Midwives' experiences regarding the implementation of prevention of mother to child transmission (PMTCT) guidelines in Mopani District of Limpopo Province, South Africa

By

ONDWELA MATOMBO

Student Number: 11603412

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Department of Advanced Nursing Science

Faculty of Health Sciences

University of Venda

Supervisor	Co-Supervisor
Dr Netshisaulu KG	Dr Tshililo AR

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DECLARATION

I, Ondwela Matombo, declare that the thesis entitled **- "Midwives' experiences regarding the implementation of PMTCT guidelines in the Mopani District of Limpopo Province, South Africa" -** is my own work. All sources used have been indicated and acknowledged by means of complete references, and that this work has not been previously submitted by me for any degree at this or any other institution.

Student's Signature: O Matombo

Student Number: 11603412

Date Signed:2022. 02. 20

DEDICATION

The study is dedicated to my late mother, Mamaila Sophy Maluleke and my late father, Tshamano Pheneas Matombo.

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ABSTRACT

Background: Midwives are responsible for provision of prevention of mother-to-child transmission (PMTCT) services. These involve a wide variety of tasks, ranging from HIV diagnosis, prescription of anti-retroviral therapy, ensuring safe obstetrics during delivery, counselling on infant feeding and management of opportunistic infections. The aim of this study was to explore midwives' experiences regarding implementation of PMTCT guidelines in Mopani District.

Methods: A qualitative approach which is exploratory and descriptive in nature was used. The study was conducted in primary healthcare facilities under Greater Giyani sub-District. The population comprised of all midwives working in the primary health care facilities under the Greater Giyani sub-District. A non-probability, purposive sampling method was used to select 35 midwives with at least 2 years of experience in implementing PMTCT guidelines, and the same method was used to select primary healthcare facilities. Data was collected from through in-depth face-to-face interviews using a semi-structured interview guide. Data was collected from 17 participants. The researcher made use of a voice recorder to capture the interviews with the consent of the participants. Trustworthiness was ensured by using the model of Lincoln and Guba that looks at credibility, dependability, confirmability and transferability. Ethical principles, such as anonymity, confidentiality and informed consent were strictly adhered to. Data was analyzed through an interpretive phenomenological analysis (IPA).

Results: There were challenges experienced during implementation of PMTCT in primary healthcare facilities, despite this, the findings of the study revealed that there is a certain degree of progress on the implementation of PMTCT guidelines by midwives. There are now fewer cases of PCR positive that are being reported, improved midwives' attitude towards HIV positive patients and introduction of mentor mothers.

Participants reported employer as well as patient-related challenges affecting implementation of PMTCT guidelines. Lack of training, shortage of midwives and a lot of paper work was one of employer-related challenges, Poor quality care provision by midwives was also reported as a factor which is negatively affecting implementation of PMTCT guidelines in primary healthcare facilities.

Recommendations: The study recommended that universities and colleges train students for PMTCT and NIMART so that they have the required knowledge before completing their courses. Training of more midwives to promote provision of PMTCT services, consolidation of PMTCT registers and provision of gadgets for filling patient's records in order to reduce workload were some of the recommendations.

Keywords: Consolidation; Experiences; implementation; midwives; PMTCT guidelines,

LIST OF ABREVIATIONS AND ACRONYMS

AIDS – Acquired Immunodeficiency Syndrome

ANC- Antenatal Care

ART- Antiretroviral Therapy

CD4- Cluster of difference 4

EMTCT- Elimination of Mother-to-Child Transmissions

HEI- HIV-exposed infants

HIV – Human Immunodeficiency Virus

HIV/AIDS- Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome

IPA- interpretive phenomenological analysis

MTCT – Mother-to-Child Transmission

NIMART- Nurse initiated management of Anti-retroviral Therapy

NGO- Non-Government Organisation

NVP- Nevirapine

PCR- Polymerase Chain Reaction

PHC – Primary Health Care

PMTCT – Prevention of Mother-to-Child Transmission

PHCF- Primary Health Care Facilities

RSA- Republic of South Africa

SDGs- Sustainable Development Goals

UNAIDS- Joint United Nations program on HIV and AIDS

WHO- World Health Organization

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1. INTRODUCTION AND BACKGROUND

Prevention of mother-to-child transmission (PMTCT) intervention has the potential to eliminate vertical transmission of HIV from mothers to infants. In Australia, PMTCT was initiated in 2000, since then, the implementation of PMTCT program has had tremendous gains in preventing mother-to-child transmission of HIV (UNAIDS, 2016). The PMTCT guidelines provide guidance on strengthening antenatal and postnatal care for both HIV-negative and positive mothers, use of Antiretroviral (ARV'S) drugs and prevention of mother-to-child transmission (National consolidated guidelines, 2020).

These guidelines have further simplified ART provision and harmonized PMTCT and the management of children, adolescents and adult with HIV/AIDS, TB and other common opportunistic infections. The guidelines provide guidance for clinicians, managers and trainers on the use of available regimens within the context of the continuum of HIV comprehensive care for prevention, treatment and support for all age groups, in private and public sectors to realize the vision of long and healthy life for all (National Consolidated Guidelines, 2020).

There are effective strategies of preventing mother-to-child-transmission (PMTCT), despite this, their implementation remains a major challenge to health caregivers who provide the services (UNAIDS, 2016). Midwives in Europe are the main providers of PMTCT. They perform a wide variety of PMTCT-related tasks that range from HIV diagnosis, prescription of anti-retroviral therapy, ensuring safe obstetrics during delivery, counseling on infant feeding and management of opportunistic infections (Hanrahan, 2017).

In North America, Augustin (2015) revealed that there was 95% compliance with PMTCT guidelines by health workers. This is proven by the very low number of babies born with Human immunodeficiency virus (HIV), 5 years after the initiation of the PMTCT program. Based on the

findings by World Health Organization (WHO, 2018), Canada made a remarkable commitment to the global struggle against HIV/AIDS. One of the most effective ways to reduce new infections in Canada is through the improvement of PMTCT programs, an area which the country is wellpositioned to be a global leader. A study by Mutabazi, Zarowsky and Trottier (2017) indicated that indeed, Canada has low rates of new infections.

Unfortunately, the same cannot be said about developing countries like the Democratic Republic of Congo. In the DRC, Amboko and Brysiewicz, (2015) discovered that after 7 years of implementing PMTCT guidelines, 80% of nurses were noncompliant with PMTCT guidelines. In most sub-Saharan African countries, mother-to-child transmission of HIV remains the main mode of acquisition of HIV in children (Olubenga, 2013). In Nigeria, Olubenga (2013) found that midwives had moderate knowledge about the implementation of PMTCT guidelines as seen from their conduct and actions. By contrast, in Uganda, a study revealed that the level of knowledge of PMTCT and preference for rapid HIV testing was high in both rural and urban areas, although women in rural areas had a tendency to think that they should consult their husbands before making any health-related decisions (WHO, 2018).

Botswana started its PMTCT program in 1999 and Namibia in 2001 and by 2005, 70% of pregnant women in both countries had received PMTCT (Nguyen, 2014). Even though these countries had a high percentage of women participating in PMTCT programs, Nguyen (2014) revealed that there was still a high number of infants born with the virus. Nguyen (2014) concluded that socioeconomic and cultural factors were the biggest barriers to the success of PMTCT programs.

Statistics South Africa indicated that 23% of women received PMTCT in 2005, while there were less than 12% in 2004 (UNAIDS, 2016). Kingsley (2016) found that, in South Africa, nurses and doctors working at Odi community hospital in Gauteng knew that HIV counseling and testing was important and must be done for all mothers, however, they were unsure of the drug dosages for PMTCT. More than two-thirds of the doctors and nurses reported adhering to PMTCT guidelines, however, since their knowledge about dosages was inadequate, their actions may not have been appropriate (Kingesley, 2016).

In 2015, the consolidated guideline recommended breastfeeding for 12 months, currently, the 2019 updated version recommends breastfeeding for 24 months or longer. When guideline

updates are introduced, it is often the midwives who are tasked with the execution of the guidelines who bear the brunt for implementing the changes. A study conducted in Polokwane revealed that challenges preventing effective implementation of PMTCT are - increased workload, staff shortage, poor planning of training and shortage of equipment (Ogbonna, 2016). Other studies also found that lack of patient education, poor facilities' management and staff shortage are barriers to effective implementation of PMTCT programs (Chokwe and Ramukumba, 2015)

Several studies have been conducted about PMTCT knowledge and compliance, however, there is little research about experiences of midwives regarding the implementation of PMTCT guidelines in the Mopani District.

1.2. PROBLEM STATEMENT

The global community has committed itself to eliminating mother to child transmission (EMTCT) and syphilis as a public health priority (National Consolidated Guidelines, 2020). The former Minister of Health, of South Africa, Dr Aaron Motsoaledi assured delegates during the International Aids conference in Amsterdam that no woman is expected to give birth to HIV positive baby since there are PMTCT guidelines in place and necessary information disseminated (City Press, 201807-24. P17). According to the researcher, it appears that midwives are not providing proper HIV-related management as prescribed in the guidelines. Specimens like bloods and polymerase chain reaction (PCR) are not collected in time as prescribed in the guidelines and midwives struggle with the dose of prophylaxis. Midwives also have challenges with the techniques of delivering an exposed newborn. This affects the quality of care they provide to HIV-positive mothers and exposed babies. Government has made efforts to update guidelines and disseminate new information, despite this, there are still problems in implementing PMTCT guidelines. Midwives' non-compliance regarding implementation of PMTCT guidelines results in HIV-positive exposed newborn babies becoming HIV positive at a later stage (post-natal). In some cases, newborn babies lose weight and develop chest problems due to an over-dosage with prophylactic drugs.

It is in this light that the researcher sought to determine midwives' experiences regarding implementation of PMTCT guidelines in Mopani District of Limpopo Province.

1.3. RATIONALE FOR THE STUDY

In Nigeria, Ndikom and Onibokum (2016) revealed that health care workers still lack knowledge when it comes to the implementation of PMTCT guidelines. On the other hand *Amboko* and Brysiewicz (2015) concluded that socio-economic factors remains an obstacle to the implementation of PMTCT guidelines in Ethiopia. Obuglenga (2013) conducted a study in Mpumalanga, South Africa, about the experiences of pregnant women in rural areas after testing for HIV, during antenatal care, the study revealed that women don't make decision about their pregnancies without the male partner This study sought to fill the literature gap on the experiences of midwives regarding implementation of PMTCT guidelines in the Mopani District of Limpopo.

1.4. SIGNIFICANCE OF THE STUDY

The study on midwives' experiences regarding implementation of PMTCT guidelines is essential for several reasons.

NURSING PRACTICE

It is also hoped that the quality of care provided to patients will improve due to knowledge on the effective implementation of PMTCT guidelines, leading to a reduction of PCR-positive children. The study might benefit midwives by identifying strengths, needs, and challenges in implementing PMTCT guidelines and raise awareness among midwives regarding the need to implement PMTCT guidelines.

PATIENT AND COMMUNITY MEMBERS

The study is a comprehensive approach to combating HIV in infants and young children, specifically by reducing the risk of MTCT. It addresses a wide range of prevention, care, treatment and support services. Implementation of guidelines benefits the community and patients as it results in reduction of MTCT.

NURSING EDUCATION

The knowledge derived would assist and add value in the review of nursing education strategies on PMTCT and follow-up care for the benefit of all breast-feeding mothers. In effect, utilization of health care services may improve due to informed care and finally it is hoped that the study might contribute to scientific body of knowledge in the health care sector, especially in nursing education.

POLICY MAKERS

The study is also envisaged to also contribute to the development of policies and guidelines for the benefits of all exposed breast-feeding mothers in the future. The development of policies and guidelines is envisaged to increase level of knowledge and practices regarding PMTCT among these women, translating into better access and utilization of PMTCT services in South Africa.

STATE

The long term significance of the study will be reduction of vertical transmission of HIV, especially during the breastfeeding period. The study will also help improve maternal and child health, support South Africa to attain Millennium Development Goals (MDGs) number 4 and 5 which relate to the reduction of child mortality. The state will also benefit economically when budget used in purchasing ARVs is reduced.

SCIENTIFIC BODY OF KNOWLEDGE

The study will contribute to the body of knowledge; it is hoped that it will help other researchers when doing research in similar topics related to PMTCT.

1.4.1. PURPOSE

The purpose of the study was to determine midwives' experiences regarding the implementation of PMTCT guidelines in Mopani District of Limpopo Province.

1.4.2. RESEARCH QUESTION

What are the experiences of midwives regarding the implementation of PMTCT guidelines in Mopani District of Limpopo Province?

1.4.3. RESEARCH OBJECTIVES

To explore the experiences of midwives regarding the implementation of PMTCT guidelines in the Mopani District of Limpopo Province.

1.5. THEORETICAL FRAMEWORK

The theoretical framework is a structure that can hold or support a research and helps to clarify and define the implicit understanding of the topic (Pilot and Beck, 2017). The Donabedian model was utilized because it provides a framework for examining health services and evaluating quality care.

Donabedian believed that structure measures affect process measures, which in turn affect outcome measures. Measures have different purposes in determining whether the improvement of the project has had the desired impact (MacDonald, 2007).

According to the model, information about quality of care can be drawn from three categories: structure, process, and outcome. Donabedian defines structure as the professional and organizational resources associated with the provision of health care. Process is the procedure done to and for the patient, and outcome is the desired result of care provided by a health practitioner (MacDonald, 2007). Donabedian postulated that there are relationships between structure, process, and outcome constructs based on the idea that good structure should promote good process and good process should, in turn promote good outcomes.

Structure

This model was found appropriate for this study because it provides a framework for examining and evaluating the quality of health care. Structure describes the context in which care is delivered, including hospitals buildings, staff, financing, and equipment (McDonald, 2007). In this study, structure refers to resources necessary for effective implementation of PMTCT, such as trained staff members, laboratory and blood collection materials as well as antiretroviral drugs. Without a firm and well-built structure, effective implementation of PMTCT is not possible.

Process

Process is the procedure done for the patients and denotes the transactions between patients and providers throughout the delivery of healthcare (McDonald, 2007). It, includes the interactions between midwives and patients, antiretroviral therapy (ARV) given to the patient and health education about PMTCT. It is a process of how PMTCT services are provided. The model is applicable to the study because, for PMTCT guidelines to be implemented effectively, processes of diagnosis, prescription and administration of ARVs have to be followed.

Outcomes

This refers to the effects of healthcare on the health status of patients and populations (Donabedian 2007). In the proposed study, outcomes refer to the results of implementation of PMTCT guidelines. Positive outcomes depend on how structure and process have been attended to. In this study, reduction of PCR-positive rate is an anticipated positive outcome, which will help in the achievement of sustainable development goals to combat HIV/AIDS.

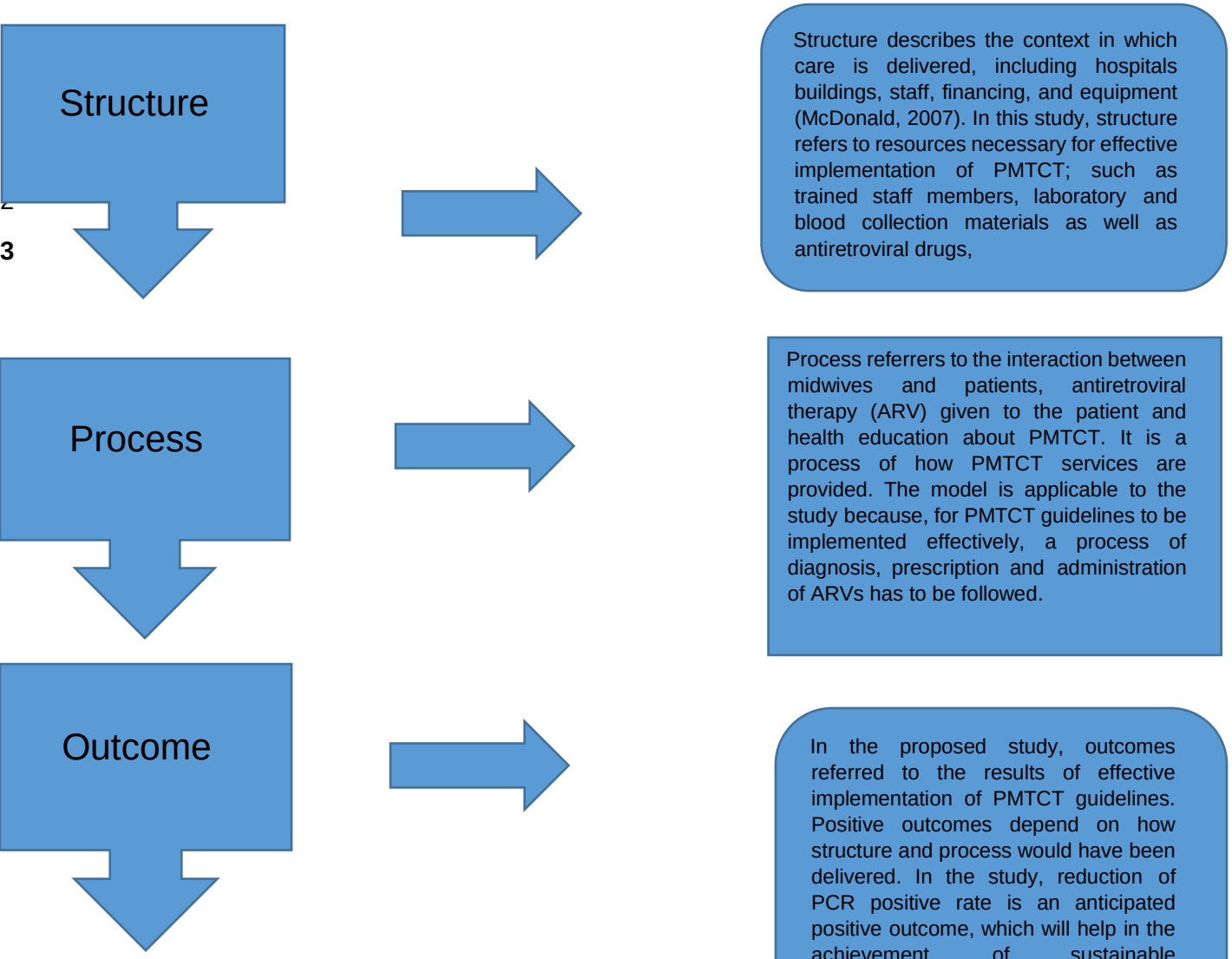

Fig 1.6.1 Donabedian's structure-process-outcome model (SPO)

The researcher utilized the Donabedian model because it provides a framework for examining and evaluating quality healthcare. The model is relevant to the study because the relationship between structure, process and outcome informs the implementation of PMTCT guidelines. The model can evaluate the implementation of PMTCT guidelines, and indicate what is needed in terms of resources, processes to follow regarding diagnosis, prescription and administration of ARVs to achieve the outcomes of the programme.

1.6. DEFINITION OF TERMS

Experiences - The fact or state of having been affected by or gained knowledge through direct observation or participation (Smith, 2014). In this study, experiences are the negative and positive events that nurses face while implementing PMTCT guidelines.

PMTCT Guidelines - These are statements which determine a course of action and aim to streamline particular processes according to a set routine or sound practice (Kingsley, 2016). For this study, PMTCT guidelines refer to those that help midwives in the management of HIV-positive pregnant women and the exposed baby.

Implementation – This is the carrying out, execution, or practice of a plan, method, or any design, idea, model, specification, standard or policy for doing something (Kingsley, 2016). In this study, implementation is when midwives follow and practice what the PMTCT guidelines say.

Midwife - This is a professional who deals with pregnancy, child-birth and the postpartum period (including care of new-borns), in addition to the sexual and reproductive health of women throughout their lives (Smith, 2014). In this study, a midwife is a practitioner who manages HIV positive pregnant women and prevents vertical transmission of the virus during pregnancy, delivery and breastfeeding.

1.7. Summary

Chapter 1 introduced the topic and provided a brief background of the study. The chapter also covered the rationale, problem statement, purpose, objectives and the research question which

guided the study. A theoretical framework articulated the guiding principle of the study and its applicability to the topic. Key terms were also defined. Chapter 2 focuses on the literature review.

CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

Chapter 1 introduced the topic and brief background of the study; it also introduced the rational, problem statement, definition of terms, research questions, purpose and objectives of the study. Chapter 2 focuses on a discussion of the literature reviewed.

Literature review is a systematic and explicit approach to the identification, retrieval and bibliographical management of studies (usually drawn from published sources) for the purpose of locating information on a topic, synthesizing conclusion, identifying areas for future studies and developing guidelines for clinical practice (Brink *et al.,* 2018). A literature review compares existing studies with those of the proposed study, demonstrating the relevance of the proposed study to the existing body of knowledge.

2.2.1 Factors that affect midwives during the implementation of PMTCT guidelines

The principal goal of ART is to attain and maintain viral suppression, which will prevent new HIV infections, decrease morbidity and mortality as well as improve quality of life for patients. All HIV-positive pregnant and breastfeeding women, infants, children, adolescents and adults are eligible for ART regardless of CD4 count or the WHO classification since 01 September 2016. The "Test and Treat All" approach has made it possible for people living with HIV to access ART timeously (National Consolidated Guideline, 2020).

The trend for new childhood HIV infection has been declining worldwide with 150 000 children newly infected with HIV in 2015, a marked difference from 290 000 in 2010. Rates of PMTCT have in the past been reported to be as high as 8-9%, mainly in the under-developed countries. Concerted efforts at reducing mother-to-child transmission (MTCT) have resulted in rates below 1% in resource-rich countries. This, however, has not been realized in many resource-limited countries due to multiple challenges, which include - competing health priorities and limited human and financial resources (Kingsly, 2016).

Implementation of PMTCT guidelines will increase access to ART services, advance ability to control the epidemic and help to achieve the 2030 sustainable development goals (SDG). Around 1.4 million HIV infections among children were prevented between 2010 and 2018 due to the implementation of PMTCT guidelines (National Consolidated Guideline, 2020).

2.2.1.1 Midwives' attitude and socioeconomic factors

A qualitative study conducted by Nuwagaba-Biribonwoha, Mayon-White, Okong and Carpenter (2007) explored the challenges faced by health workers in implementing the PMTCT programme in Uganda, at five PMTCT testing sites. The study aimed at investigating the benefits, challenges and sustainability of the PMTCT programme. The results were that staff members who were implementing the PMTCT programme in hospitals had a positive attitude, which led to changes in obstetric care, to the benefit of the patients. The findings of the study also showed many challenges to the PMTCT programme, which included: patients' non-consent for HIV testing and non- disclosure of HIV status, management of infant feeding, lack of definite infant diagnosis and shortage of staff, space and resources for more effective implementation. NuwagabaBiribonwoha, Mayon-White, Okong and Carpenter (2007) recommended that, due to the many challenges affecting the PMTCT programme, there was a need to strengthen follow-up services for HIV positive women, especially with their choices of infant feeding and family planning.

In addition, Rispel, Peltzer, Phaswana-Mafuya, Metcalf and Trege (2009) who assessed missed opportunities for the prevention of mother-to-child HIV transmission revealed that staff members of the service delivery facilities were found to have high awareness levels of HIV policies, and most had received the relevant training. It was established, however that, even though the staff had received training, they missed many opportunities for the implementation of the PMTCT programme; for example, 43% of pregnant women were tested during their previous pregnancies but not tested during their current pregnancies. The study showed that not all pregnant women were being offered voluntary counselling and testing during their antenatal period; this may have been due to the staff's lack of knowledge and skills to give proper counselling on the prevention of MTCT during and after pregnancy. In the same study, nurses were found to be uncertain about family- planning guidelines for HIV-positive mothers, hence, it was concluded that there were still priority areas that required reinforcement in the health sector including, training in HIV counselling and testing, family planning and feeding practices.

A study conducted by Moses, Zimba, Kamanga, Nkhoma, Maida, Martison, Mofolo, Joaki, Muita, Spensley, Hoffman and Van de Horst (2008), revealed that the implementation of any program requires effective monitoring and evaluation to guide the services provided. Continuously monitoring the various steps of the process, community education, client's education, informed consent, HIV testing, adherence to the regimen, delivery at health centers and early diagnosis of

infected infants were some of the areas which allowed early realization and correction of program weakness.

In Malawi and Zimbabwe, a study by Kalembo and Zgambo (2012) showed that many existing PMTCT programs suffered from high attrition rates and incomplete follow-up due to the fact that many women, especially in rural areas delivered at home rather than at health facilities.

Nguyen, Oosterhoff, Pham, Hardon and Wright (2009), reported on health workers' perceptions of factors that caused their failure to provide good quality PMTCT services, and found the main reason being that the antenatal-care caseload of national and provincial hospitals was too high. Shortage of PMTCT staff was reported as one of the challenges that had a negative impact on implementation and one of the reasons for the loss of clients on the PMTCT programme. The researchers further investigated health workers' views on quality of prevention of mother-to-child transmission and postnatal care for HIV-infected women and their children, and they discovered that factors include the healthcare workers' own fear of HIV infection, lack of knowledge on HIV and counselling skills, high workload and lack of staff.

Cultural influences and poor socioeconomic status are factors that influence the choice of delivery location (Merdekios and Adedimeji, 2011). Understanding the socioeconomic factors that affect the ability of communities to comply with PMTCT program will assist resource-poor countries in devising strategies to achieve follow up on HIV-exposed infants. In a study conducted by Chetty, Butler, Giddy, Crankshaw, Knight and Newell in South Africa (2011) also identified socioeconomic factors, such as poverty, geographical location and lack of paternal support as affecting the capacity of families to comply with follow up programmes. Patients' inability come for follow-ups may be related to hospitals' fees or inavailability of free maternal and child services in the public sector. Similarly, a study conducted in Rwanda by Lim, Kim and Rich (2010) also revealed that the largest obstacle to the PMTCT program was traveling costs to health centers.

2.2.1.2Shortage of staff and poor infrastructure

The PMTCT services was introduced to clinics without any additional staff to clinics that are already understaffed creating more challenges for the provision of PMTCT services. The shortage of staff including highly-skilled trained staff in programmes like nurse-initiated management of antiviral therapy (NIMART) at the primary healthcare level, in the rural areas, prevented majority of women and their children, from receiving high quality HIV care (Lim, KIM and Rich, 2010).

Without adequate healthcare workers at the primary level, the progress to successfully manage HIV-exposed children was unsatisfactory.

Nguyen, Oosterhoff, Pham, Hardon and Wright (2009) concluded that many hospital staff were not able to provide good care or were not unwilling to provide appropriate care for HIV-positive pregnant women, hence, it was suggested that the quality of prevention of mother-to-child transmission service could be enhanced by improving skills of healthcare workers and reducing shortage of staff. In addition, Hanrahan and Williams (2017) revealed that in spite of the success of the PMTCT programme, considerable challenges still prevail such as lack of patient education, poor facility management and staff shortage; these could potentially influence the implementation of the PMTCT guidelines, negatively.

Shortage of staff in clinics was highlighted as one of the contributing barriers that hinder the management of HIV- exposed children. This review found that in some of the clinics, there was only one midwife providing assistance during the ANC to all women who seek these service (Loti and Nolte, 2013)

Peltzer, Mlambo, Matseke, Shikwane, Louw, and Kekana (2011) reported that PMTCT coverage has increased in South Africa, resulting in a 52% decline in new HIV infections, however, rural SA regions continue to report high MTCT rates; this could be due to cultural, infrastructural, and socioeconomic barriers that impact on PMTCT availability and accessibility. One such rural area is

Mpumalanga Province, which has one of the highest antenatal clinics' HIV-prevalence rates and second highest population-based prevalence of HIV in SA. Barriers to PMTCT implementation in Mpumalanga include - illiteracy, mothers' unwillingness to have test conducted on themselves and their infants, lack of proper documentation, poor medical compliance and patient dissatisfaction. Patient-level barriers include poor Nevirapine (NVP) uptake and nondisclosure of HIV sero-status despite intervention (Peltzer et al., 2011).

Rodriguez, LaCabe, Privette, Peltzer, Matseke, Mathebula, Ramlagan, Sifunda, Horigian, and Weiss (2017) conducted a similar study in rural SA, on challenges to PMTCT care and came up with solutions to improve perceptions on PMTCT, patient adherence, staff knowledge, and protocol uptake. These proved valuable insight into locally-appropriate solutions to barriers to PMTCT implementation.

Reducing rates of HIV MTCT has been successful in many areas of SA as PMTCT strategies are widely accepted and have resulted in a 52% decrease in MTCT of HIV between 2001 and 2012 (UNAIDS, 2013). Addressing challenges and gaps limiting PMTCT uptake is crucial to increase coverage of the program in rural, low-resourced areas. To this end, key stakeholders can play valuable roles in the effort to reduce MTCT of HIV and achieve an AIDS-free generation

The study by Rodriguez et al., (2017) further recommended that appropriate response to staff shortages could improve patient outreach, adherence and record keeping, waiting times and clinic attendance. Recruitment of additional staff is imperative, however, it should only be undertaken if frequent, comprehensive training in the PMTCT protocol can be guaranteed. Many of these barriers could be addressed by diverting monetary and physical resources to rural clinics, which may require external sources and internal motivation. For example, increasing clinic spaces can ease patient flow and ensure privacy, reducing anxiety related to disclosure. Additionally, decreasing patient density can reduce exposure to communicable diseases among clinic patients (Rodriguez et al., 2017).

Prevention of mother-to-child transmission is a crucial task in the fight against the HIV/AIDS epidemic. Tremendous efforts by international donors have led to a considerable upscaling of the availability of necessary antiretroviral drugs, however, the results of some studies, such as one in Cameroon suggest that availability of the drugs may not be sufficient to guarantee the flow of competence and equipment to peripheral clinics (Labhardt, Manga, Ndam, Balo, Bischoff, and Stoll, 2009). The authors' experience from a 2-day PMTCT trainings for nurse clinicians indicated that a greater PMTCT competence among nurses can be achieved with relatively limited financial resources. In summary, to provide access to PMTCT for all women in Cameroon, it is important to implement programmes that are adapted to the special needs of peripheral nurse-led clinics. Necessary components to success are appropriate training of nurse clinicians, regular supervision by senior staff and measures that ensure supply of equipment to peripheral clinics (Labhardt, Manga, Ndam, Balo, Bischoff, and Stoll, 2009)

2.2.1.3 Midwives' knowledge

The midwives' knowledge of HIV is important because it is the basis on which positive changes in behaviour occur because it brings awareness, which in turn leads to action. Knowledge, training and experiences in every aspect of one's profession are very important. The midwife has a vital role to play in the achievement of the millennium goal of eliminating of mother-to-child transmission

and combating HIV/AIDS. In order to target safe, rational and effective intervention to reduce mother to child transmission it is necessary to ensure that midwives have knowledge.

Most of the midwives who provide PMTCT are not formally trained in the PMTCT programmes. They usually receive in-service training by doctors, personnel from Anova Health Institute and referring to PMTCT guidelines. This was revealed by a study conducted by Loti and Nolte (2013) about views of midwives regarding the implementation of PMTCT programmes in public centers. The study further revealed that midwives lack sufficient time to implement the PMTCT programme because of the high numbers of clients they need to see per day, there are usually long queues and overcrowding of clients in the waiting areas. The midwives were also concerned about making mistakes and facing the disciplinary committee (SACN); in addition, most of the midwives were not sure about their roles and responsibility in the PMTCT programmes.

Khayelitsha was the first pilot site in South Africa to provide Antiretroviral Therapy and initiate the Nurse Initiated Management of Antiretroviral Therapy (NIMART) at primary health care level in the public sector. The study in Khayelitsha revealed several challenges faced by midwives while implementing the PMTCT guidelines - shortage of NIMART-trained staff to attend to the high number of clients per day, lack of manpower to trace mothers who did not come back after delivery and midwives experiencing burnout as a result of the hectic working environment (Paul, 2016). The author recommended that there is an urgent need for all midwives to be trained in NIMHART. NIMHART should be standardized and be a part of the curriculum that is taught in all tertiary institutions and be updated on a yearly basis as part of the in-service training or education for all practicing midwives. The government should also introduce home visits in the PMTCT programme.

These results contrast those of Tigabu and Dessie (2018) who concluded that the level of knowledge amongst nurses and midwives is high, but the nurses have negative attitude towards HIV-positive women. The study recommended that the Ethiopian government needs to plan and intensify efforts to hold counselling courses and lectures on HIV/AIDS for midwives working in labour ward, and they should be encouraged to change their attitudes to be more positive when attending to HIV/AIDS-positive mothers in order to reduce the discrimination displayed by them against the women.

2.2.2 Experiences of midwives regarding the implementation of PMTCT guidelines

Several enablers for implementation of PMTCT program from user perspective include positive attitudes toward HIV testing from husbands, during pregnancy and ongoing encouragement from health providers to take HIV testing. From provider perspective, the enablers include functional collaboration between health providers, village health cadres and community leaders, positive teamwork among the PMTCT team and the introduction of HIV-AIDS information systems (Giri, Nopiyani, and Merati, 2017).

2.2.2.1 Increased work-load

The maternity guidelines used in South Africa and PMTCT guidelines indicate that a pregnant woman diagnosed with HIV must have blood taken, receive counselling on ART adherence, and be screened for opportunistic infections, such as TB. A study conducted by Maputla, Ramavhoya, Makhado, and Lebese (2020) shows that different records had to be completed for a pregnant woman who tested positive for HIV, which led to an increased workload. The department of health has tried to reduce the workload of midwives by hiring data captures and lay counsellors, however, there is still a need to strengthen the workforce that will focus on HIV only. Work overload results in stress, which leads to poor implementation of the guidelines.

Maputla, Ramavhoya, Makhado, and Lebese (2020) concluded that midwives are implementing the HIV guidelines during pregnancy, however shortage of human resources during the first visit results in a prolonged waiting time. Staff are also expected to complete different records, which takes more time to consult for each patient when there are few midwives. According to the study midwives experience challenges related to prolonged turnaround time for the patients' results and shortage of consulting rooms; these affect clinical decisions on patients' care (Maputla, Ramovhoya, Makhado and Lebese, 2020).

Barriers to the implementation of the PMTCT program include, the low utilization of ANC services at the health centers and long waiting time caused by increased work-load. A low utilization of ANC service from the community health centers is associated with inconvenient opening hours, long waiting time, shortage of staff and delays caused by the demands of the PMTCT guidelines. From the provider perspective, barriers to implement PMTCT program include lack of human resources, lack of supporting facilities, limited operational costs, and HIV-associated stigma and discrimination from the community (Giri, Nopiyani, and Merati, 2017).

2.2.2.2Lack of partner involvement

Male partner involvement is a vital issue to prevent human immunodeficiency virus (HIV) transmission from mother to child because women are more vulnerable and support and encouragement from their partners help a lot. To save mothers and their newborn from acquiring HIV, male partners, therefore should put in their maximum endeavour.

Lack of male partner partner's involvement in PMTCT services is one of the key obstacle to women's access ANC routine and benefits. HIV is a sexually-transmitted disease, hence, when a patient is being treated for HIV, it is important to bring his / her sexual partner in order for the disease to be managed correctly. A study was conducted in Tanzania about male involvement in PMTCT service, the study revealed that barriers to ANC/PMTCT attendance were – lack of information/knowledge, lack of time, neglect, and fear of HIV test result (Theuring, Mbedzi, Luvanda, Harder, Kunz and Harms, 2019)

In addition, Mekiso and Begashaw (2017) reported male partner who are highly educated and have high family monthly income, extensive knowledge and low sociocultural influence toward male partner's involvement in PMTCT services were less supportive than their counterparts. The author's elaborated that lack of awareness and knowledge about PMTCT services, cultural influence, and services-related factors were some of the reasons that hinder higher socioeconomic male partners' involvement in PMTCT.

Research from different countries discovered that male partners, either directly or indirectly, have a tremendous impact on women's uptake of HIV testing in the context of PMTCT programmes. The findings were that women's perception of their husband's approval of their taking an HIV test was the strongest predictor of women's willingness to accept an HIV test (Bajunirwe, 2005).

Opposition from male partners was one of the major factors leading to low HIV counselling and testing uptake, as well as failure to return for HIV test results (Sarker, 2007). In one Ugandan programme, 31% of women refused HIV testing at ANC, 82% of them because they needed the permission of their male partner and 54% due to the fear of the male partner's reaction in case of a positive HIV test result (Sarker, 2007). A comprehensive review of international studies examining individual-level factors influencing pregnant women's HIV testing uptake identified women's fear of negative reactions from their male partners as key in women's reasoning for declining HIV testing (Sarker, 2007). Disclosure of HIV status to male partners is considered important for ensuring that partners are able to access a range of services, including prevention of vertical HIV transmission services and HIV treatment and care. A World Health Organization

(WHO) study revealed that between 16-86% of women in developing countries choose not to disclose their HIV status to their male partners (WHO, 2018).

In an evaluation of studies conducted by WHO that looked at violence as an outcome of HIV status disclosure by women who chose to disclose, the highest rates of disclosure-related violence were reported among women in ANC (WHO, 2018). Fear of the negative consequences of disclosure (violence, abandonment or loss of economic support) are major barriers to uptake of HIV-testing in women, especially, pregnant women (Sarker, 2007). In 2006, WHO strongly recommended that tailored strategies for different contexts should be implemented in order to reduce the barriers that women meet during HIV counselling and testing and to protect them from violent reactions due to HIV disclosure (WHO, 2018).

A substantial number of studies suggest that gender- specific barriers impede women's ability to adhere to services for PMTCT and HIV treatment and care. Women may need permission from their male partners to travel to access services, and for safe delivery. Implementation of safe delivery practices is part of the prevention of the perinatal HIV transmission, however, only 62% of deliveries in developing countries are assisted by skilled birth attendants (WHO, 2018). Some women might not have the autonomy in their households to decide where they give birth. A recent study from rural Uganda involving more than 10,000 women reported that the male partner's decision influenced not only the possibility for women to participate in the PMTCT programmes but also to deliver at a health facility (Mbonye, 2010).

Male partner support is also a key factor in supporting safe infant feeding. The choice of an infant feeding option can be the basis of discrimination. In many societies not breastfeeding implies that a woman has a HIV-positive status. In many contexts replacement milk is not affordable to mothers without the financial support of their male partner. The discrimination that can result from straying from social norms and the cost of infant feeding can lead to a significant gap between women's intentions to protect their children from HIV and the feasibility of a feeding method. Choosing and adhering to an infant feeding method can be difficult for women without their male partners' support (Mbonye, 2010).

2.2.2.3 Lack of training

PMTCT training is essential for midwives to implement PMTCT guidelines, without training it becomes very difficult. Given the challenge of doctors providing treatment to a large number of people living with HIV, South Africa has adopted a decentralised approach, allowing other health professionals to prescribe treatment. The Nurse Initiated and Managed Anti-Retroviral Therapy

(NIMART) training programme was established as a task-shifting strategy, following the conclusion of the Streamlining Tasks and Roles to Expand Treatment and Care for HIV (STRETCH) study in South Africa in 2010 (Maphumulo and Bhengu, 2019).

STRETCH's role was to train nurses to not only test for HIV, but to prescribe ART support to pregnant women living with HIV. It was regarded as successful by both experts and FHCWs but staff described several challenges in the roll-out of this programme. The shortage of NIMART-trained nurses and midwives was thought to result in high workload for those trained and was linked to long waiting hours in the queues and poor-quality services (Goswami, 2011).

While the integration of PMTCT into PHC has been hailed as a success, Goswami (2011) identified ongoing challenges in the integration process for HIV/PMTCT from both the perspectives of experts and FHCWs. Existing issues in bureaucracy and accountability presented barriers to full integration of PMTCT. For FHCWs, concerns of heavy workload, infrastructure constraints, and ongoing issues with training and high staff-turnover created challenges in the care of both mother and child. South Africa has prioritized EMTCT, believing that addressing such

challenges in the integration of PMTCT into PHC will enable South Africa to achieve quality caregiving (Mutabazi, Gray, Muhwava, Trottier, Ware, Norris, Murphy, Levitt, and Zarowsky, 2020)

Previous studies on the level of knowledge and practices of PMTCT amongst nurses have highlighted knowledge deficit in various aspects of the PMTCT. A rapid assessment of infant feeding policies and programmes in four African countries (Botswana, Kenya, Malawi and Uganda) saw PMTCT establishments' high knowledge deficit among nurses on risk of transmission with respect to breast feeding and infant feeding options (Chopra and Rollins, 2017).

This is in agreement with what was reported at Khayelitsha - the first pilot site in South Africa to provide Antiretroviral Therapy and initiate the Nurse Initiated Management of Antiretroviral Therapy (NIMART) at primary health care level in the public PHC. The findings revealed several challenges faced by midwives while implementing the PMTCT guidelines, such as - shortage of NIMART-trained staff to attend to high number of clients per day, lack of manpower to trace mothers who did not come back after delivery and midwives experiencing burnout as a result of hectic working environment (Paul, 2016).

Similar study findings show that although nurses and midwives clearly had the authority to provide NIMART services, they did not necessarily feel that they were well prepared and supported to do so. Deficits in supportive supervision and clinical training were viewed as substantial challenges

to effective provision of NIMART for the prevention of mother-to-child transmission and paediatric HIV services. Particularly, with respect to paediatric HIV services, health facilities have opportunities to advance NIMART practice through strengthening these aspects of in-service support (Mackay, Gross, Hepbuen and Spangler, 2020).

2.2.2.4 Lack of resources

In resource-poor setting, shortage of PMTCT staff, interruptions in treatment and supplies of medical equipment, as well as lack of counselling services, all act as barriers to PMTCT services. These factors often mean long waiting times for post-test counselling and many leave without getting their HIV test results.

Effective interventions for prevention of mother-to-child transmission (PMTCT) were discovered in the late 1990s, yet mother-to-child transmission (MTCT) remains the most significant route of HIV infection among children. With the effectiveness of PMTCT interventions well established, in only a few countries, there is an urgent need to scale-up PMTCT programs, particularly in resource-limited settings. MTCT transmission rates in the United States and Europe are below 2% due to wide coverage and provision of highly effective ART regimen. In contrast to the developed world, only 45% of HIV-positive women in low and middle-income countries receive antiretroviral (ARV) prophylaxis for PMTCT in 2008 (Bajunirwe et al., 2016).

A study on the provision of reproductive health services including PMTCT services in primary health care setting in Tshwane, South Africa found patient overcrowding and long waiting times all hampered people' s access to PMTCT services (Maphumulo and Bhengu, 2019)

Kalembo and Zgambo (2012) in their study identified - shortage of PMTCT staff, interrupted supplies of materials, shortage of space for counselling - as some of the reasons leading to loss of clients in PMTCT; poor monitoring of PMTCT services by health workers was one of the reason for poor follow-ups in PMTCT.

PMTCT is a complex intervention with many involved actors and policies, flow of knowledge, materials, technologies and funds; all of these interact at global, national and local levels. Beyond the operational challenges of actually delivering the services on the ground, the complexity and the history of HIV control programs, globally, raise systemic and political issues related to the involvement of external funders, experts and manufacturers – sometimes called the global AIDS

industry - in funding and implementing HIV services in low and middle-income countries (WHO,2018).

PMTCT programs, especially those which aim to be integrated and help to strengthen health services and systems, seek to address three health goals, each of which is itself a major effort involving different actors, structures and health strategies. These three goals are: combatting HIV/AIDS, reducing child mortality and improving maternal health (Mutabazi, 2017). Health services in many countries are organised, funded and managed to deal with distinct diseases and populations but are seen as parts of an overall health system, these multiple interfaces raise questions of whether PMTCT programs have an overall weakening or strengthening impact on national health systems, or no impact at all beyond PMTCT services.

Rwanda's success in scaling up paediatric HIV services through effective utilisation of health resources may offer lessons for other developing countries with high prevalence of maternal and paediatric HIV. This successful integration of PMTCT in Rwanda may be attributed to its health systems' organisation, despite some weakness of the system (Peltzer et al., 2011). Even so, in contrast to these reported good PMTCT outcomes in countries with a history of stagnating health systems like Rwanda (and most other SSA countries), there is little evidence-informed meaningful discussion about possible PMTCT effects on other maternal and child health services and on overall health systems.

Lack of material resources, including medications, medical supplies, and equipment, were key barriers to implementation, particularly in rural and remote settings. Human resource shortages, involving both health care providers and skilled supervisors, were also identified as a key barrier to implementation of most projects. Resource shortages is characterized as both actual and relative, with inappropriate distribution of available resources compounding true shortages, especially in rural and remote areas. Sub-optimal integration and collaboration within individual health care facilities led to a scarcity of resources in some departments, although the necessary materials were available on site in other departments. Another commonly-identified system-level barrier was the limited ability or resources to collect high-quality data to monitor current clinical practice and evidence (Mutabazi et al., 2017).

2.2.2.5 HIV stigma, discrimination and PMTCT

A body of research has highlighted how HIV-related stigma and discrimination can affect a pregnant woman's decision to enroll on PMTCT programmes and interrupt adherence to treatment

and retention in care. It has been estimated that over 50% of vertical HIV transmission globally can be attributed to the cumulative effect of stigma (UNAIDS, 2018).

A systematic review of studies on PMTCT in Cameroon, Ethiopia, Kenya, Lesotho, Malawi, Rwanda, South Africa, Tanzania, Uganda and Zambia found HIV-related stigma impeded access to ARVs for mothers living with HIV (Maphumolo and Bhengu, 2019).

Similarly, research from Johannesburg South Africa found that while the effect of stigma on retention of women at any given stage can be relatively small, the cumulative effect can be large (Goswami, 2011). At the individual level, psychological difficulties following an HIV diagnosis were common among mothers and hindered ARV uptake. These included shock, denial of disease, and depression.

Family and community-level barriers most frequently identified in the review were HIV-related stigma and fear of telling partners and family members. These factors deterred women from attending PMTCT services.

Accelerating progress towards elimination of MTCT and retaining women on lifelong treatment post-partum will require not only continued expansion of the supply of PMTCT and antiretroviral (ARV) treatment programs, but also an analysis of and response to demand-side barriers to access and adherence, including stigma. In addition, as countries make progress towards addressing supply-side issues and strengthening health delivery systems, the relative role of structural factors, like stigma, will become more salient. Prudden, Hamilton, Adams, Stockton, Blackand and Nyblade, 2017 demonstrated that the relative role of stigma on MTCT is greater in higher than in low-functioning PMTCT programs. As countries attempt to approach the total elimination of MTCT, addressing stigma could be the key to making the final push to achieving this (Prudden, Hamilton, Adams, Stockton, Blackand and Nyblade, 2017).

Stigma and discrimination within health services, families and the wider community have been documented as significant demand-side social barriers to PMTCT. HIV-related stigma is a social process of devaluation of people either living with or associated with HIV that culminates in discrimination. Discrimination (sometimes referred to as “enacted stigma”) is the unfair and unjust treatment of an individual based on his or her real or perceived HIV status. Stigma is a barrier to PMTCT as it can keep women from seeking HIV testing, linking to and remaining in care or adhering to treatment. Stigma can manifest in many forms, from physical or social exclusion to verbal or physical abuse and can occur across all spheres of a woman’s life, from within the family,

to the health center. Both the experience and the anticipation (fear of) stigma act as barriers to testing, linkage to care and adherence (Prudden et al., 2017).

Current law and policy in many countries directly contribute to and/or exacerbate pre-existing stigma and discrimination associated with at-risk groups. Pre-existing stigma not only predisposes these vulnerable individuals to greater stigma and discrimination, but also critically reinforces stereotyping and status loss of all afflicted with HIV/AIDS, regardless of how they may have acquired the infection. Funders and civil society should support advocacy groups that promote the non-repeal of laws and policies that criminalize consensual homosexual activity, prohibit syringe possession and needle exchange, facilitate violent policing of CSWs, and require proof of residency status to access services (Mahajan, Sayles, Patel, Remien, Ortiz, Szekeres and Coates, 2008).

On the other hand, where protective legislation on HIV/AIDS discrimination is in place, support for enforcement and targeted information campaigns for stakeholders about rights afforded by such legislation should be provided. The work of the Lawyer's Collective HIV/AIDS Unit, an Indian non-governmental organization engaged in a variety of legal and policy activities to secure and protect the rights of PLHA as well as groups vulnerable to HIV infection, is a good example of the kind of sustained advocacy needed at the structural level, while stigmatizing attitudes and norms about HIV/AIDS at the individual level are addressed (Goswami, 2011)

2.2.2.6 Monitoring and evaluation of PMTCT guidelines

Orem, Bataringaya and Criel (2012) conducted a study to prove if guidelines influence the implementation of health programs. The study concluded that guidelines' effectiveness is compromised by their development. To ensure the production of high-quality guidelines efforts must be employed at the country and reginal levels. The regional level can facilitate pooling resources and expertise in knowledge generation, methodology development, guideline repositories and capacity building. The authors recommended that there is a need to develop and adopt a standard guide for developing guidelines in the health sector. The process must be consultative and the guidelines must be disseminated, enforced, and accompanied by the required capacity building and inputs for implementation. Introduction of new guidelines, withdrawal of old ones and criteria for revision must be in place. The option of strengthening civil society to harness the contributions of communities and beneficiaries in guideline development should be explored.

This supports a study about identification of gaps in the HIV prevention, care and treatment cascade. The study revealed nine emerging themes that comprise the gaps - referral mechanism indicating several loop holes, low levels of integration of HIV/TB services, low uptake of services for PMTCT services by pregnant women, low coverage of services for most at-risk population, poor HIV coordination structures in the districts, poor continuity in the delivery of paediatric HIV/AIDS services, limited community support for orphans and vulnerable, inadequate homebased care services and HIV services and support for discordant couples. The themes indicate there are plenty of gaps that need to be covered and have been ignored by current programs (Bajunirwe, Tumwebaze and Mugyeyi, 2016).

The study identified several gaps and suggested intervention that should be tested before large scale implementation. The implementation of these programs should be adequately evaluated in order to provide field evidence of effectiveness and replicability in similar areas.

Integrating PMTCT programmes into routine health services under complex socio-political and health system conditions is a priority and a challenge. In South Africa, PMTCT is now integrated into existing primary health care services and this experience could serve as a relevant example for integrating other programmes into comprehensive primary care. Gray and Zarowsky (2020) explored the perspectives of both expects or key informants and frontline health workers (FHCW) in South Africa on PMTCT integration into PHC in the context of post-AIDS denialism, using a complex adaptive systems framework. The study revealed high work load, staff turnover and infrastructural issues as the main challenge to integration; the study suggest opportunities to address operational challenges towards more integrated PMTCT with other health services in order to improve maternal and child health.

2.2.3 PMTCT COVERAGE

A study was conducted in KwaZulu Natal by Horwood, Haskins, Vermaak, Phakathi, Subbaye and Doherty (2010) to evaluate PMTCT implementation and the integration of PMTCT with routine maternal and child-health services. The study identified a high coverage of PMTCT interventions during pregnancy and delivery, however, the postnatal follow-up of HIV-positive mothers and their infants was found to be poor. It was, therefore, suggested that the link between the care of HIV-positive mothers during pregnancy and delivery, and the follow-up care for babies and mothers needed to be strengthened, to avoid a reduction in PMTCT services' provision.

Elaine, Abrams, Myer, Rosenfield, Wafaa and ElSadr (2007) in America, also suggested that close ties are feasible between PMTCT services, HIV care, treatment programmes and postnatal follow-

up. This could lead to significant advances in reducing the vertical transmission of HIV, thus, promoting the health of HIV-infected women, children and families.

Similarly, Sherman, Jones, Coovadia, Urban and Bolton (2009) conducted a study in Johannesburg to assess the efficacy of the PMTCT programme in a routine service setting, as opposed to a research environment. It was understood that a low HIV transmission rate confirmed the efficacy of this routine PMTCT service programme. The study found out that, routine PMTCT service programme was highly effective in reducing the MTCT rate of HIV, but failed in the follow-up of children. It further stated that this failure could be attributed, predominantly, to the hospital's lack of capacity to implement the national programme guidelines for the follow-up of perinatal exposed children. It was concluded that HIV-infected children were not being identified for medical management, as part of the PMTCT follow-up, highlighting the importance of improving record keeping, which would facilitate on-going monitoring.

During the postnatal period, HIV transmission from mother to child occurs mostly during mix feeding by HIV-positive mothers. Breastfed children born to HIV-positive mothers are at substantial risk of late postnatal HIV transmission. Early cessation of breastfeeding at six months of age should be monitored to reduce postnatal transmission of HIV, however, evaluations done by Goga, Dinh and Jackson (2012) in South Africa, showed that only 20% of HIV-positive mothers were exclusively breastfeeding, 62% were formula feeding, while the remaining 18% practiced mix feeding.

Another study was conducted in South Africa (Goga et al., 2012), to investigate infant feeding practices among HIV-positive and negative mothers from zero to nine months postpartum. The study findings showed poor feeding practices among HIV-positive and negative mothers, however, HIV-positive mothers undertook safer infant-feeding practices, most probably due to the counselling provided through the routine PMTCT programme. The findings suggested that messages relating to infants needed to be clear and should be integrated within all routine child services, where HIV-positive women needed to be seen as a group with special needs. It further stated that infant-feeding interventions should include negative mothers, who constitute the majority of the world's mothers and who be neglected, if efforts excessively prioritized HIV-positive women.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discuss the methodology that was used to conduct this study. It focuses on the research design, setting, population, sample, data collection tool, data analysis, trustworthiness and ethical consideration.

3.2 METHODOLOGY

Methodology is the procedure for scientific investigations (Babbie and Mounton, 2007). A qualitative research method was used in the study to explore and describe the midwives' experiences regarding implementation of PMTCT guidelines in the Mopani District Limpopo. A qualitative approach is a method of observation and gathering non-numerical data (Brink et al., 2018).

3.3 STUDY DESIGN

A research design is defined as a set of guidelines and instructions to be followed in addressing a research problem. A research design enables a researcher to anticipate what appropriate research decisions should be to maximize the validity of the eventual results (Babbie and Mounton, 2007).

The study used exploratory and descriptive design method. The researcher used explorative design to provide insights and understanding of the study. Pilot and Becker (2017) explained that a descriptive design describes functions and characteristics of something. The researcher made use of this design because it increases and improves a researcher's understanding and knowledge of a chosen research topic.

3.4 STUDY SETTING

The Mopani District consists of five sub-districts, namely Greater Tzaneen (35 PHCF), Greater Giyani (28 PHCF), Moruleng (10 PHCF), Greater Letaba (21 PHCF) and Ba-Phalaborwa (10 PHCF). The researcher conducted the study in Mopani District because this is where the problem was identified. Giyani is a city in the north-eastern part of the Limpopo Province of South Africa and is situated in the intersection of regional roads R578 and R81. It is in the heart of Limpopo Bushveld on the northern bank of Letaba River and west of the Kruger National Park.

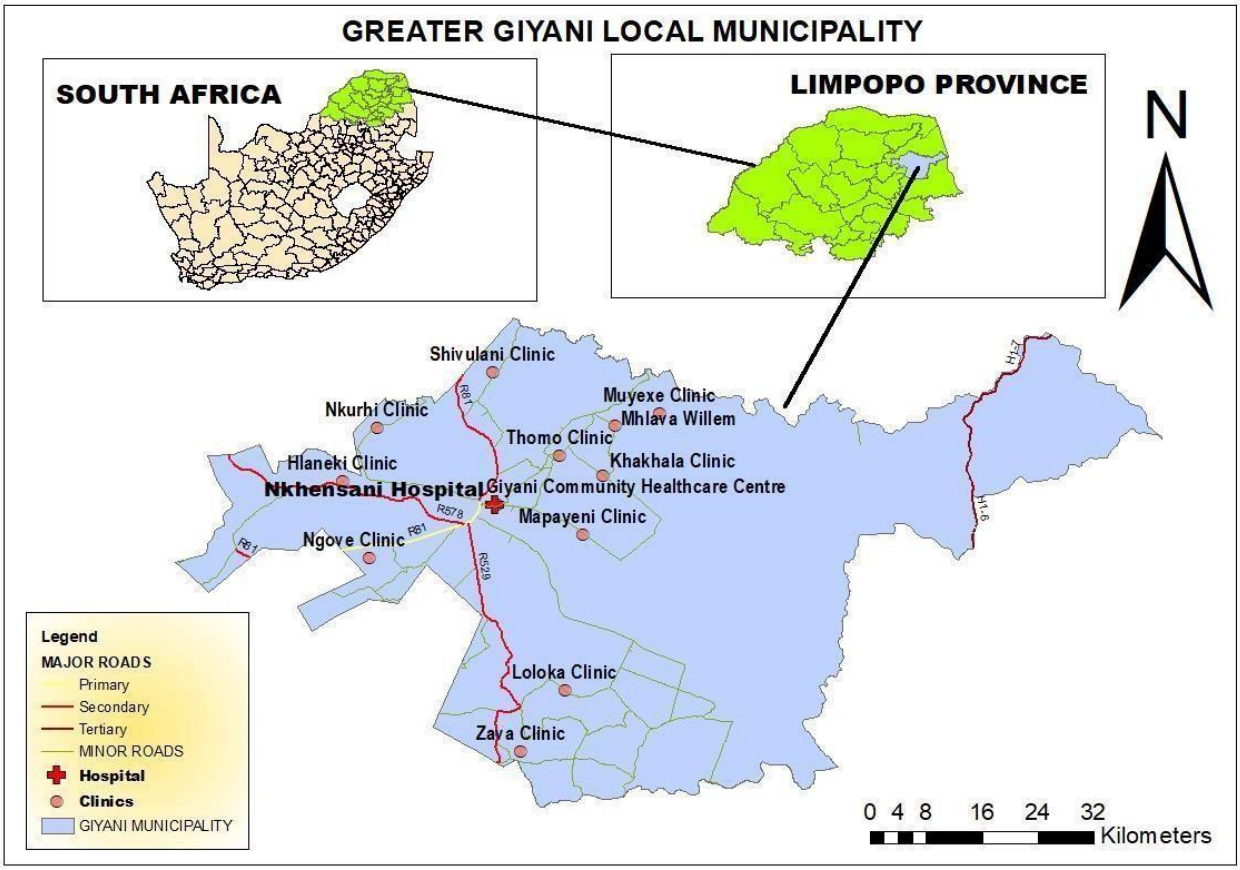

Figure 3.1 Map of Mopani District and selected PHCs

3.5 POPULATION AND SAMPLING

3.5.1 Population

A population is complete set of persons or objects that possess some common characteristics that are of interest to the researcher (Brink et al., 2018). The population of the study was all midwives working at primary health care facilities of Greater Giyani sub-District.

3.5.2 Sample and Sampling

Sampling is a process of selecting participants from a population of interest (Brink et al., 2018). In a qualitative study, sampling occurs subsequent to establishing the circumstances of the study clearly. The overall purpose of using relevant sampling techniques is to collect the richest data. Rich data means a diverse range of information collected over a relatively prolonged period of time (Brink et al., 2018).

Sampling of the health care facilities

The researcher adopted the non-probability purposive sampling approach to sample the study setting. According to Polit and Beck (2017), a non-probability purposive sampling is based on the

belief that the researcher's knowledge about the population can be used to hand-pick the population. The researcher purposively sampled Greater Giyani sub-district because it recorded 186 deliveries of HIV-exposed and 3 PCR-positive babies in 2018/19 financial year (Provincial Health Annual Performance Plan (2018/19, 11).

The Greater Giyani sub-district consists of 26 clinics and 2 health centers. To select a population to a manageable number, the researcher employed purposive sampling which is a subtype of nonprobability sampling to select 10 clinics and 1 health center with the highest delivery rate. The new millennium goals indicate that no child should be born HIV positive, three birth PCR positive is a lot. Three of the facilities that were sampled had a case of birth of PCR-positive baby

Sampling of the participants

A non-probability, purposive sampling involves seeking out individuals who meet certain criteria (Polit and Beck, 2017). According to Bernard (2013), 10-20 knowledgeable people are enough to uncover and understand the core categories in any well-defined cultural domain or study of lived experience, in a qualitative study. The researcher made use of a non-probability, purposive sampling method to select midwives who met the inclusion criteria of at least 2 years' experience in implementing PMTCT guidelines. Three midwives were selected from each of the ten (10) selected clinics, and five were selected from one (1) selected community health care centre.

Sampling size

In a qualitative research, the determination of sample size is contextual and partially dependent upon the scientific paradigm under which investigation is taking place (Brink et al., 2018). The computed sample size was 35 midwives, however, since this is a qualitative study, data saturation was reached after having interviewed seventeen (17) participants.

3.6 DATA COLLECTION INSTRUMENT

The researcher made use of a semi-structured interview guide, to explore the experiences of midwives regarding the implementation of PMTCT guidelines in the Mopani District of Limpopo Province. A semi-structured interview guide is useful for obtaining detailed information about personal feelings, perceptions and opinions; it allows for detailed questions to be asked and it usually achieves a high response rate (Creswell, 2017).

3.7 PRE –TEST

The semi-structured interview guide was pre-tested to increase its content and test validity and to determine whether all questions were clear. The researcher selected six (6) midwives who met the criteria from three of the non-selected primary health care facilities and interviews was conducted with them to test the semi-structured interview guide. The findings of the pre-test helped to reduce measurement error, reduced respondent burden, determined whether or not respondents were interpreting questions correctly and ensured that the order of questions were not influencing the way a respondent answered.

3.8 DATA COLLECTION

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions and evaluate outcomes (Creswell, 2017). The data collection method used was in-depth face-to-face interviews. The researcher used a semi-structured interview guide. Appointments were secured with the participants and data was collected during times convenient for participants.

Data was collected during lunch breaks to avoid interruption of services and it took place inside a room without patients to ensure privacy. The researcher explained the study to the potential participants, obtained informed consent and maintained ethical standards. To prevent the spread of Covid-19 the researcher with one participant at a time, were in a side room. The door, chair, table and voice-recorder were disinfected after every participant. The distance between the researcher and the participant was 1, 5 meters and we were wearing masks.

The sessions took approximately 45-60 minutes. English was used as a medium of communication with the participants. The researcher explained the purpose of the study, ethical aspects and the right to withdraw from the study. Permission to use a voice recorder was obtained from each participant and data was collected until a saturation point was reached. The data was later transcribed.

3.9 DATA MANAGEMENT AND ANALYSIS

Data management is the way to organize and store data that the research study has accumulated in the most efficient way possible (Polit and Beck, 2017). It concerns the organisation of data from its entry to the research cycle through to the dissemination and archiving of valuable results (Brink et al., 2018). Following data collection, the information from the voice recorder was transcribed verbatim by the researcher. The data collected was stored on a flash drive and backup drive to avoid losing information. Consent forms signed by participants were saved on the file stored in a briefcase.

Data analysis is a method for exploring and organizing raw data, as well as analyzing, interpreting giving it meaning (Polit and Beck, 2017). Data was analyzed using interpretive phenomenological analysis (IPA). An IPA gives researchers the best opportunity to understand the innermost deliberation of lived experiences of study participants. It allowed the interviewees to express themselves and their lived experiences the way they see fit without any distortion or force (Smith, 1997). IPA was employed in this study because of its qualitative ability, as it is best able to offer insights into how a given person in a given context make sense of a given phenomenon.

The researcher applied the following IPA steps during data analysis

Stage one: reading and re- reading

The researcher immersed herself in the data, read each transcript multiple times in order to become familiar with the content.

Stage two: initial noting

The researcher's observations were recorded and noted in the margin of the transcripts.

Stage three: developing themes

The researcher grouped similar data into themes.

Stage four: searching for connections across themes

The researcher clustered the chunks of data and notes together and considered how they were related

Stage five: moving to the next case

The themes derived from the previous case were bracketed as the new case was considered with fresh out and again becoming immersed in the case

Stage six: seeking patterns across cases

The researcher searched for any themes/quality identifiable across cases, then highlighted taking note of any idiosyncratic differences.

Stage seven: interpretation to deeper level

Reviewing the themes across the data-sets and by using metaphors and temporal referents, the researcher further analysed the meaning of the experiences. The themes were grouped into a table.

3.10 TRUSTWORTHINESS

Trustworthiness is examined as a way of ensuring data quality or rigor in a qualitative research (Polit and Beck, 2017). Based on the model of Lincon and Guba (1985), the model proposes four criteria for developing trustworthiness, which are: credibility, dependability, conformability and transferability.

3.10.1 Credibility

Credibility alludes to confidence in the truth of the data and the interpretation thereof (Brink et al., 2018). Credibility was established using the following techniques:

Prolonged engagement

Prolonged engagement refers to spending extended time with respondents in their native culture and everyday world in order to gain better understanding of their behaviors, values, and social relationships in a social context (Pilot and Becker 2017). Pro-longed engagement was made with the participants by conducting extensive interviews with the participants. The researcher stayed in the field during data collection, until data saturation was reached. This helped the researcher to gain an in-depth understanding of experiences of midwives regarding provision of care to HIV-positive women.

Peer debriefing

This is the process where a researcher calls upon an objective peer who is not involved in the research project to aid in probing the researcher's thinking around all parts of the research process (Pilot and Becker, 2017). This was ensured by seeking opinions of peers outside the study also excluding the supervisor.

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3.10.2 Dependability

Dependability refers to the provision of evidence such that if it were to be repeated with the same participants in the same context, its findings would be similar (Brink et al., 2018). The researcher ensured that when conducting face-to face-interviews, the same interview guide was utilised for all the interviews.

3.10.3 Conformability

Conformability refers to the potential for congruency of data in terms of accuracy, relevance or meaning (Brink et al., 2018). The researcher made sure that the data collected reflected the voices of the participants and not the researcher's biases or perceptions. The researcher submitted field notes, voice-recordings and transcripts to a co-coder to check for congruence.

3.10.4 Transferability

Transferability refers to the ability to apply the findings in other contexts, or to other participants (Brink et al., 2018). Transferability was ensured by a thick descriptions of research methodology.

3.11 ETHICAL CONSIDERATIONS

Ethical considerations are norms or standards for conduct that distinguish between right and wrong procedures (Polit and Beck, 2017). For the researcher to maintain ethics, five principles of ethical consideration were followed:

3.11.1 Ethical clearance

The study was submitted to the University of Venda Research Ethics Committee and ethical clearance was obtained (Annexure A: Ethical clearance NO: SHS/21/PDC/01/0604). The researcher also obtained permission to conduct the study from Limpopo Provincial Department of Health, Mopani District, Greater Giyani sub-district and operational managers of PHC facilities.

3.11.2 Respect for persons

This principle incorporates two elements that deal with respecting participants during research. The first element is to be autonomous, which means that a person can make his or her own decisions regarding participation in the study (Brink et al., 2018). The researcher informed the participants that they are not forced to participate and that they can withdraw whenever they want to.

3.11.3 Beneficence

This principle means action that is done for the benefit of others (Brink et al., 2018). The researcher structured the questions carefully and monitored participants for signs of distress. If distress did occur, the researcher would have facilitated debriefing by giving participants the opportunity to ask questions or referred them to appropriate healthcare worker for debriefing.

3.11.4 Justice

This principle refers to a participant's right to fair treatment (Brink et al., 2018). The researcher ensured this principle by using correct interviewing procedures. The researcher obtained consent from participants before using a recording device and data collected from participants would remain anonymous and confidential.

3.11.5 Informed consent and information

In adherence to the ethical principle of voluntary participation and protecting participants from harm, the researcher gave participants all the information about the study, how data would be collected, the use of voice recorder and how anonymity and confidentiality would be maintained (Polit and Beck, 2017). The researcher informed participants that they had a choice whether they want to participate in the study or not and how the results would be presented before participants signed a written informed consent. The participants were informed that participation is voluntary, and they can withdraw from the study anytime with no penalty.

3.11.6 Autonomy

This principle require that the participant have autonomy of thought, intention and action when making decisions regarding the study (Pilot and Beck 2017). Before the participants made decisions, the researcher fully explain the context of the study and inform them that there are no financial benefits for participating in the study.

3.11.7 Non-maleficence

This principle requires that the study does not harm the participants or others in society (Brink et al., 2018). The researcher conducted the study on the experiences of midwives which only required interviews, therefore, there is no anticipation of harm to the health of the participants.

3.11.8 Confidentiality and Anonymity

Anonymity means that no one, including the researcher should be able to identify any subjects afterwards (Pilot and Beck, 2017). The participants' identities were replaced with numbers and the research notes will be destroyed after five years following the publication of the results.

3.12 DELIMITATION AND LIMITATION OF STUDY 3.12.1 In this study, the researcher only focused on the midwives' experiences regarding the implementation of PMTCT guidelines.

3.13 PLAN FOR DISSEMINATION AND IMPLEMENTATION OF RESULTS

The collected data would be reported in the form of a dissertation that will be available on the internet and as a hard copy in the library of the University of Venda. Results will also be published in a selected journal for the benefit of members of the public.

CHAPTER 4

PRESENTATION AND DISCUSSION OF STUDY FINDINGS

4.1 INTRODUCTION

Chapter 3 focused on the methodological process applied in conducting the study; this chapter will present the findings of the study and discussions thereof. A qualitative research approach which is exploratory and descriptive was used in this study with the aim of determining the midwives' experiences regarding the implementation of prevention of mother to child transmission (PMTCT) guideline in Mopani District of Limpopo Province, South Africa. The objective of the study, therefore was to identify factors that affect midwives during the implementation of PMTCT guidelines in the Mopani District of Limpopo Province.

4.2 Demography of the participants

Table 4.1 shows the demographic data of the 17 midwives who participated in the study. Out of 17 participants, 18% were males and 82% were female since nursing is a career dominated by females. In terms of number of experience in years ,47% had 7-11 years' experience, 24% had between 12-16 years, 18% had between 2-6 years and 11% had between 21-25 years in implementing PMTCT guidelines.

Table 4.2.1 demographic data of participants of the study

Characteristics	Number	Percentage %
1. Age (years)		
21-30	04	24%
31-40	08	47%
41-50	03	18%
51 and above	02	11%
2. Gender		
Females	14	94%
Males	03	18%
3. Occupation		
Midwives	16	94%

Operational managers	01	6%
4. experience (years)		
2-6	03	18%
7-11	08	47%
12-16	04	24%
17-21	02	11%
21 and above	00	
N = 17		

Table 4.3 Themes and sub-themes

Themes	Sub-themes
1. Progress on implementation of PMTCT guidelines by midwives	**1.1** Improvements in implementation of PMTCT guidelines. **1.2** Reduction in vertical transmission related to decrease in positive PCR results **1.3** Improved midwives' attitude towards HIV-positive patients. **1.4** Introduction of mentor mothers to help with ongoing counselling. **1.5** Availability of PMTCT guidelines in the Facility.
2. Employer-related challenges regarding implementation of PMTCT guidelines	2.1. Lack of training and refresher courses 2.2. Increased workload caused by demands of guideline and shortage of staff 2.3. Lack of infrastructure 2.4. Delayed patients' results caused by the laboratories increased workload
3. Patient-related challenges regarding implementation of PMTCT guidelines	3.1. Non-compliance to PMTCT guidelines by patients 3.2. Free movements of patients without proper documentation 3.3. Failure to visit health facilities regularly due to poverty 3.4. Un-booked cases coming for delivery 3.5. Cultural norms regarding exclusive breastfeeding

	3.6. Lack of partner involvement during ANC management
4. Poor quality care-provision by midwives	4.1. Quality of counselling provided by midwives 4.2. Lack of proper documentation
	4.3. Poor midwifery management during puerperal stage 4.4. Quality of health education given to patients

4.3 Theme 1 Progress on implementation of PMTCT guidelines

Participants reported that progress has been made in the prevention of new HIV infections among women of reproductive age, an important aspect of PMTCT. This progress come as a result of improved implementation of PMTCT guidelines. Participant displayed a positive attitude in implementation of the guidelines and displayed pride in what they have overcome in implementing PMTCT. According to the participants, it is easy to implement PMTCT guidelines now that most patients are aware of their status and having adequate knowledge about HIV.

4.3.1Sub-theme1.1 Improvement in implementation of PMTCT guidelines

The findings revealed that implementation of PMTCT has improved over the years; participants reported that implementation is now easy because many patients are educated about HIV/AIDS, are aware of their status and now understand the importance of compliance with treatments. This is supported by the following quotes:

Participant 11 from PHC C said:

"In general I think now it is better because most of patients now know their status unlike before when a woman would come for ANC just to find that she is HIV positive. And take time to come to understand the status and accept it, while the virus and pregnancy are progressing" Participant 10 from PHC C confirmed:

"These days it is better because they come to book knowing their status, and it's easy to implement because the patient had accepted the status and is taking treatment. So that helps with adherence to guideline and reduce the rate of PCR-positive because these days these are rare unlike in the

old days. You can finish the whole year without having a PCR-positive, ever since I started working here we have never had a PCR positive, and that is evidence that we are improving"

Salam, Haroon, Ahmed and Bhutta (2014) reported that increased HIV awareness and risk reduction are effective in improving knowledge, attitudes and practice outcomes; this is evidenced by the increased knowledge scores for HIV/AIDS. There is, however, very limited evidence on community-based management for HIV-infected population and prevention of mother-to-child transmission (MTCT) for HIV-infected pregnant women. The authors elaborated that establishment of community support at the onset of HIV prevention programmes has led to community acceptance and engagement.

Another reason for improvement in implementation of PMTCT guidelines is availability of resources, such as drugs and laboratory services.

Midwives no longer have challenges with resources which makes it easy to implement the guidelines having all the resources they need. Lack of resources had been an obstacle in the implementation of PMTCT, availability of resources like ARVs, laboratory equipment and stationery has played a big role in the improvements of implementation of PMTCT. Zimba, Sherwood, Mark and Leeman (2021) described factors influencing implementation of support strategies and how these impacted health center staff capacity to implement Option B+ in Malawi; some of these factors were, availability of materials such as drugs in designing effective implementation support for low-resource settings.

Participant 6 from PHC C reported:

"Don't think we have any challenges, like I have said, these days things are better; we have resources. The lab takes specimen five days a week, women these days come to ANC and they know their status before pregnancy".

This was confirmed by participant 6 from PHC C

"Drugs availability is always 100%, unlike before when we would transfer an HIV-positive woman coming for delivery because we did not have Nevirapine (prophylactic given to new-borns after delivery), every time we report the lab will notice if we are having a shortage".

According to the latest data, significant progress has been made in implementing PMTCT guidelines in low-and middle-income countries, although, in many developed countries, paediatric HIV has been virtually eliminated. The prevention of mother-to-child transmission is highly

effective and has improved both maternal and child health. Child mortality has been reduced by two-thirds between 2000 and 2015, while maternal health has been reduced by three quarters between 2000 and 2015 (National Consolidated Guideline, 2020)

This is congruent with what was reported by Tigabu and Dessie (2018), who concluded that the use of Option B+ as PMTCT intervention was found to be more effective in reducing MTCT of HIV, compared to other options. The authors further reported that, scaling up access to life-long ART and improving retention for women on treatment can potentially reduce further vertical transmission.

4.3.2 Sub-theme 1.2 Reduction in vertical transmission related to decrease in positive PCR results

Participants reported that it is now very rare to come across a PCR (polymerase chain reaction) positive or a newborn child who is HIV positive. It was reported in facility C that there was no PCR positive in 24 months which is a big achievement in the aspect of PMTCT guidelines. The new millennium goals are now moving from prevention to elimination of HIV infections in new-born children, so the reduced new infection rates mean progress with PMTCT. Polymerase chain reaction (PCR) tests are used to detect HIV's genetic material, called RNA. These test can be used to screen donated blood supply and detect very early infections before antibodies are developed (WHO, 2004)

These tests are not performed as often as the other HIV test because they are expensive and also time-and labour-intensive. These test are conducted after birth, at 10 weeks, 6 months and 18 months.

Participant 11 from PHC D reported:

"*We are implementing the guideline because we just had one PCR positive ever since I come here in 2017. Patients are now serious with taking treatment unlike before, and they are now adhering to treatment. The PCR test is collected after birth, at ten weeks and thereafter at 6 months."* This was confirmed by participant 4 from PHC B:

"You can finish the whole year without having a PCR positive test, ever since I started working here, we have never had a PCR-positive test"

Effective prevention of mother to child transmission of HIV can drastically reduce paediatric HIV infection; ever since PMTCT guidelines were introduced there has been a reduction of birth PCR-positive. Midwives use the number of PCR-positive tests to measure the success rate of

implementing PMTCT guidelines. When there is no positive PCR test in 24 months, it means there is effective implementation of the guidelines.

Milanzi, Mwapasa and Reece (2020) reported that receiving an infant's HIV test result in time was a driving factor for reduced infant rate reduction. The study concluded that most HIV-negative infants were still being breastfed at their last follow up; this indicates that a large proportion of HIV-exposed infants were potentially at future risk of MTCT of HIV via breastfeeding. The authors add that, even though some infants were being breastfed, there is reduced number of exposed infants who become HIV-positive (Milanzi et al., 2020).

4.3.3 Sub-theme 1.3 Improved midwives' attitude towards HIV positive patient

The findings revealed that increased knowledge in PMTCT amongst midwives has led to their positive attitudes in the implementation of PMTCT guidelines. Midwives' used to have negative attitudes towards HIV-positive patients because of stigma and lack of knowledge; midwives at PHC used to transfer HIV-positive mothers coming to deliver at the clinics from fear of being infected during delivery.

Participant 2 from PHC A said:

"But these days the attitudes of us nurses have improved, it is not like at the beginning because we were stigmatizing these patients. Midwives would run to lunch when they come across HIV positive patient coming for booking. Some were scared to conduct delivery saying they might be infected".

Participant 16 from PHC F confirmed:

"I think now midwives have better understanding about HIV/AIDS because midwives were even scared to collect specimen from HIV positive mothers, but now we treat them just like every other patient".

The positive attitude of midwives towards HIV-positive mothers has improved the quality of life for patients and enhanced nursing care, improved education about HIV/ AIDS and using information sources has contributed to better knowledge. A qualitative study conducted by Nuwagaba, Biribonwoha, Mayon-White, Okong and Carpenter (2007) explored the challenges faced by health workers in implementing the PMTCT programme in Uganda, at five PMTCT testing sites. The findings of the study revealed that staff members who were implementing the PMTCT programme in hospitals had a positive attitude, which led to changes in obstetric care, to the benefit of the patients (Nuwagaba-Biribonwoha et al., 2007).

In addition. Meilani, Setiyawati, and Barasa (2019) revealed that level of knowledge was the most dominant factor affecting PMTCT implementation. The authors recommended that efforts should be made to continuously improve the knowledge of midwives on PMTCT implementation, through peer support and training in order to achieve sustainable development goals.

4.3.4 Sub-theme 1.4 Introduction of mentor mothers to help with ongoing counselling

Nongovernment organizations (NGO) called Anova Health Institute has introduced new staff arrangements known as “mentor mothers”. Trained mentor mothers guide mothers through the rehabilitation of their underweight children, support pregnant mothers to improve birth outcomes, decrease the number of children born with a low birth weight and assist in the prevention of PMTCT.

Participants reported that, introduction of mentor mothers has had a huge positive impact on the implementation of PMTCT guidelines as they provide continuous counselling to HIV-positive mothers during pregnancy and breast feeding. This is what Participant 3 from PHC A said: *“Yes, they have had a big impact because when they give them information, the patients understand that this thing is not only theoretical it is real and they need to take treatment to avoid their newborns to be sick. So they must give us two mentor mothers per facility so that we don’t suffer when one is not around”.*

Participant 15 from PHC E supported:

“They can hire more mentor mothers because they are helping us with ongoing counselling to these mothers, since we midwives don’t have a lot of time with the patients due to long queues. We are having a hard time when the mentor mother is on leave because she does not have anybody to replace her”.

Patients understand mentor mothers because they are also HI- positive and most of them have HIV-negative babies, hence, their communication with patients is more effective as it is based on their lived experiences. Patients feel comfortable with mentor mothers because they are open about their status.

Participant 3 from PHC A said:

“I think patients understand the mentor mothers more because they are living testimonies, the mentor mothers are talking from experience because they are also HIV positive and open about their status”

Odiachi, Mujtaba and Agundu (2021) conducted a study about acceptability of mentor mothers as peer support for women living with HIV in North-central Nigeria. The study revealed that mentor mothers were very appropriate as role models for HIV-positive mothers because they are women, living with HIV and had achieved an HIV-negative status for their HIV-exposed infants. The authors further concluded that mentor mothers were recognized as playing major roles in maternal health education, HIV treatment initiation, adherence and retention, HIV prevention for male partners and infants, and couple disclosure.

4.3.5 Sub-theme 1.5: Availability of PMTCT guidelines in the facility

For midwives to implement PMTCT guidelines they need to have access to the guidelines. The availability of the guidelines has improved with time, midwives now always have access to the guidelines, in each consultation room.

Participant 2 from PHC A reported:

"By the time I was trained I was already implementing the guideline because we always have the guidelines with us in the consultation rooms, if you forget something you can always just open and see".

Participant 9 from PHC C confirmed:

"We always have access to the PMTCT guidelines; when they are updates or new information add, one person will attend the workshop and bring the new updated guideline".

Participants reported that now they have all the resources they need; this makes it is very easy to implement the PMTCT guidelines, hence the improvements. There are charts in each consultation room that shows algorithms of PMTCT guideline. The charts are very helpful because they are always there on the wall as a reminder. This is supported by the following quote:

Participant 2 from PHC A said:

"The guidelines are always here in the (MCWH) room, if you are lazy to open the guidelines, we have charts that have algorithms on how to treat HIV-positive pregnant patient"

Sepako, Setlhare, Mashalla, Chuma, Massele and Bulang (2016) conducted a study aimed at determining the profile and availability of policies and guidelines as reference documents at PHC facilities. The authors revealed that PMTCT policies and guidelines were available to ensure that necessary reference documents are available, unlike the policies and guidelines for immunization.

4.4 Theme 2: Employer-related challenges regarding implementation of P MTCT guidelines

Positive support from the employer is of vital importance as it promotes implementation of PMTCT guidelines by the midwives. Prevention of mother to child is one of the most important programs that are rendered in primary health care facilities. The employer is responsible for training of midwives, informing midwives about changes or updates on the PMTCT guidelines and placing midwives to implement the guidelines in different PHCs depending on the needs of the community.

4.4.1Sub-theme 2.1 Lack of training and refresher courses

Most of the midwives that participated in the study revealed that they have never received any sort of training regarding implementation of PMTCT guidelines. Participants reported that it is very frustrating having to implement PMTCT guidelines without training.

Participant 11 from PHC D reported:

"The only problem is lack of training, because ever since I was employed in 2017, I have never been trained for NIMHAART not even the VCT 3 days training. All that I know is I must open the EDL and the PMTCT guidelines and ask from other colleagues and it is so frustrating when you have a patient right in front of you and you don't know what to do, especially, when you are still new in the facility. Even the in-service sessions are few; if only they could do refresher courses per district, it will be better".

Participant 14 from PHC E reported:

"It is so frustrating reading on your own. It is not easy, sometimes you read the guideline and you don't understand it because it is not easy, if you are not trained. There are times when I am the only midwife in the facility so I have to call the other midwives to ask, using my own airtime"

PMTCT knowledge and guidelines are rapidly changing as more research evidence emerges, midwives, hence, need to be abreast with current developments. Lack of knowledge and not being familiar with new information updates will lead to poor implementation of PMTCT guidelines.

Participant 9 from PHC C said:

"The problem is when there are update they only send one person to train and the rest of us we will receive training from the individual who was trained and we cannot, therefore, say we were trained 100% since the individual might omit other new information, but in general the guidelines are easy to implement and easy to follow, and if we don't understand, we ask each other".

Previous studies on knowledge and practices of PMTCT amongst nurses have highlighted knowledge deficit in various aspects of the PMTCT cascade. A rapid assessment of infant feeding policies and programmes in four African countries (Botswana, Kenya, Malawi and Uganda) showed a high PMTCT-established knowledge deficit among nurses on risk of transmission with respect to breast feeding and infant feeding options (Chopra and Rollins 2009).

This is congruent with what was reported at Khayelitsha which was the first pilot site in South Africa to provide Antiretroviral Therapy and initiate the Nurse Initiated Management of Antiretroviral Therapy (NIMART) at primary health care level in the PHCs. The findings revealed several challenges faced by midwives while implementing the PMTCT guidelines, which included: shortage of NIMART-trained staff to attend to high number of clients per day, lack of manpower to trace mothers who did not come back after delivery and midwives experiencing burnout because of hectic working environment (Paul, 2016).

4.4.2 Sub-theme 2.2 Increased workload caused by demands of guidelines and shortage of staff

Empirical findings of the study revealed that pregnant women coming for their first antenatal care visit demand a lot of work. If the patient is HIV-positive the workload is double especially if the patient just found out about her HIV-positive status. In that situation, beside the normal routine conducted during the first ANC visit, the midwives provide counselling, dispense ARTs to the patient the same day and identify those who are eligible for initiation of isoniazid preventive therapy. This is supported by what the following participants said:

Participant 5 from PHC B reported:

"The challenge that I have observed is shortage of staff, a pregnant positive woman requires a lot of work and a lot of documentation; once she gets inside the cubicle, she takes a lot of time, and it strains if you are the only midwife in the facility. We are used to the documentations but it's still a lot"

This was supported by participant 14 from PHC E

"Positive pregnant mother involves a lot of work and a lot of documentation has to be done, especially, at the first antenatal visit. The patient would have to be counselled, specimen collected, educated about treatment and make sure that the patient is ok emotionally before she leaves the facility. You will need to document in the patient's file that stays at the facility, ANC book that the

patient goes with at home, ANC tracking tool, lab forms that goes with the specimen, N4 to trace the results and tick registers. There is a lot of documentation and sometimes you will find that there is only one midwife at the facility"

Participant 9 from PHC C stated: "*The employer needs to address the issue of shortage of staff in order to improve implementation of PMTCT guidelines. Shortage of staff has been a challenge in Department of Health preventing provision of quality service to the patients and causing burnout on the existing staff. Implementation of PMTCT guideline requires more midwives as it has a lot of documentation and time with the patient."*

In a study conducted by Kalembo and Zgambo (2012) shortage of PMTCT staff, interrupted supplies of materials and shortage of space for counselling were some of the reasons leading to loss of clients on PMTCT. In addition, poor monitoring of PMTCT services by health workers was one of the reason for poor follow-ups in PMTCT.

Participant 9 from PHC C said:

"Yoh! The challenge is workload we have a lot of patients, and the staff is not enough; sometimes you find yourself being alone in the facility and many patients to see, sometimes we miss a lot or don't follow the guideline because we are in a hurry to finish the patients. Department of Health has shortage when it comes to nurses, most of the neglected cases are caused by burnout"

Hanrahan and Williams (2017) revealed that despite the success of the PMTCT programme, considerable challenges still prevail. Lack of patient education, poor facility management and staff shortage could potentially influence the implementation of the PMTCT guidelines, negatively.

4.4.3 Sub-theme 2.3 Lack of proper infrastructure

Counselling is a very important part of therapy when it comes to implementation of PMTCT guidelines and for effective counselling to take place midwives need a proper counselling room that will provide privacy for the patient. Participants revealed that the maternal, child and women's health (MCWH) consultation rooms do not give patients privacy since it is divided by a board. It is easy for the patient in the next consultation room to hear what is being said in the other room. Participant 16 from PHC F reported

"The problem here at our facility is infrastructure, we don't have proper structure; we use mobile structure for MCWH, and it is not sound-proof. You find that sometimes you need to lower your

voice while counselling the patient, which affects the quality of the counselling you are providing". This was supported by Participant 7 from PHC C:

"First ANC visit can take up to two hours or longer if the patient is not accepting the status, but because of the heat inside this structure you sometimes do short cut and not provide the proper counselling that the patient needs"

Preparing a good counselling environment lays the necessary foundation for forming an alliance and building trust. The minimum requirements for a counselling room are that it facilitates confidentiality in terms of both sound, vision and space, in which a patient feels secure and free to express him/herself. Quality of counselling is affected if the environment does not facilitate confidentiality.

In a study conducted by Maphumulo and Bhengu (2017) there were many quality improvement programmes that had been initiated, adapted, modified and then tested but did not produce the required level of quality service delivery as desired, due to poor infrastructure. The authors concluded that the government of South Africa has a responsibility to ensure that implementation of National Core Standards will deliver the desired health outcomes, because achieving a lasting quality improvement system in health care, seems to be a huge challenge.

4.4.4 Sub-theme 2.4 Delayed patients' results caused by the laboratory increased workload

The four components of the comprehensive PMTCT programme endorsed by the World Health Organization are (1) primary prevention of HIV among women of child-bearing age (2) prevention of unintended pregnancies among women living with HIV (3) prevention of HIV transmission from a woman living HIV to her infant (4) provision of appropriate treatment, care and support to women living with HIV and their children and families (National Consolidated guideline, 2020).

The laboratory plays a very crucial role when it comes to rendering the third and fourth components. Implementation of PMTCT is determined by laboratory's results. During the first ANC visit, there are blood specimens that are routinely collected for testing. When a woman is HIV positive, blood for CD4 cell count and creatinine is collected. CD4 and creatinine determine the types of antiretroviral (ARV) that the patient needs. After 12 weeks, a blood specimen is collected for monitoring the viral load; this is done to determine if the ARVs are working and to monitor the chances of transmission of the virus to the baby. The findings of the study revealed that a delay in receiving laboratory results lead to poor implementation of PMTCT guidelines.

Participant 5 from PHC B reported:

"The other thing is the lab, there is a prescribed waiting period for viral load results on the guideline and the lab in most cases give us results very late because there is backlog at the lab and you need to wait. I think the lab also has heavy workload because we have more than 26 clinics and one hospital relaying on one laboratory. There are times the lab does not give us results in time or sometimes the specimen is returned, and you need to call the patient and collect another specimen".

This was supported by Participant 12 from PHC D:

"And we also have a challenge with patient who deliver at the hospital; their PCR results take time to come back as a results of the lab's back lock. When a patient goes to the hospital to collect the results they come back with nothing and we are forced to collect another PCR, which could be delaying the patient's initiation onto ARV".

Delay of laboratory results has a negative impact on the implementation of PMTCT because only these results are used to monitor viral load and inform the midwives about the chances of transferring the virus to the unborn child. The results are also needed to check if the patient requires second regimen or other interventions.

Monitoring the prevention of mother-to-child transmission (PMTCT) programme to identify gaps for early intervention is essential as South Africa progresses from prevention to elimination of HIV infection in children. Laboratory data can provide affordable monitoring of aspects of the PMTCT programme and assist in achieving virtual elimination of paediatric infection in South Africa (National Consolidated Guideline, 2020).

4.5Theme 3 Patient-related challenges regarding implementation of PMTCT guidelines

Implementation of PMTCT guideline is a two-way street. The patient must also play a role to achieve 100% implementation of the guidelines. Participants reported that one of the reasons why there are still HIV-positive new-born babies, is that there are patients who do not adhere to PMTCT guidelines.

4.5.1 Sub-theme 3.1 Non-compliance to PMTCT guidelines by patients

Based on the findings, one of the reason why patients do not take treatments is because they fear disclosing their HIV-positive status to their partners. This is in line with what has been reported in The National Consolidated Guidelines on PMTCT (2020) that, disclosure of one's status promotes adherence to ARVs.

Participant 2 from PHC A reported:

"The challenges that we are facing as nurses is that you find that the patient is having challenge telling the spouse about the status, more especially, when she comes to 1st antenatal booking and she discovers that she is HIV positive. When we check, we find that the patient is afraid to tell the partner that her status has changed. This affect the baby and the implementation of the guideline because they don't take treatment because they are scared the partner will ask what they are taking. So, at the end the patient will collect treatment every month but won't use the treatment. That is why newborns end up taking treatment".

This was supported by Participant 8 from PHC C

"We are following everything and implementing everything that the guideline requires, the problem is the user; most of the women come very late. Some come early but are in denial; you test them and counsel them but still they don't believe. Some have a problem with disclosing the status to the partners, so they are not taking treatment".

Patients' lack of commitment is a major problem in the implementation of PMTCT guidelines because findings of studies revealed that another reason there are still HIV-positive babies born is lack of patient commitment. A study conducted by Kweyamba, Buregyeya and Kusima (2018) reported that poor adherence to ARVs is still a major challenge preventing the success of MTCT. The authors elaborated that patients with poor education backgrounds do not understand the importance of ANC visits as a result they give birth to HIV-positive babies.

Participant 2 from PHC A reported:

"We are trying by all means to implement the PMTCT guidelines, the problem is with the users because they are in denial. Last week Friday there was a lady with sores all over the body like she is progressing to AIDS and she said she didn't know her status until today, and you can see she is still in denial. She mentioned that she recently just got married, but you will find that she is lying because the partner does not know her status".

According to the findings of the study, management of HIV-positive mother depends on what the patient tells the midwives; once a patient is not honest about her history and the life style, she becomes on obstacle to the implementation of the guidelines.

Participant 1 from PHC A reported:

"The other problem is patients who lie and say they don't know their status knowing very well that they are taking treatment somewhere else. In most cases the PCR-positive tests that are being obtained is the fault of the patients because they don't comply with the guidelines".

Participant 15 from PHC E added:

"I really wish patients would comply and stop adding workload on top of another workload; it's very hard having to follow patients at their home because they default treatment. There are times when I wish government can make policies that allow mothers to bring their husbands during ANC visits, because some patients don't take treatment because of their husbands. Some are not open with their husbands and they keep on having re-infection as a result of the other partner not taking treatment".

A study conducted by Omonaiye, Kusljic and Manias (2019) about medication adherence in pregnant women with HIV-receiving antiretroviral therapy in sub-Saharan Africa, revealed that non-discloser to a partner, family and the community could limit or define the extent of a woman's adherence to prescribed antiretroviral drugs during pregnancy. The study also revealed that knowledge of HIV status, either before or during pregnancy was significantly associated with medication adherence.

4.5.2 Sub-theme 3.2 Free movements of patients without proper documentation

Patients intending to move from one PHC facility to another must have a transfer form completed from the facility where she was being cared for with significant information such as: ARTs' start date, viral load results, CD4 results on initiation, the types of ARVs the patient is taking and progress about the risk of transmission of HIV to the unborn. Patients who move from one facility to the other without any medical history from the previous facility become difficult to manage.

The empirical findings reveal that most of the patients with PCR-positive results, are those who transferred themselves to other facilities without proper documentation. This is supported by what the following participants said: Participant 8 from PHC C said:

"Most of our patients have free movements, you find that the patient did ANC at clinic A, and delivered at clinic B, after that goes to clinic C for baby immunization. It is not simple to manage a patient who is always moving, leaving vital information behind. We need to monitor the viral load during breastfeeding, but the mothers keep moving and it becomes impossible to manage".

Participant 13 from PHC D added:

"They are easy to implement here in our clinic, as we try by all means to avoid PCR-positive test results. The one we had last year was a patient who was coming from Gauteng; the ANC document she had showed that she only went once to the clinic, showing that she was not taking treatment".

Patients' movements do not make implementation of PMTCT easy on the midwives, especially, when the patients don't bring a referral form along that holds crucial information about her and her unborn child. Micek, Gimbel-sherr, Baptista, and Matediana (2017) conducted a study about losses due to non- follow-up of adults in public HIV-care systems in Mozambique. The study revealed that substantial drop-offs were observed for each step between HIV testing and treatment, and these were highest for PMTCT patients who move in-between facilities without proper documentation. The authors recommended that improvement should be made on follow-ups to ensure that people benefit from available services.

4.5.3 Sub-theme3.3 Failure to visit health facilities regularly due to poverty

The National Consolidated Guideline on PMTCT (2020) requires a patient to come to the clinic monthly, sometimes weekly depending on patients' status. The current findings revealed that this is not possible for patients who have to wait for payment of grants before coming to the clinics. Participants indicated that patients who stay far from the clinic miss their appointment because they do not have money for transport. This is supported by the following quotes:

Participant 3 from PHC A reported:

"For patients who stay far from the facility, accessibility becomes a factor, so they don't show up on appointment dates. You will find them saying they didn't have money for transport. You find that the are certain bloods that you need to collect but the patient didn't show up; sometimes the treatment is finished but the patient is still waiting for pay day in order to come to the facility".

Participant 15 from PHC E confirmed:

"For me, I think poverty affects the implementation of PMTCT guidelines because there are instances where the patients' viral load is unsuppressed and you need to send the patient to hospital to be managed by doctor or to be upgraded to regimen two, and the patients would say they don't have money to go to hospital and you cannot send her by ambulance since it's not an emergency. The patient must wait for month end to go to the hospital and that is giving the virus chance to replicate".

Transport money is not the only obstacle that hinders patients from complying with the PMTCT guideline, there are several socioeconomic factors that cause poor adherence to medication. The findings of this study revealed that there are patients who do not take treatment because of hunger; patients complain that taking treatment on an empty stomach is very painful. This point is supported by the following quotes:

Participant 16 from PHC F

"Some patients, especially, the foreigners complain of hunger saying that they are taking treatment on an empty stomach and it's very painful as it causes peptic ulcers"

Obstacle to adherence continue to undermine both the individual and public health benefits of widespread access to ART. Among women with recent births, food insecurity is inversely associated with service utilization in the PMTCT cascade and severe household-food insecurity may be positively associated with mother to child transmission (Mccoy, Raluca, Mushavi and Mahomva, 2015).

4.5.4 Sub-theme 3.4 Unbooked cases coming for delivery

According to the PMTCT guideline there is 15 to 45% chance of passing HIV to the unborn child during pregnancy and delivery if the mother is not taking treatment, however, taking the correct treatment during pregnancy and while breastfeeding can virtually eliminate this risk. Participants reported that mothers who delay ANC booking are not only an obstacle in implementing PMTCT, but also put their unborn child at a great risk of being infected.

Booked patients are those diagnosed with HIV who register at the clinic and receive comprehensive care of the pregnancy until birth; unbooked patients are HIV-diagnosed pregnant women who show up, for the first time, during delivery. According to the findings of the study in most cases where the child is infected, it is the fault of the mother because she came very late when the pregnancy had progressed.

Participant 12 from PHC D reported:

"What I have seen in most cases were the child becomes HIV-positive is when the mother delays booking or come very late when her pregnancy has advanced to 3rd trimester and delay in taking treatment"

This was supported by Participant 17 from PHC F

"Last year we had a patient who was staying in the nearby farm, the patient had never received any medical assistance during her pregnancy. She was diagnosed HIV in 2014, but she had never taken treatment, the patient was p4g5. When the patient arrived at our facility, she was head on perineum we had to deliver. She lost a lot of blood and died the next day and her baby is HIV-positive"

Participant 11 from PHC D said:

"Whenever there is a PCR-positive they come for the midwife; the first blame is on the midwife as to what it is that you did as a midwife to prevent. They forget we don't stay with them at home".

Unbooked cases are treated as high risk because the viral load and the CD4 is not known; the chances of transmission is also high because the mother is not on treatment. These patients are difficult to manage and even the delivery is not easy as the baby and the midwife are at risk of transmission. In a study conducted by Goswami and Chakravorty (2011) the main obstacle identified was the unknown viral load of the mother because the mother was unbooked. The study concluded that one cannot tell whether a newborn is affected during pregnancy or the breastfeeding period.

4.5.5 Sub-theme 3.5 Cultural impact regarding exclusive breastfeeding

The National Consolidated Guidelines on PMTCT (2020) prescribe for women to exclusively breastfeed for at least six months, for according to the guideline mixing breastmilk and other foods before this time increases your baby's risk of HIV. The mother is only allowed to mix feed after six months.

Patients do not comply with the guidelines when it comes to exclusive breastfeeding and unfortunately, patients are not honest on how they are feeding their kids. The findings of the current research indicated that patients are educated about exclusive breastfeeding daily and they know they are not supposed to mix feeding types until after six months; when they are asked about this, they do not tell the truth, claiming that they are doing exclusive breastfeeding. These points are supported by the following quotes:

Participant 6 from PHC C said:

"Participant I think we should strengthen the issue of exclusive breastfeeding because you can only rely on what the mother tells you; there are no test that can be conducted to test if the baby is on exclusive breastfeeding but these patients are lying when they say they are on exclusive

breastfeeding. During breastfeeding is when the child is mostly expose to the virus. I think we should come with a strategy to ask questions to avoid patients lying, rather we should educate them about the importance of breastfeeding".

Patients are given a lot of pressure by the elders and the in-laws at home. There are some cultural beliefs and drinks that needs to be given to the baby early in the morning. These rituals are conducted for the newborn with the belief that they chase away evil spirit; during these rituals babies are given things to drink that disturb exclusive breastfeeding.

Participant 14 from PHC E reported:

"I had a patient who came to me crying because the mother in-law gave the baby some muti during the baby's ritual. The mother had not disclosed her status to the in-laws so she didn't know how to stop them from giving the baby muti. Our patients are being pressured by the elders especially those that do not disclose their status".

Participant 6 from PHC C added:

"The only thing that is challenging is exclusive breastfeeding; even if you educate them about the benefits and the risk of the transfer of the virus during breastfeeding, they don't comply at 6weeks.

You will hear the patient saying she is giving small portion of porridge because the baby was crying none-stop".

Kakute and Meyer (2015) conducted a study about cultural barriers to exclusive breastfeeding by mothers, in a rural area of Cameroon. In the study mothers identified some cultural factors as influencing their decision to mix-feed their babies - 1) pressure from village elders and families to supplement because it is a traditional practice, 2) belief that breast milk is an incomplete food that does not increase the infants weight, 3) belief that all family members should receive the benefit of food growth in the family and 4) the taboo of prohibiting sexual contact during breastfeeding.

4.5.6 Sub-theme 3.6 Lack of partner involvement during ANC management

Lack of partner involvement in PMTCT services is a major barrier to women to implement the PMTCT guidelines. The findings revealed that a lot of patients are not taking treatment because they are scared to disclose their status to their partners. HIV is a sexually-transmitted disease and just like any other STI, both partner should be present when consultation is done. This is supported by the following quotes:

Participant 12 from PHC D reported:

"Another thing that pulls us back is the non-involvement of partners; they are scared to tell their partner. We are only giving counseling to the mothers, but the fathers also need to be involved because sometimes the viral load cannot be suppressed because only the mother is taking treatment and the partner is re-infecting as the mother is too scared to talk about condom use with their partners. I think implementation of PMTCT would improve if we involve the partners" This was supported by Participant 15 from PHC E:

"The government must reinforce a policy that say patients must bring their partners during ANC visit, because it has a big impact on the implementation of PMTCT guideline"

Lack of male partners' involvement in PMTCT services is one of the key obstacle to women accessing ANC routine and benefits. HIV is a sexually-transmitted disease, hence, when a patient is being treated for HIV, it is important to bring her sexual partner in order to be managed correctly. A study was conducted in Tanzania about male involvement in PMTCT services. The study revealed that barriers to ANC/PMTCT attendance included lacking information/knowledge, no time, neglect, misconception that the services are females' responsibility and fear of HIV test result (Theuring, Mbedzi, Luvanda, Harder, Kunz and Harms, 2019)

4.6 Theme 4: Poor quality care provision by midwives

The findings of the study reveals that there are gaps that they have observed during the implementation of the guidelines - that the quality of the implementation is affected by the workload in the facility. The nurses fail when it comes to counselling, documentation, health education and the reduced attention they give to patients after birth of their children.

4.6.1Sub-theme 4.1 Quality of counselling provided by midwives

Handling HIV-positive pregnant women is a lot of work, especially, during the first booking. The findings of the study revealed that dealing with one patient can take up to two hours, and because of shortage and the queue outside, midwives tend to rush when it comes to counselling. These points are supported by the following quotes:

Participant 2 from PHC A reported:

"The quality of the counselling and the attitude of the midwife, how you are giving the counselling also contribute, because now we realized that we need more time with the patient so that they can understand fully".

This was supported by Participant 15 from PHC F:

"Staff shortage is also a challenge as I already mentioned that it takes time, especially first visit, so being the only midwife in a facility you take too much strain. The other day I forgot to give a patient treatment because I was tired and I attended many patient during that day., I found out during the next visit that the patient was off ARV for the whole month. Sometimes during counselling, especially, if the patient just found out about her status, you will just feel tired, like you won't even know where to start".

Counselling is aimed at providing the clients with information so as to enable them to make informed choices. It is further emphasized that information must be sensitive to the patient's needs and aimed at breaking the silence, as well as to de-stigmatize HIV/AIDS infection status. The component of counselling includes: (i) pre-test counselling (intended to provide information on HIV and PMTCT) (ii) HIV testing (iii) post-test counselling (to provide test results, information on preventive measures, transmission and treatment and care) and (iv) follow up counselling and referral (Kumar and Kusuma, 2014).

4.6.2 Sub-theme 4.2 Lack of proper documentation

Participants reported that during audits that occur every month end, they have observed that there is a big gap in their documents. Some documents are incomplete, some are not completed at all especially, on the tracking tool (book used to record all HIV positive pregnant patients until the baby is 2years of age). This is supported by the following quotes:

Participant 10 from PHC D said:

"We sometimes do record audit to assess if we are doing documentation according to the guidelines, and during the audit we find that there are few gaps, like recording PCR results on the tracker tool".

Once the patient gives birth, midwives let their guard down and the viral load results are no longer written, even though, the guidelines prescribe that the mother and the baby must be monitored until the baby is 2 years of age; when the baby has developed his /her own immune system.

Participant 7 from PHC C added"

"In most facilities that I have worked at, the tracking tool is never fully completed; it takes time and it feels like you are doing a separated job" Participant 4 from PHC B also added:

"They should also reduce the documentation that we need to write; it is a lot"

The PMTCT guidelines require a lot of documentation as midwives have to document patient's file, ANC book, PCR tracking tool, N1 for laboratory, N4 to record specimen and tick register. Due to shortage of staff and long queues, these documents are not usually, completed fully.

Maputle, Ramavhoya, Makhado and Lebese (2020) maintain that midwives are implementing the HIV guidelines during pregnancy, however, shortage of human resources during the first visit result in a prolonged waiting time for other patients. The authors explained that midwives are expected to complete different records; this means a lot of time is spent consulting with one patient and when there are few midwives, this affects the overall quality of care.

4.6.3 Sub-theme 4.3 Poor midwifery management during puerperal stage

There is a tendency of relaxing once the baby is born and the PCR is negative; midwives no longer manage the patient like during pregnancy. The midwives feel that since they have achieved a negative status for the newborn, they can relax, but they forget that the baby is still exposed during breastfeeding.

Participant 12 from PHC D said:

"There is gap after delivery that is evidenced by the PCR tracking tool, that midwives relax after delivery, even the blood sometimes is not collected and that is when the virus gest a chance during breastfeeding. Even mothers who were negative during ANC their status can change and put the baby at a big risk".

Participant 6 from PHC C confirmed this:

"Another challenge is when the patient tested HIV-negative during pregnancy and during breastfeeding the status changes, even us as midwives we let our guard down once the mother gives birth when negative and forget that their babies are still exposed during breastfeeding".

Mother-to-child transmission of HIV is the primary mode of HIV infection in infants, during breastfeeding babies have higher chance of being infected, therefore, patients should be provided with lifelong antiretroviral prophylaxis intervention to reduce HIV transmission through breastfeeding. Even patients who were negative during ANC must be monitored as the status can change anytime.

A study conducted by Johnson, Stinson and Sherman (2012) revealed that maternal seroconversion during late pregnancy and breastfeeding contributes significantly to the pediatric HIV burden, hence, needs extensive attention in the planning of PMTCT programmes.

4.6.4 Sub-theme 4.4 Quality of health education given to patients

According to the PMTCT guidelines, health education regarding PMTCT should be given to all pregnant patients regardless of their HIV status, however, the findings of this study revealed that midwives provide health education only to patients who do not comply with the guidelines.

Participant 13 from PHC D said:

"These days health education is only given to patients who are not complying with the guidelines, and we forget that the rest also need health education to make informed decisions".

Participant 16 from PHC E reported:

"We sometimes blame the patients for not taking treatment and we forget that we are not educating them about the treatment; there are patients who default treatment because of lack of knowledge".

Health education can help midwives inform and remind patients of the proper ways to self-manage their care and avoid non-essential re-admissions. Better education can also help patients understand the care setting most appropriate for their condition and avoid unnecessary trips to the hospital. When patients do not receive quality health education it puts their health at risk.

Buthelezi, Modeste and Phethu (2019) concluded that continuous engagements with all relevant stakeholders should remain a priority in the protection of HIV-exposed children. It is evident that there are gaps in the current implementation of PMTCT guidelines, especially in the rural areas. The authors further explained that patients in rural areas, hence, still needs to be educated about HIV/AIDS.

4.7 Conclusion

In this chapter data presentation, data analysis and discussion of the study were presented. The study findings revealed that shortage of staff, lack of training and socio-economic factors remains an obstacle to the implementation of PMTCT guidelines in Mopani District of Limpopo Province. Chapter 5 present a summary of the study, limitations and recommendation

CHAPTER 5

LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

Chapter 4 focused on data presentation, analysis and discussion. This chapter aims to provide a summary of the research process, draw conclusion from the findings of the study and make recommendations. The study concluded that midwives are implementing the PMTCTC guidelines, however, shortage of human resources, poor infrastructure, and lack of male-partners' involvement, cultural beliefs and lack of adherence remains major barriers in the implementation of PMTCT guidelines. The population of the study was midwives providing PMTCT services at Greater-Giyani sub-district of Limpopo Province.

5.2 Study purpose The purpose of the study was to determine midwives' experiences regarding implementation of PMTCT guidelines in Mopani District, of the Limpopo Province.

5.3 Objective of the study

To identify factors that affect midwives during the implementation of PMTCT guideline and to explore the experiences of midwives regarding the implementation of PMTCT guidelines in the Mopani District of the Limpopo Province. The researcher explored midwives' experiences regarding implementation of PMTCT guidelines at Greater-Giyani sub-district and observed that the objectives of the study were met.

5.4 Recommendations from the study

The researcher made the following recommendations based on the research findings**:**

5.4.1 Recommendations for Department of Heath

- To strengthen counselling skills of midwives as a strategy to facilitate adherence to ARVs by pregnant women and provide training for all midwives employed at primary healthcare facilities to promote proper implementation of PMTCT guidelines.

- Make a policy that requires bringing the partner when patients come for ANC first visit, as a strategy to improve disclosure of the HIV-positive status.

- Hiring of more midwives to promote provision of PMTCT services. This will reduce the work burden and exhaustion of the staff, reduce waiting time and improve the implementation of PMTCT guidelines.

- To consider consolidation of PMTCT registers and provide electronic gadgets for filling patients' records to reduce workload and time used for consultation with patients.

- Improve on primary healthcare facilities' infrastructure to provider proper environment for counselling and meet the needs of the community. In addition, facilities must be accessible to the communities they serve.

5.4.2 Recommendations for nursing education

- Universities and colleges should train students for PMTCT (Prevention of mother to child transmission) and NIMHAART (nurse-initiated management of antiretroviral) so that students have knowledge about implementation of PMTCT guidelines.

- During clinical placements of students, more hours should be allocated at primary health care facilities to improve students' practical knowledge and skills.

- Universities and colleges should expose students more to practical so that they gain skills in order to be competent, confident and committed.

5.4.3 Recommendations for nursing practice

- To always put the patients' needs as a priority, therefore, improve on counselling skills and provision of health education for nurses.
- To practice self-assessment and auditing to check progress of implementation of PMTCT guidelines and identify gaps.

5.4.4 Recommendation for future research

- Further research should be done on the same topic at other primary health facilities that render the PMTCT programme in Mopani District.

5.5 Limitation

Since the study was conducted with those midwives who were working during the data collection sessions, the study results cannot reflect the situation of all midwives in greater Giyani sub-district. The study was conducted only at Mopani District; therefore, the results cannot be generalised.

5.6 Conclusion

PMTCT guidelines developed by the World Health Organisation (WHO) in 2006 still remain the best strategy to eliminate MTCT of HIV but they require appropriate application and a strategic implementation of interventions to tackle the challenges. Sociocultural and socioeconomic factors prove to be significant barriers to the successful implementation of PMTCT guidelines.

Stigmatisation and poverty which are sub-factors of sociocultural and socioeconomic limit the implementation of PMTCT guidelines.

The impact of shortage of midwives is reported to be directly related to poor implementations of guidelines as a result of the increased workload; this leads to low morale and burnout. Midwives are passionate about their job, despite the hurdles related to their day-to-day work environment, but they are demoralised by shortage of staff and burnout. The shortage of midwives during pregnant women's first visit results in prolonged waiting time for other patients.

The prolonged time for patient's results and shortage of consultation rooms affect the implementation of PMTCT guidelines. Majority of midwives demonstrated poor skills in counselling, and there is shortage of NIMART-trained staff attending to the high number of patients per day.

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ANNEXURE A

ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR: Ms

O Matombo

STUDENT NO:
11603412

PROJECT TITLE: **Midwives' experiences regarding the implementation of prevention of Mother to child transmission (PMTCT) guidelines in Mopani District of Limpopo Province, South Africa.**

ETHICAL CLEARENCE NO: SHS/21/PDC/01/0604

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr KG Netshisaulu	University of Venda	Supervisor
Dr AR Tshililo	University of Venda	Co - Supervisor
Ms O Matombo	University of Venda	Investigator – Student

Type: **Masters Research**
Risk: **Minimal risk to humans, animals or environment** Approval

Period: **March 2021 – March 2023**

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, additional information; Require further modification or monitor the condwithdraw or postpone approval if: Any unethical principles or practices of the project are revealed or suspected. uct of your research or the informed consent process. To ask further questions; Seek

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 2021

Name of the HCTREC Chairperson of the Committee: Dr NS Mashau

Signature: 

PRIVATE BAG X5050, THOHOYAN DOU, 0950 LIMPOPO PROVINCE SOUTH AFRICA TELEPHONE (015) 962 8504/8313 FAX (015) 962 9060

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ANNEXURE B

REQUEST TO LIMPOPO PROVINCE, DEPARTMENT OF HEALTH TO CONDUCT RESEARCH

P O Box 2911

SIBASA

0970

23/03/2021

Limpopo Province

The Department of Health and Social Development

Private bag x9302

Polokwane

0700

RE: APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH STUDY

I am a student registered for Masters in Nursing at the University Of Venda (UNIVEN). I am requesting for permission to conduct a study to fulfil the requirements of my degree. The topic of my study is “Midwives experiences regarding the implementation of PMTCT guidelines in Mopani District of Limpopo Province, South Africa. The study will be conducted at Greater-Giyani-sub

district at the following facilities Nkuri clinic, Thomo clinic, Muyexe clinic, Shivulani clinic, Hlaneki clinic, Loloka clinic, Zava clinic, Khakhala clinic, Mapayeni clinic, Ngove clinic and Giyani health centre.

Covid-19 precautions will be observed, anonymity and confidentiality will be ensured by using a private room for the interviews and replacing names of participants with numbers. Hoping this request will be favorably considered

Yours faithfully

Ondwela Matombo (076 483 9917)

ANNEXURE C

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Ref : LP_2021-04-011

Enquires : Ms PF Mahlokwane

Tel : 015-293 6028

Email : Phoebe.Mahlokwane@dhsd.limpopo.gov.za

Department of Health

Ondwela Matombo

PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below**;**

Midwives' experiences regarding the implementation of prevention of mother to child transmission (PMTCT) guidelines in Mopani District of Limpopo Province, South Africa

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
    a. Present this letter of permission to the institution supervisor/s a week before the study is conducted.
    b. In the course of your study, there should be no action that disrupts the routine services, or incur any cost on the Department.
    c. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
    d. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
    e. The approval is only valid for a 1-year period.
    f. If the proposal has been amended, a new approval should be sought from the Department of Health
    g. Kindly note that, the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated

_____ _____18/05/2021 **Head of Department** **Date**

Private Bag X9302 Polokwane
Fidel Castro Ruz House, 18 College Street. Polokwane 0700. Tel: 015 293 6000/12. Fax: 015 293 6211.
Website: http/www.limpopo.gov.za

The heartland of Southern Africa Development is about people!

MOPANI DISTRICT DEPARTMENT OF HEALTH TO CONDUCT RESEARCH

P O Box 2911

SIBASA

0970

01/05/2021

Mopani District

The Department of Health and Social Development

Private bag x9687

Giyani

0826

RE: APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH STUDY

This letter serves to request for permission to conduct a research study. I am a student registered for Masters in Nursing at the University OF Venda (UNIVEN). I am requesting for permission to conduct a study to fulfil the requirements of my degree. The topic of my study is “Midwives experiences regarding the implementations of PMTCT guidelines in Mopani District of Limpopo Province, South Africa. The study will be conducted at Greater-Giyani-sub district at the following facilities Nkuri clinic, Thomo clinic, Muyexe clinic, Shivulani clinic, Hlaneki clinic, Loloka clinic, Zava clinic, Khakhala clinic, Mapayeni clinic, Ngove clinic and Giyani health centre.

Covid-19 precautions will be observed, anonymity and confidentiality will be ensured by using a private room for the interviews and replacing names of participants by numbers.

I hope this request will be favorably considered.

Yours faithfully

Ondwela Matombo (076 483 9917/ 0745693405)

ANNEXURE E

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
MOPANI DISTRICT

RefNo: S4/2/2

Enquiries: S Chuma

Tel Direct: 015 811 6633

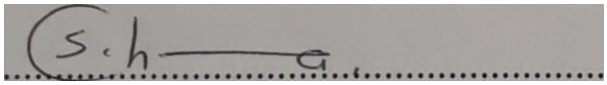
Email address: Shadrack.Chuma@dhsd.limpopo.gov.za

Ms. Matombo Ondwela
P.O.BOX 2911
SIBASA
0970

PERMISSION TO CONDUICT RESEARCH IN THE DEPARTMENT HEALTH FACILITIES OF MOPANI DISTRICT: YOURSELF

l . The approval letter from the Provincial office dated the 18 May 2021 has reference.

2. This serves to inform you that permission is granted to your request to conduct research on "Midwives experiences regarding the implementation of PMTCT guidelines in Mopani District of Limpopo Province, South Africa".
3. Note that the above-mentioned approval is valid for a period of one(l) year.
4. You will be required to furnish the Managers of the facilities/clinics of your choice with this letter for the purposes of access and assistance.
5. You are further expected to abide by all prescripts governing public service during the course of your research.
6. Thanking you.



PRDIRECTOR: CORPORATE SERVICES

ANNEXURE F

UNIVEN Informed Consent

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

LETTER OF INFORMATION

Title of the Research Study : Midwives' experiences regarding the implementation of prevention of mother to child transmission (PMTCT) guidelines in Mopani District of Limpopo Province, South Africa.

Principal Investigator/s/ researcher: Matombo Ondwela

Co-Investigator/s/supervisor/s: Dr Netshisaulu KG and Dr Tshililo AR

Brief Introduction and Purpose of the Study: Midwives perform a wide variety of PMTCTrelated tasks that range from - HIV diagnosis, prescription of anti-retroviral therapy, ensuring safe obstetrics during delivery, counseling on infant feeding, to management of opportunistic infections. The purpose of this study is to explore the experiences of midwives regarding the implementation of PMTCT guidelines in the Mopani District of Limpopo Province

Outline of the Procedures: The researcher will secure an appointment with the participants who met the inclusion criteria, where the researcher will explain ethical issues, namely, confidentiality, issues of non-maleficence and voluntary participation. An informed consent will be signed and permission for the use of a voice recorder will be obtained from each participant. The researcher will collect data through semi-structured interviews; This will give participants opportunity to explore their experiences regarding the implementations of PMTCT guidelines. The interview will take 30-45 minutes and Covid-19 precautions will be observed during the interview. The study will only focus on midwives with at least 2 years' experience in the implementation of PMTCT guidelines and working at primary healthcare facilities of Greater-Giyani sub-district.

Risks or Discomforts to the Participant: The will be no invasive procedure done to the participant, but in case of adverse reaction this will be treated as an emergency and the participant withdrawn from the study.

Benefits : The study might benefit midwives by identifying strengths, needs, and challenges in implementing PMTCT guidelines. The study might raise awareness among midwives regarding the need to accurately implement PMTCT guidelines.

The study also has significance for the education of healthcare providers since this research area could be included in the curriculum. The study might also contribute to the development of policy based on the recommendations. It is also hoped that the quality of care will improve due to the effective implementation of PMTCT guidelines discussed in this study.

The participants have the right to withdraw from the study at any stage.

Remuneration : No remunerations will be offered.

Costs of the Study : Participants will not be expected to pay anything towards the study.

Confidentiality : Confidentiality will be ensured by conducting interview in a private room, and replacing names of the participants with numbers.

Research-related Injury : In case of a research-related injury the participant will be withdrawn from the study, taken to the nearest hospital and the incident reported to the facility manager

Persons to Contact in the Event of Any Problems or Queries: Please contact the researcher (076 483 9917), my supervisor (072 692 6926) or the University Research Ethics Committee Secretariate on 015 962 9058. Complaints can be reported to the director: Research and Innovation, Prof GE Ekosse on 015 962 8313

ANNEXURE G

Consent for participation in research

Statement of Agreement to Participate in a Research Study:

- I hereby confirm that I have been informed by the researcher, (Matombo O), 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 (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth and initials, will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during this research which may relate to my participation will be made available to me.

Full Name of Participant	Date	Time	Signature
.....	.....	.....	.....

I, Matombo O, hereby confirm that the above participant has been fully informed about the nature, conduct, and risks of the above study.

Full Name of Researcher ….....

Date..... Signature.....

Full Name of Witness (If applicable) .....

Date ..... Signature.....

ANNEXURE H

Semi-structured interview guide

Research question

- What are your experiences regarding the implementation of PMTCT guidelines in Mopani District of Limpopo Province, South Africa?

- What are the factors affecting midwives during implementation of PMTCT guidelines in Mopani District of Limpopo Province, South Africa?

- What challenges do midwives encounter during implementation of PMTCT guidelines in Mopani District of Limpopo Province, South Africa?

- What can be done to improve implementation of PMTCT guidelines in Mopani District of Limpopo Province, South Africa?

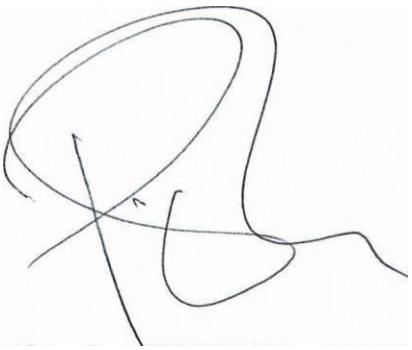
ANNEXURE I

Editing and Proofreading Report

PROOF OF EDITING

13 February, 2022

This is to certify that I, Dr P Kaburise, of the English Department, University of Venda, have proofread the dissertation titled - **MIDWIVES' EXPERIENCES REGARDING THE IMPLEMENTATION OF PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) GUIDELINES IN MOPANI DISTRICT OF LIMPOPO PROVINCE, SOUTH AFRICA** - by Ondwela Matombo (student number: 11603412). I have indicated some amendments which the student has undertaken to effect before the final dissertation is submitted.



Dr P Kaburise (0794927451/ 0637348805; email: phyllis.kaburise@gmail.com)

Dr P Kaburise: BA (Hons) University of Ghana (Legon, Ghana); MEd University of East Anglia (Cambridge/East Anglia, United Kingdom); Cert. Teaching English as a Foreign Language (Cambridge University, United Kingdom); Cert. English Second Language Teaching, (Wellington, New Zealand); PhD University of Pretoria (South Africa)

ANNEXURE J

Interview

Interviewer: What is your experience as a midwife regarding implementation of PMTCT guidelines in Mopani District of Limpopo?

Participant: *From my side I don't think it's that bad because as midwives we try to treat patients as prescribed in the guidelines. And because these women come every month it's easy to manage them and make sure they are taking treatment as prescribed by the guidelines. In our facility we trace them if they miss an appointment or send Home-based care persons to their home. I think the reason babies are born HIV-positive is because the mother was unbooked, defaulted treatment or is in denial, because with all the booked patients we try by all means to avoid PCR- positive tests.*

Interviewer: So you are saying patient don't comply with the guidelines?

Participant: *yes, mostly when there is PCR-positive case, during investigation of the case you will find that the mother has either booked late or she was not taking treatment or defaulted treatment during breastfeeding*

Interviewer: How do you manage such patients?

Participant: *We try and trace them where they are staying; we are always educating them about PMTCT and the importance of taking treatment during pregnancy but sometimes by the time we find them it is already late; the baby has been infected.*

Interviewer: What are the factors affecting midwives during implementation of PMTCT guidelines in Mopani District of Limpopo?

Participant: *For me I think poverty affects the implementation of PMTCT guidelines because there are instances where the patient's viral load is unsuppressed and you need to send the patient to hospital to be managed by doctor or to be upgraded to regimen two, but the patient would say they don't have money to go to hospital and you cannot send her by ambulance since it's not an emergency. The patient will have to wait for month end to go to the hospital and that is giving the virus chance to replicate. Other patients, especially, the foreigners complain of hunger saying they are taking treatment on an empty stomach.*

There are times when the lab does not give us results in time and sometimes the specimen is returned and you need to call the patient and collect another specimen. Positive-pregnant mothers require a lot of work and a lot of documentation has to be done, especially at first antenatal visit. The patient would have to be counseled, specimen collected, is educated about treatment and you have to make sure the patient is ok emotionally before she leaves the facility. You will need to document the information in the patient's file that stays at the facility, ANC book that patient goes with home, ANC tracking tool, lab forms that go with the specimen, N4 to trace the results and tick registers. There is a lot of documentation and sometimes you will find that there is only one midwife at the facility.

Interviewer: What can you say are the challenges you face during implementation of PMTCT guidelines?

Participant: *eish, I don't know what to say because since I have already mention them, but personally I would say my challenge was language barrier because I am Venda-speaking serving Tsonga community; communicating was very hard because in many cases I had to find an interpreter and a lot of important information could be missed in the process.*

Another challenge would be staff shortage as I already mentioned. Sometimes you find yourself being the only midwife in the facility, and you need to see many patients being alone which can make you to make mistake due to burnout. I don't know what else to say the others will add onto what I have said.

Interviewer: What do you think needs to be done to improve the implementation of PMTCT guidelines?

Participant: *I think the government should hire more midwifes since there are a lot of graduates sitting at home currently who are seeking for employment, because a lot of mistakes are due to burnout which is a result of shortage of staff, and you people who are doing research I don't know if you are showing the government your findings, because you keep coming asking as information but we don't see any change, very soon we will be tired of answering your questions.*

Interviewer: thank you very much for your time and I wish you all the best.

ANNEXTURE K

TOPOGRAPHICAL MAP