicated above.

General Conditions
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following.
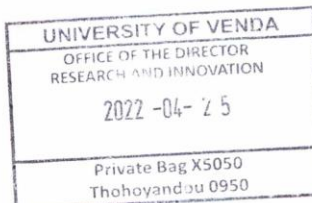- The project leader (principal investigator) must report in the prescribed format to the REC:
  - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project
  - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
  - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the REC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date; a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
  - Request access to any information or data at any time during the course or after completion of the project,
  - To ask further questions; Seek additional information; Require further modification or monitor the conduct of your research or the informed consent process.
  - withdraw or postpone approval if:
  - Any unethical principles or practices of the project are revealed or suspected.
  - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
  - The required annual report and reporting of adverse events was not done timely and accurately,
  - New institutional rules, national legislation or international conventions deem it necessary

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE
Date Considered: March 2022

Name of the HCTREC Chairperson of the Committee: Prof MS Maputle

Signature   *MSMaputle*

UNIVERSITY OF VENDA
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"A quality driven financially sustainable, rural-based Comprehensive University"

APPENDIX B: APPROVAL OF MASTERS PROPOSAL REPORT

UNIVERSITY OF VENDA

OFFICE OF THE DVC: RESEARCH AND POSTGRADUATE STUDIES

TO   :   MR/MS R.P KUBAYI

FACULTY OF HEALTH SCIENCES

FROM: PROF. N.N FEZA

DVC: RESEARCH AND POSTGRADUATE STUDIES

DATE :   29 AUGUST 2022

DECISIONS TAKEN BY UHDC OF 29TH AUGUST 2022

Application for approval of Masters Proposal Report in the Faculty of Health
Sciences: R.P Kubayi (16013820)

Topic: "Knowledge among childbearing age women regarding pre-conception
health care services in Vhembe District."

Supervisor   UNIVEN   Dr. N.S Raliphaswa
Co-supervisor   UNIVEN   Prof. M.L Netshikweta

UHDC approved Masters proposal

PROF. N.N FEZA
DVC: RESEARCH AND POSTGRADUATE STUDIES

APPENDIX C: PERMISSION TO CONDUCT THE STUDY

LETTER TO THE CHIEF

                            Private Bag x 5020

                            Thohoyandou

                            0950

                            April 2022

Dear Sir,

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH

I am a student at The University of Venda's Department of Advanced Nursing Science; I hereby request permission to conduct research in your community. The title of the study is **KNOWLEDGE AMONG CHILDBEARING-AGE WOMEN REGARDING PRECONCEPTION HEALTHCARE SERVICES IN THE RURAL AREA OF VHEMBE DISTRICT, LIMPOPO PROVINCE**

This study has the following recommendations: empowering child age-bearing women to make informed decisions about seeking healthcare before pregnancy and enhancing family and social support systems for child-bearing women regarding preconception healthcare services in Rural area of Vhembe district.

I assure you that there will be no disturbances in the community when conducting this research. Moreover, complete anonymity and confidentiality of every response is guaranteed to all the respondents; no names will be required, and no rewards will be given to respondents who participate in the research. For more information, please feel free to contact the group leader (0721118539) or email: refiloekubayi@gmail.com.

I hope that our request will be taken into consideration.

Yours faithfully,

…………………………….

© University of Venda

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

Appendix B

LETTER OF INFORMATION

Title of the Research Study: Knowledge among childbearing-age women regarding preconception healthcare services in the rural area of Vhembe district, Limpopo province

Principal Investigator/s/ researcher: Refiloe Precious Kubayi

Bachelor of Nursing Sciences (UNIVEN)

Co-Investigator/s/supervisor/s: Dr Raliphaswa NS and Prof Netshikweta ML

Brief Introduction and Purpose of the Study: Preconception care or pre-pregnancy care, according to World Health Organization, is "the provision of biomedical, behavioural and social health interventions for women and couples before conception occurs." According to the Declaration of Alma-Ata (2019), maternal and child healthcare is integral to primary healthcare. However, there is a lack of knowledge among child age-bearing women regarding preconception healthcare services in rural areas, contributing to high mortality and morbidity rates and untoward pregnancy outcomes. This study will focus on the knowledge among women of childbearing age regarding preconception healthcare services to child mortality in Rural area of Vhembe distric

Outline of the Procedures: The researcher will use in-depth face-to-face interviews with women aged between 18 and 35 years residing in Rural area of Vhembe district in their respective homes. Each interview will take approximately 30 to 40 minutes.

Risks or Discomforts to the Respondent: The respondents may feel uncomfortable if too many questions are asked simultaneously.

Benefits: The respondents and the community of Rural area of Vhembe district at large will gain knowledge regarding preconception healthcare services.

Reason/s why the Respondent May Be Withdrawn from the Study: The respondent may be withdrawn from the study if she is sick or an emergency requires her attention.

Remuneration: None
Costs of the Study: None

Confidentiality: Respondents will be reassured that all information provided will remain confidential and will not be published without their consent. The researcher will ensure that no one accesses the raw data of the research without authorisation.

Research-related Injury: None

Persons to Contact in the Event of Any Problems or Queries:
Please contact the researcher (0721118539), 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.

Research and Innovation

Office of the Director

_____

General:

Potential respondents must be assured that participation is voluntary, and the approximate number of respondents to be included should be disclosed. A copy of the information letter should be issued to respondents. The information letter and consent form must be translated and provided in the primary spoken language of the research population

CONSENT

Statement of Agreement to Participate in the Research Study:

- I ……………………… hereby confirm that I have been informed by the researcher, **Refiloe Precious Kubayi**, about the nature, conduct, benefits and risks of this study – Research Ethics Clearance Number: _____.
- I have also received, read and understood the above-written information (_Respondent 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 computerised 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

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- I understand that significant new findings developed during this research that may relate to my participation will be made available to me.

Full Name of Respondent   Date   Time   Signature

……………..………..   …………………..….. …………..   ………………………

I, **Refiloe Precious Kubayi**, herewith confirm that the above respondent has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher   Date   Signature

REFILOE PRECIOUS KUBAYI   **11/04/2022**   …………………….………

Full Name of Witness (If applicable)

…………………….   Date ………………..   Signature………………

_____

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective respondents should be helped to arrive at an informed decision by use of appropriate language (grade 10 level – use Flesch Reading Ease Scores on Microsoft Word), selecting a non-threatening environment for interaction and the availability of peer counselling (Department of Health, 2004).

If the potential respondent is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the respondent, e.g. parent, sibling, friend, pastor, etc., should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document, e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the respondent's file and not thrown away, and copies thereof must be issued to the respondent.

References:

Department of Health. 2004. *Ethics in health research: Principles, structures and processes.* Available from: http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/.

Department of Health. 2006. *South African Good seal Practice Guidelines*. 2nd Ed. Available from: http://www.nhrec.org.za/?page_id=14

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INSTRUCTIONS:

1. Kindly and honestly respond to these questionnaires below.
2. Do not write your name.
3. Do not tear any pages.
4. Tick or fill in all appropriate answers in the space provided.

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

1. Gender
o Male
o Female

2. Age
o 18-25
o 26-35
o 36-45

3. Occupation
o Employed
o Unemployed
o Student
o Other

4. Highest level of education
o Primary school
o Secondary school
o Tertiary level
o Other

SECTION B: PRECONCEPTUAL CARE-RELATED QUESTIONS

1. **Has a healthcare practitioner ever given you any information regarding preconception care?**

    o   Yes

    o   No

2. **Do you hope to have biological children one day?**

    o   Yes, if so: At what age_____

    How many children would you hope for_____

    o   No

3. **How would you describe the quality of the sexual education you have received thus far?**

    o   Limited

    o   Ample

4. **How would you range the topics that have been covered in sexual education thus far?**

    o   Limited

    o   Ample

5. **How would you rate your level of information on pregnancy prevention and contraception?**

    o   Limited

    o   Ample

6. **How would you rate your knowledge of health behaviour that would help you have healthier pregnancies and children in the future?**

    o   Limited

    o   Ample

7. **If you were to become pregnant, to what degree would you feel equipped with the knowledge you would need to contribute to a healthy pregnancy?**

    o   Not at all knowledgeable

    o   Very knowledgeable

8. If you developed health problems during pregnancy, do you think that those problems would be:

o Not a problem

o Serious problem

9. If you had an unplanned pregnancy, do you think that this would be:

o Not a problem

o Serious problem

10. Please select one answer to each of the questions below (assuming you are sexually active). Tick √ all that apply:

	Not at all	A lot
How much do you worry that you will become pregnant?		
How much do you worry that you could have sexually transmitted infections?		
How much do you worry that you could develop health problems during pregnancy?		
Would using birth control prevent unplanned pregnancy?		
Would seeking preconception counselling when planning a pregnancy improve your chances of having a healthy baby?		
Would getting preconception counselling to improve your chances of having a healthy pregnancy be important to you?		
How difficult would it be to follow the preconception counselling advice given by the health practitioner?		
How difficult would it be for you to seek preconception counselling when planning a pregnancy?		

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11. **How important do you feel the following services are for people planning a pregnancy? Tick √ all that apply:**

	Important	Not of importance
Smoking		
Alcohol		
Maternity care		
Genetic counselling		
Drug use		

SECTION C: ADDITIONAL FACTORS RELATED TO PRECONCEPTION CARE

12. **How confident am I that I could (Tick √ all that apply):**

SCALE:	NO	YES
Get preconception counselling before I get pregnant		
Follow the recommendation I am given in preconception counselling to help me have a healthy pregnancy and baby		
Abstain from sex if birth control is not available		
Use birth control each time I have sex when preventing pregnancy		

SECTION D: ATTITUDE TOWARD PRECONCEPTION CARE (Tick √ all that apply):

	Agree	Disagree
PCC is an important health issue for women of childbearing age		
A dedicated clinic for PCC is a luxury service		
Do you have time for PCC		
Do you think nurses are the best for providing PCC		
I prefer to deal with risk factors before pregnancy rather than during pregnancy		
Initiating talks about pregnancy wishes is comfortable		

SECTION E: ACCESS TO ACTUAL AND POTENTIAL RESOURCES AND SERVICES

1. **Do you have good access to health facilities?**
   - Yes
   - No, why_____

2. **Can you afford the services provided?**
   - Yes
   - No

3. **Do those health facilities provide preconception care?**
   - Yes, if so, when_____
   - No

4. **Are you provided with resources that promote preconception care (e.g. birth control, multivitamin, folic acid, health education regarding preconception care)**

o Yes, if so, how often_____

o No

5. What recommendations can you make to improve healthcare services?

_____
_____
_____
_____

Your participation is highly appreciated.

Thank you!

APPENDIX F: LANGUAGE EDITING CERTIFICATE

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EDITORIAL

21 February 2023

Editorial Certificate

To Whom It May Concern,

This certificate confirms that the dissertation entitled; **KNOWLEDGE AMONG CHILDBEARING AGE WOMEN REGARDING PRECONCEPTION HEALTHCARE SERVICES IN THE RURAL AREA OF VHEMBE DISTRICT, LIMPOPO PROVINCE** by **REFILOE PRECIOUS KUBAYI** was edited by an expert English editor with a PhD. The following issues were corrected: grammar, spelling, punctuation, sentence structure, phrasing, and formatting.

Signed on behalf of NIM Editorial by:

....
Dr N.I. Mabidi
Founder & Chief Editor

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