KNOWLEDGE, ATTITUDE, AND PRACTICE OF ADOLESCENTS REGARDING ANTENATAL CARE BOOKING IN VHEMBE DISTRICT OF LIMPOPO PROVINCE.

By

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DECLARATION

I, Nedzingahe Tsiko Jedidiah, hereby declare that the Mini-dissertation: ***"Knowledge, Attitude and Practices of Adolescents Regarding Antenatal Care Booking in a Vhembe District of Limpopo Province."*** submitted by me, has not been submitted previously for a degree at this or any other university, that it is my own work in design and in execution, and that all reference material contained therein has been duly acknowledged.

Signature:  Date: 06/02/2026

DEDICATION

This mini dissertation is dedicated to my family and my life partner, Munzhedzi Zelda, whose endless love, patience, and encouragement have been my greatest source of strength. Your unwavering belief in me has inspired me to persevere through every challenge.

I also dedicate this work to the teenagers from Thohoyandou Block G, whose participation and openness gave this research its purpose and meaning. Your voices and experiences are the heart of this study.

To my supervisor, Dr. A.G. Mudau, and my mentor, Mr. Ronald Mashamba, I would like to express my gratitude for your invaluable guidance and support throughout this journey.

Above all, I dedicate this work to God Almighty, for His grace, wisdom, and unfailing love that have carried me through to the completion of this research. All glory and honour belong to Him.

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LIST OF ACRONYMS

AIDS: Acquired Immune Deficiency Syndrome

ANC: Antenatal Care

CHV: Community Health Volunteers

DMO: District Medical Officer

FANC: Focus Antenatal Care

HBM: Health Belief Model

HIV: Human Immune Virus

ICPD: Internal Conference Population Development

PHC: Primary Health Care

SPSS: Statistical Package for Social Sciences

UNFPA: United Nations Population Fund

UNICEF: United Nations Children's Fund

WHO: World Health Organisation

ABSTRACT

Adolescent pregnancy is a global public health concern that contributed to maternal mortality. However, little research has explored adolescents' understanding and views on antenatal care (ANC). The Vhembe District faces high rates of late ANC booking, which adversely impacts maternal and child health. This study investigated adolescents' knowledge, attitudes, and practices regarding ANC booking in the Vhembe District of Limpopo Province, offering insights for policy planning. The beneficiaries of this research included healthcare practitioners, adolescent mothers, local communities, and policymakers.

A quantitative, non-experimental design was employed, using a questionnaire survey. Stratified random sampling was applied to select 89 adolescents aged 15–19 years from Thohoyandou Block G. Data were collected using self-administered questionnaires and analysed through descriptive and inferential statistics, including Chi-square tests and logistic regression.

The findings revealed varying levels of knowledge regarding antenatal care (ANC) services among adolescents. More than half of the respondents (approximately 55–60%) demonstrated limited understanding of the importance of early ANC booking and the range of services provided during pregnancy. Only about 40–45% of participants correctly identified the recommended timing for initiating ANC. Attitudes toward ANC were mixed, with around 48–52% of adolescents expressing positive attitudes toward ANC utilisation, while the remainder reported neutral or negative attitudes influenced by stigma, cultural beliefs, fear of disclosure, and mistrust of healthcare providers. In terms of practices, delayed ANC booking was common, with over 60% of respondents reporting booking ANC after the first trimester. Socioeconomic challenges such as poverty, transport difficulties, and limited family support were reported by more than half (≈55%) of the participants as key barriers to timely ANC attendance. Despite these challenges, enabling factors were identified, as approximately 45–50% of respondents indicated that education, family support, and the availability of adolescent-friendly health services could improve ANC utilisation.

Overall, the study highlighted the need for targeted health education, adolescent-responsive healthcare services, and policy interventions to reduce barriers to ANC access. Addressing knowledge gaps, cultural stigma, and systemic challenges could strengthen maternal health outcomes and encourage timely ANC booking among adolescents in the Vhembe District.

Keywords: Antenatal Care; Attitudes, Late booking, knowledge, practices

Table of Contents

Table of figures

CHAPTER ONE: INTRODUCTION OF THE STUDY

1.1. INTRODUCTION

Antenatal care (ANC) refers to the regular medical and nursing check-ups recommended for pregnant women. Its goal is to monitor the health of both the mother and the growing fetus, provide health education, and detect and manage possible difficulties (WHO, 2016). ANC is often available through public and private health institutions, and women are encouraged to arrange their first appointment during the first trimester, preferably before 12 weeks of gestation (National Institute for Health and Care Excellence, 2021). Despite the availability of ANC services, many women in low- and middle-income countries postpone or do not attend their first ANC appointment (Fagbamigbe et al., 2022). Late ANC booking is influenced by a variety of characteristics, including maternal age, education, income, parity, marital status, and distance to health services (Gross et al., 2012; Nyamtema et al.). Adolescents are frequently unaware of the importance of early ANC scheduling and may face additional challenges in accessing these services (Gebrehiwot et al., 2015; Acharya et al., 2019).

Although antenatal care (ANC) services are available, a significant number of women in low- and middle-income countries either delay or fail to attend their initial ANC visit (Fagbamigbe et al., 2022). The timing of ANC initiation is shaped by multiple factors, including maternal age, educational level, household income, parity, marital status, and proximity to healthcare facilities (Gross et al., 2012). Moreover, adolescents often lack awareness of the importance of early ANC attendance and may face additional obstacles in accessing these services (Gebrehiwot et al., 2015; Acharya et al., 2019).

Adolescent pregnancy remains a global public health concern because it is closely associated with both physical and psychological challenges. According to Sedgh (2015), the biological and emotional immaturity of adolescents increases their susceptibility to complications during pregnancy and childbirth. In 2017, approximately 295,000 women worldwide died from pregnancy- and childbirth-related causes, with 94% of these deaths occurring in resource-limited regions (WHO, 2017; Dickson et al., 2020). The Sustainable

Development Goals (SDGs) have set a target to reduce the global maternal mortality ratio to fewer than 70 deaths per 100,000 live births by 2030 (WHO, 2017). Teenage pregnancies significantly elevate the risk of maternal death, as adolescents are more prone to complications such as eclampsia, puerperal endometritis, and systemic infections (Ali et al., 2018). Indeed, pregnancy and childbirth complications remain the leading cause of mortality among adolescent girls aged 15 to 19, with 99% of maternal deaths occurring in developing nations, particularly in sub-Saharan Africa (Banke et al., 2017).

Several studies have documented the challenges adolescents face with ANC. For instance, Acharya et al. (2019) found that adolescents in Nepal had poorer knowledge of ANC compared to older women. Similarly, Gebrehiwot et al. (2015) reported that adolescents in Ethiopia were less likely to book early for ANC compared to older women. Understanding adolescents' knowledge, attitudes, and practices regarding ANC is crucial for identifying barriers and improving maternal health outcomes. The 2019 South African Maternity Care Guidelines emphasise that ANC aims to achieve the best pregnancy outcomes by assessing pregnancy risks and screening for related issues. Early ANC booking is essential to reduce maternal and child mortality and morbidity. However, many women in low- and middle-income countries, including teenagers, schedule their ANC appointments too late or fail to attend them. This late booking has adverse effects on both mothers and infants (Department of Health, 2017). Socio-cultural factors may contribute to the high rate of late ANC booking among adolescents.

In the Vhembe District, a largely rural region where many families depend on social and child support grants (District Health Plan, 2016–2017), early antenatal care (ANC) initiation is vital. Early booking allows pregnant women to access nutritional supplements in time, supporting maternal health and the healthy development of the fetus (Sodo et al., 2017). Data from the 2016/2017 DHIS report indicate that 22% of live births in the district were of low birth weight (below 2,500 g), while 68% of expectant mothers scheduled their first ANC visit after 12 weeks of pregnancy. Although ANC services are freely available in all public healthcare facilities in South Africa, many pregnant adolescents remain unaware of the importance of early ANC attendance, resulting in persistently high rates

of delayed booking (Sharma et al., 2015). To effectively address this challenge, it is crucial to examine adolescents' knowledge, attitudes, and practices concerning ANC attendance. Gaining insight into these factors will help identify key barriers and inform targeted strategies to encourage early ANC utilization among adolescent girls in rural communities such as the Vhembe District (Hilaire et al., 2021).

In addition to local contexts, it is beneficial to examine how ANC bookings are managed in other countries and the knowledge, attitudes, and practices of teenagers from different regions regarding ANC. This comparative approach can offer valuable insights for enhancing ANC services and outcomes worldwide.

1.2 PROBLEM STATEMENT

Antenatal care (ANC) is a fundamental component of maternal and child health services, aimed at ensuring the health and well-being of mothers and their babies throughout pregnancy and childbirth (Oshinyemi et al., 2018). Early and adequate ANC attendance is associated with reduced maternal and neonatal morbidity and mortality. In South Africa, however, adolescents remain a particularly vulnerable group with suboptimal utilisation of ANC services. National data indicate that although over 90% of pregnant women attend at least one ANC visit, adolescents are significantly more likely to initiate ANC late or attend fewer than the recommended visits (Nxiweni et al., 2022; Barron et al., 2022).

The Limpopo Province, including the Vhembe District, continues to report high rates of adolescent pregnancy and delayed ANC booking. Statistics from the South African public health sector show that Limpopo is among the provinces with the highest teenage birth rates, estimated at approximately 70–90 births per 1,000 girls aged 15–19 years (Barron et al., 2022). Despite the availability of free ANC services in primary healthcare facilities such as Thohoyandou Block-G, studies conducted in Limpopo reveal that a substantial proportion of pregnant adolescents initiate ANC after 20 weeks of gestation, which is later than the recommended booking period (Mulondo, 2020; Smith et al., 2024).

Evidence suggests that inadequate utilisation of ANC among adolescents is influenced by limited knowledge about the importance and benefits of early ANC attendance,

including early detection of pregnancy-related complications and prevention of adverse outcomes (Whitworth & Cockerill, 2014). Furthermore, socio-cultural factors such as stigma associated with teenage pregnancy, fear of negative attitudes from healthcare providers, and misconceptions surrounding ANC have been identified as major barriers to early booking among adolescents in rural and semi-rural areas of Limpopo (Mulondo & Khoza, 2015; Lebese et al., 2013). Socioeconomic challenges, including poverty and lack of reliable transport, further compound these barriers and contribute to inconsistent ANC attendance (Nxiweni et al., 2022).

Given the persistent high rates of adolescent pregnancy and delayed ANC booking in the Vhembe District, there is a need to explore adolescents' knowledge, attitudes, and practices toward ANC services. Understanding these factors within the context of Thohoyandou Block-G is essential for informing targeted interventions aimed at improving early ANC booking and ultimately enhancing maternal and neonatal health outcomes.

1.3 RATIONALE OF THE STUDY

Adolescent pregnancy remains a significant public health concern, particularly in low- and middle-income countries such as South Africa, where teenage mothers face increased risks of maternal and neonatal complications. Timely antenatal care (ANC) booking plays a crucial role in reducing these risks by enabling early detection of complications, providing nutritional support, and enabling access to preventive interventions. However, despite the availability of free ANC services in public health facilities, many adolescents continue to book late or fail to attend altogether.

In rural areas such as the Vhembe District, this challenge is compounded by limited knowledge, cultural beliefs, stigma, and socioeconomic barriers, all of which collectively influence adolescents' decisions about ANC (Nemavhulani, 2021). Existing research in South Africa has largely focused on adult women, leaving a critical gap in understanding adolescents' unique experiences and practices. Addressing this gap is important because adolescents represent a vulnerable group whose reproductive health outcomes significantly affect both their own futures and those of their children.

This study is therefore important as it provides insight into adolescents' knowledge, attitudes, and practices regarding ANC booking in a rural South African context. The findings will not only contribute to the body of knowledge but also inform health education programs, community interventions, and policy strategies to promote early ANC utilisation among adolescents. By highlighting barriers and identifying enabling factors, the study can guide the design of adolescent-friendly healthcare services that support improved maternal and child health outcomes.

1.4 SIGNIFICANCE OF THE STUDY

Antenatal care (ANC) plays a vital role in safeguarding the health of both mothers and their children; however, many adolescents in Thohoyandou Block-G within the Vhembe District continue to underutilize these essential services. This study is important because it seeks to examine the knowledge, attitudes, and practices that influence ANC booking among adolescents in this area. By exploring these underlying factors, the research will provide valuable insights into the reasons behind delayed or missed ANC visits and offer practical recommendations to enhance adolescent engagement with maternal healthcare services.

The outcomes of this study are expected to benefit adolescent mothers by identifying existing knowledge gaps and misconceptions that may discourage them from seeking timely ANC. Many young expectant mothers may not fully understand the significance of early ANC attendance or its health benefits for both the mother and the unborn child. By addressing these issues, the study aims to support the development of targeted health education initiatives that equip adolescents with accurate information and encourage proactive healthcare decisions throughout pregnancy.

Healthcare professionals will also benefit from the study's findings, which will highlight the specific barriers and challenges adolescents encounter when seeking ANC services. This understanding can guide the development of adolescent-friendly healthcare approaches that are accessible, respectful, and responsive to young mothers' needs. Likewise, community leaders and educators can apply the study's results to design awareness

campaigns and school-based interventions that emphasize the importance of early ANC booking, while also addressing stigma and misconceptions related to teenage pregnancy.

In addition, policymakers and health authorities will find this research valuable in shaping data-driven maternal health policies tailored to rural communities. The study's insights will help inform strategies aimed at improving ANC accessibility, addressing socio-economic barriers, and strengthening adolescent-focused maternal health programs within existing healthcare frameworks. Finally, families and guardians who play a crucial role in adolescent health decisions will benefit from a better understanding of the difficulties faced by teenage mothers. Promoting open communication and supportive family environments can encourage early ANC attendance and ultimately enhance maternal and child health outcomes in the Thohoyandou Block-G community.

1.5 PURPOSE AND OBJECTIVES OF THE STUDY

1.5.1 Purpose of the study

This study aims to investigate the knowledge, attitudes, and practices of adolescents regarding antenatal care booking in the Vhembe district of Limpopo Province.

1.5.1 Objectives of the study

- To assess the level of knowledge of adolescents regarding ANC booking in, Vhembe district of Limpopo province.
- To determine the attitudes of adolescents regarding ANC booking in, Vhembe district of Limpopo province.
- To assess the perception of adolescents regarding ANC booking in the Vhembe district of Limpopo province.

1.6. DEFINITION OF KEY TERMS

Knowledge:

Knowledge refers to the comprehension and awareness that adolescents have concerning the booking of antenatal care. This includes factual understanding, grasp of the procedures involved, and recognition of the significance and benefits of antenatal care for both expectant mothers and their infants (Zagzebski, 2017). In this study, knowledge refers to what female adolescents know about booking antenatal care, specifically their understanding of the process.

Attitude:

Attitude is a settled way of thinking or feeling about something (Orgaz et al., 2018). In this study, attitude refers to how adolescents are inclined to perceive or assess antenatal care booking. This encompasses their emotions, convictions, viewpoints, and behavioural inclinations concerning the notion of antenatal care, including whether they view it positively, negatively, or with neutrality.

Practices:

Practice refers to the actual actions, behaviours, and routines individuals carry out in relation to a specific activity or service (Pearce, 2020). In this study, adolescents' practices relate to the concrete behaviours and decisions they exhibit regarding antenatal care (ANC) booking. This includes whether and when adolescents book for ANC, the gestational age at first booking, consistency in attending scheduled ANC visits, and adherence to recommended ANC guidelines. Adolescents' ANC booking practices are influenced by personal knowledge, attitudes, social support, cultural norms, and socioeconomic factors, and they provide measurable evidence of how adolescents utilise available ANC services in the Thohoyandou Block-G area.

Adolescents:

Adolescents are typically aged 10 to 19, representing individuals in the transitional phase from childhood to adulthood (Meherali, 2021). Within this study, adolescents are the specific group being investigated to understand their knowledge, attitudes, and practices concerning antenatal care booking.

Antenatal Care Booking:

Antenatal care booking, also called prenatal care booking, refers to the initiation of regular medical appointments and the assistance expectant mothers seek from healthcare providers in the early phases of pregnancy (Raspa et al., 2015). In this study, antenatal care booking involves scheduling appointments, undergoing medical evaluations, screenings, and receiving health recommendations aimed at enhancing the health of both the mother and the developing baby.

1.7 CHAPTER SUMMARY

This chapter introduced the study by providing the background and context of adolescent pregnancy and antenatal care booking, with particular focus on the Vhembe District of Limpopo Province. The chapter outlined the global, national, and local significance of antenatal care, highlighting the persistent challenge of late ANC booking among adolescents despite the availability of free maternal health services in South Africa. The problem statement clearly identified gaps in adolescents' knowledge, attitudes, and practices regarding ANC booking and emphasised the associated risks to maternal and neonatal health outcomes.

The chapter further presented the rationale and significance of the study, demonstrating its relevance to adolescent mothers, healthcare practitioners, communities, and policymakers. The purpose and objectives of the study were clearly stated, providing direction for the investigation. Key concepts central to the study were defined to ensure conceptual clarity and consistency. Overall, this chapter laid a solid foundation for the study by justifying the need to explore adolescents' knowledge, attitudes, and practices regarding antenatal care booking and by setting the framework for the subsequent chapters.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

The preceding chapter provided the background to the study, outlined the research problem, and stated the objectives guiding this investigation. In contrast, this chapter provides a review of existing literature on adolescents' knowledge, attitudes, and practices regarding antenatal care (ANC) booking. This topic is critically important as early ANC initiation has been globally recognised as a cornerstone of maternal and child health. Adolescents, however, face unique challenges in accessing such care, ranging from limited awareness to structural and sociocultural barriers.

A literature review is a methodical approach to collecting and synthesising scholarly insights on a particular subject, highlighting key findings, debates, and gaps in knowledge (Brink, Van der Walt, & Van Rensburg, 2016). As noted by De Vos et al. (2018), literature reviews are integral to locating, evaluating, and interpreting relevant research in a structured manner, enabling researchers to form evidence-based conclusions. This chapter adopts that purpose by systematically engaging with global, regional, and national studies that explore the interplay between adolescents' knowledge, attitudes, and practices and their ANC utilisation behaviours.

2.2 ADOLESCENT PREGNANCY

Teenage pregnancy is a global phenomenon, though its scale and effects differ significantly across various nations and regions (WHO,2016). Socioeconomic and cultural factors heavily influence these differences. For example, in some communities, adolescent girls are compelled into early marriages and are expected to start families at a young age, whereas in others, out-of-wedlock pregnancies among teenagers are more prevalent (Bonso, 2015). Adolescents often face pregnancy-related health complications, which have been identified as the second leading cause of death among girls aged 15 to 19 in sub-Saharan Africa (Ziblim, Yindana & Mohammed, 2018). In many low- and middle-income countries, infants born to mothers under 20 are at a higher risk of stillbirth or

neonatal death, with risk increasing for younger mothers. Babies born to adolescent mothers also have a higher likelihood of being underweight at birth, potentially leading to long-term health issues (WHO, 2005; Bonso, 2015). The incidence of teenage pregnancy is notably higher in impoverished, less educated, and rural populations (Bonso, 2015).

A contributing factor is the lack of sexual education in many regions, which leaves some girls unaware of how to prevent pregnancy. Additionally, feelings of shame, financial barriers, or legal restrictions may prevent them from accessing contraceptive services. Even when such services are accessible, sexually active teenagers are generally less likely to use them compared to adults (WHO, 2016).

Focused Antenatal Care (FANC) plays a critical role in safeguarding the health of both adolescent mothers and their babies. Ideally, FANC should commence in the first trimester to ensure optimal outcomes (WHO, 2016). Regular antenatal care is particularly vital for teenage pregnancies due to the high risk of complications they face (James, Van Rooyen & Strumpher, 2010; WHO/UNFPA, 2016). Research by Mgbekem et al. (2020) emphasises that FANC facilitates consistent monitoring of maternal health, enables early detection and management of potential issues, and prepares young mothers for childbirth through education and support, enhancing both maternal and neonatal outcomes.

For many pregnant teenagers, antenatal care offers the first thorough health evaluation, providing a platform to educate them about recognising signs of obstetric complications, which they may not be familiar with due to their age and inexperience (Nsemo & Offiong, 2016). ANC services also include essential interventions such as immunisations, malaria prevention, and treatment for anaemia and sexually transmitted infections, including HIV/AIDS. Additionally, young mothers receive guidance on birth spacing, family planning, and the benefits of institutional delivery, all of which contribute to safer pregnancies and deliveries (Bonso, 2015).

2.3 UNDERSTANDING ADOLESCENCE AND REPRODUCTIVE HEALTH

Adolescence, defined by the World Health Organisation as the age range between 10 and 19 years, represents a transformative phase of life marked by physical, emotional, and social changes that shape future adulthood (WHO, 2023). It is during this period that

individuals develop secondary sexual characteristics, an increase in cognitive capacity, and begin to form their identity. However, it is also a time when many young people, particularly girls in low- and middle-income countries (LMICs), face vulnerabilities related to reproductive health. The lack of age-appropriate sexual and reproductive health (SRH) education contributes to poor decision-making and low awareness about the implications of early pregnancy, making adolescents more susceptible to complications during pregnancy and childbirth (Darroch et al., 2016).

Globally, adolescent pregnancies remain a significant public health concern. According to The World Bank (2021), approximately 12 million births occur each year among girls aged 15–19, despite global adolescent fertility rates falling from 86 to 42 births per 1,000 over the past six decades. In many settings, adolescents enter motherhood with limited biological readiness and minimal access to quality maternal health services. Research shows that adolescents especially those under 15 face a much higher risk of maternal mortality due to complications such as obstructed labour, eclampsia, and severe infections (World Health Organisation, 2023). These outcomes highlight the urgent need for targeted maternal care strategies tailored to this age group.

Furthermore, adolescents often lack autonomy in health-related decision-making, and their reproductive choices are heavily influenced by sociocultural norms, family expectations, and systemic barriers to care. Many adolescents, particularly in sub-Saharan Africa and South Asia, report limited knowledge about the importance of early antenatal care (ANC), often mistaking pregnancy symptoms or delaying disclosure due to fear of stigma (Darroch et al., 2016). Early pregnancy in this age group is rarely accompanied by adequate healthcare-seeking behaviour, which further endangers both maternal and neonatal outcomes. Recognising adolescence as a unique stage with specific health needs is critical for the development of responsive health systems and policies aimed at reducing adolescent maternal morbidity and mortality (Abute et al., 2022).

2.4 KNOWLEDGE OF ADOLESCENTS REGARDING ANTENATAL CARE

Adolescence, spanning the ages of 10 to 19, is a pivotal stage of human growth that plays a crucial role in shaping an individual's future. This developmental period holds immense significance as it lays the foundation for adulthood. Globally, adolescents make up approximately 20% to 25% of the total population (Meherali et al., 2021). It is during this phase that a young person transitions from childhood to adult maturity. This transition is marked by the onset of puberty and the development of secondary sexual traits, which often lead to curiosity about bodily changes and reproductive health (Shoaib-Bin-Habib et al., 2024).

However, in many cultures, including in countries like Bangladesh, societal traditions, norms, and beliefs often suppress adolescents' natural curiosity. The lack of comprehensive sex education in schools prevents them from openly discussing reproductive health topics with peers or educators (Ahmmed, Chowdhury & Helal, 2022). Social taboos, shame, and fear further inhibit them from seeking reliable information, even from their parents, particularly mothers. As a result, many young girls resort to unreliable sources for knowledge about topics like pregnancy and childbirth, leading to widespread misinformation (Seager et al., 2024).

In Bangladesh, adolescents constitute about 23% of the population (Rashid, Khan Chowdhury & Rahman, 2025). Despite increased access to schooling for girls, most educational materials still lack adequate content on crucial health topics such as pregnancy, antenatal and postnatal care, and lactation (Meherali et al., 2024). This leaves many adolescent girls with an incomplete or incorrect understanding of reproductive health.

Adolescent girls represent the next generation of mothers, and as such, they must be equipped with accurate knowledge about reproductive health. Proper understanding of antenatal care, childbirth, and postpartum health not only benefits them personally but also ensures healthier outcomes for future generations (Hossain et al., 2024).

Each year, around 17 million adolescent girls give birth globally, representing about 11% of all births, with 95% of these occurring in low- and middle-income countries. Alarmingly,

2.5 million of these births involve girls under the age of 16 in developing regions (Alam, Mollah & Naomi, 2023). Additionally, approximately 3.9 million girls aged 15 to 19 undergo unsafe abortions annually. Young mothers face greater health risks, such as eclampsia, puerperal infections, and systemic complications, compared to women aged 20 to 24 (Rashid, Khan Chowdhury & Rahman, 2025). In regions with high maternal and infant mortality rates, like Bangladesh, adolescent pregnancies significantly contribute to these statistics (Seager et al., 2024). Globally, pregnancy-related complications are the leading cause of death for girls aged 15 to 19, particularly in low- and middle-income countries, which account for 99% of maternal deaths among women aged 15 to 49 (Meherali et al., 2021).

2.5 ATTITUDES TOWARDS EARLY ANTENATAL CARE

Attitudes play a critical role in shaping health-seeking behaviour and strongly influence whether pregnant adolescents initiate antenatal care early. Studies conducted in low- and middle-income countries show that adolescents' attitudes towards early ANC are often characterised by fear, uncertainty, and low perceived need for preventive care (Ebonwu et al., 2018).

Several studies indicate that adolescents who perceive pregnancy as a normal life event rather than a medical condition requiring monitoring are less likely to book early for ANC (Okedo-Alex et al., 2019). Negative perceptions of health facilities, including expectations of long waiting times and unfriendly healthcare workers, further contribute to delayed ANC initiation among adolescents (Ebonwu et al., 2018).

Stigma associated with adolescent pregnancy has been widely reported as a significant attitudinal barrier to early ANC attendance. Adolescents often delay booking due to fear of judgment, embarrassment, and negative treatment by healthcare providers and community members (Govender et al., 2018). In the South African context, anticipated discrimination and previous negative experiences within healthcare facilities have been shown to foster avoidance behaviours, resulting in late ANC booking (Govender et al., 2018).

Conversely, positive attitudes towards early antenatal care have been associated with improved utilisation of maternal health services. Adolescents who believe that early ANC promotes maternal and fetal health are more likely to initiate care within the first trimester (Sewpaul et al., 2022). Exposure to reproductive health education, peer support, and adolescent-friendly services has been found to improve adolescents' attitudes and encourage timely ANC attendance (Sewpaul et al., 2022)

2.6 PSYCHOSOCIAL FACTORS INFLUENCING PREGNANT ADOLESCENTS' INTENTION AND SELF-EFFICACY TO ATTEND ANTENATAL CARE

Since adolescents and young women are more likely to experience pregnancy-related problems and have higher rates of maternal and infant mortality, antenatal care (ANC) is especially crucial for them (Azevedo et al., 2017). Therefore, it is essential that issues be detected or avoided early in adolescence or young women's pregnancies and that the required monitoring be maintained with early and regular ANC. Pregnancy outcomes and prenatal care have been linked in earlier research (Govender et al., 2018).

Basic antenatal care (BANC) services are provided free of charge in South Africa's public health facilities. According to the South African Guidelines for Maternity Care, women are advised to initiate antenatal care (ANC) within their first trimester (Sewpaul et al., 2022). While over 93% of pregnant women in the country receive some form of ANC, only 47% begin their visits during the first trimester (National Department of Health, 2019). Moreover, 32% delay their first ANC appointment until after 20 weeks of pregnancy (Sewpaul et al., 2022), and just 75% of women adhere to the World Health Organization's (WHO) recommended schedule.

In Sub-Saharan Africa, adolescents are less likely than older women to start ANC early or attend appointments consistently (Ebonwu et al., 2018). Unintended pregnancies common among teenagers further decrease the likelihood of seeking adequate maternal healthcare (Sewpaul et al., 2022). A national household survey revealed that 77% of pregnant South African adolescents attended the minimum recommended four ANC visits, though their attendance rate remains lower than that of adult women.

Several factors contribute to delayed or infrequent ANC attendance among South African adolescents. Health system-related barriers include negative interactions with healthcare providers, long waiting times, poor facility conditions, and limited quality of health education and support for childbirth and parenting. Individual-level challenges involve a lack of knowledge about the importance of early ANC, insufficient partner or family support, societal stigma surrounding premarital pregnancy, financial hardships, long travel distances, HIV-related stigma, and fear of pregnancy disclosure (Govender et al., 2018).

Studies from other countries have identified additional influences such as parity, cultural norms, educational attainment, urban–rural differences, and limited decision-making autonomy in healthcare (Ebonwu et al., 2018). The Reasoned Action Approach (RAA) and the Theory of Planned Behaviour (De Vries, 2017) offer theoretical frameworks to explain and address these behavioural patterns. According to the RAA, behavioural intention is the strongest predictor of action. This intention is shaped by perceived behavioural control (self-efficacy), attitudes toward the behaviour, and subjective norms. Further determinants such as individual beliefs, knowledge, and perceived risks—also influence whether adolescents attend prenatal appointments as recommended.

2.7 BARRIERS TO PREGNANT ADOLESCENTS' ACCESS TO MATERNAL HEALTH CARE

South Africa experiences a notably high rate of adolescent births, with approximately 49 out of every 1,000 births occurring among teenagers (The World Bank, 2015). Among adolescent girls, maternal health complications rank as the second most frequent cause of mortality. This age group is particularly vulnerable to pregnancy and childbirth-related risks, including heightened chances of complications and fatal outcomes compared to older women (WHO, 2023). Moreover, early pregnancies during adolescence are linked to a rise in HIV infections. Young mothers often exhibit slower adoption of antenatal antiretroviral treatment (ART) and show increased rates of HIV transmission to their infants. They also encounter significant obstacles in accessing maternal healthcare services, which leads to missed opportunities for HIV screening, treatment, and timely identification of pregnancy-related issues. Promoting early antenatal care (ANC) among

pregnant adolescents is therefore essential to minimise both maternal health risks and fatalities (Erasmus et al., 2020).

In the South African context, adolescent pregnancy is frequently portrayed negatively, often evoking an image of a disadvantaged young girl whose pregnancy disrupts her future and impedes broader community and national development (Macleod & Feltham-King, 2019). Discussions around teen pregnancy often frame it in terms of deviance, irresponsibility, and social disgrace (Erasmus et al., 2020). This dominant narrative, deeply rooted in gender norms, is being increasingly contested by academics, activists, and pregnant teenagers themselves, who aim to provide alternative perspectives that acknowledge the realities of teen pregnancy without resorting to moral judgment (Macleod & Feltham-King, 2019). This paper aligns with a global growing movement towards replacing punitive rhetoric with more empathetic and supportive language when discussing adolescent pregnancy.

Although the legal framework in South Africa supports adolescents' sexual and reproductive health (SRH) rights, including free access to maternal care in public facilities and policies that protect pregnant learners from educational exclusion, multiple challenges persist in accessing these services (Macleod & Feltham-King, 2019). Teenagers who become pregnant frequently encounter hostility, familial rejection, and strained relationships with caregivers (Hill et al., 2020). Fear of revealing their pregnancy to parents often contributes to delays in seeking antenatal care. Moreover, pregnant teenagers may face judgmental attitudes and mistreatment from healthcare personnel and educators, which can further discourage them from seeking necessary services. These attitudes, often intended to curb teenage sexual activity, are reflections of entrenched patriarchal ideologies that stigmatise certain sexual and reproductive behaviours based on cultural and socio-economic norms (Amroussia et al., 2017). Consequently, delayed pregnancy disclosure and care-seeking can result in preventable complications that go unaddressed (Erasmus et al., 2020).

2.8 THE TIMING OF PREGNANCY IN ADOLESCENTS AND AVAILABILITY TO PRENATAL CARE

Although the global adolescent fertility rate has significantly declined from approximately 86 births per 1,000 girls aged 15–19 in 1960 to 42 per 1,000 in 2021, it still translates to about 12 million births each year among adolescent mothers (The World Bank, 2021). Early childbirth, particularly among girls younger than 15, presents severe risks to maternal health and is a key contributor to maternal mortality in this group (NWHO, 2023). According to WHO data, adolescent pregnancies are more likely to result in serious conditions such as eclampsia, puerperal endometritis, and systemic infections than those in slightly older women (World Health Organisation, 2016; Ngene & Moodley, 2020).

In South Africa, the adolescent fertility rate has stagnated since 2000, with 61 births per 1,000 adolescent girls reported in 2021, well above the average of 46 per 1,000 in other low- and middle-income countries (The World Bank, 2021). Higher teenage fertility implies greater demand for antenatal care (ANC) services to manage the health risks for both mother and child. Studies have documented increased rates of mother-to-child HIV transmission among adolescent mothers, who are less likely to undergo HIV testing and can have transmission rates up to three times higher than older mothers (Ramraj et al., 2015). This issue is particularly concerning in South Africa, where approximately one-third of women accessing ANC services are HIV-positive (Shisana et al., 2015).

Teen pregnancies in South Africa are significantly more common among economically disadvantaged populations. Data show that nearly 1 in 5 girls in the poorest income quintile start childbearing in late adolescence, compared to about 1 in 14 from the wealthiest quintile (National Department of Health et al., 2019). The COVID-19 pandemic worsened this trend, with Gauteng province reporting a 60% rise in adolescent pregnancies in 2020 alone (Save the Children, 2021).

Children born to adolescent mothers face heightened risks of adverse birth outcomes, including preterm birth and low birth weight, both of which are associated with increased stunting (Kariathi et al., 2023). Stunting can lead to impaired cognitive function and lower academic performance. Additionally, infants with low birth weight have a higher likelihood of facing poorer socioeconomic conditions in adulthood (Beckmann et al., 2021).

Many of these risks could be reduced through timely and effective ANC. Adequate prenatal care allows early identification and management of maternal complications, benefiting both the neonate and the mother (Geltore et al., 2021). Delayed ANC, regardless of age, is associated with lower infant birth weight, preterm delivery, greater need for neonatal intensive care, and lower Apgar scores. Furthermore, early ANC enables early initiation of antiretroviral therapy in HIV-positive mothers, which is strongly associated with better pregnancy outcomes (Ngene & Moodley).

The World Health Organisation recommends that pregnant individuals attend their first ANC visit during the first trimester (World Health Organisation, 2023). In South Africa, the National Department of Health monitors ANC access at or after 20 weeks' gestation as a measure of timely care. According to recent data, 30.2% of all pregnant women in South Africa accessed ANC after five months of pregnancy (Massyn et al., 2020). A district-specific study revealed that nearly 65% of pregnant adolescents began ANC only after the first trimester (National Department of Health et al., 2019). Despite these figures, there is limited national data on ANC timing specific to adolescents, as the current health information system does not distinguish ANC access data by age group. Although South Africa performs well overall in ANC access, understanding the timeliness of care, especially among adolescents, remains a critical knowledge gap.

2.9 PRACTICES AND SOCIOCULTURAL BELIEFS ABOUT ANTENATAL CARE AMONG ADOLESCENTS

Adolescents' practices of antenatal care (ANC) are shaped by deep-rooted sociocultural beliefs and community narratives around pregnancy and reproductive health (Dunjana, 2020). In many traditional societies, especially in parts of sub-Saharan Africa, discussions around sexual and reproductive health remain taboo, often cloaked in silence and stigma. As a result, adolescents may internalise shame and fear around pregnancy, especially if it occurs outside of marriage. These cultural expectations significantly affect their perception of ANC, leading many to delay or completely avoid care due to anticipated judgment from both health professionals and their communities (Alex-Ojei, 2020).

Religious doctrines and gender norms further complicate adolescents' willingness to seek care (Williams et al., 2017). In some communities, female adolescents are expected to

maintain chastity until marriage, and pregnancy is seen as a violation of moral codes rather than a health event requiring medical support (Coast et al., 2019). This often leads to adolescents hiding their pregnancies or relying on traditional remedies rather than formal ANC services. A study by Alex-Ojei (2020) in Nigeria found that young girls perceived ANC as a service primarily for older or married women, revealing a serious gap in adolescent-inclusive messaging within maternal health programs. The perception that healthcare systems are not designed for their age group further reinforces these attitudes.

Moreover, the role of family dynamics and intergenerational silence about reproductive matters cannot be understated. Many adolescents feel discouraged or fearful of disclosing their pregnancy to parents or guardians, especially mothers, due to anticipated punishment or social disgrace (Coast et al., 2019). This absence of open dialogue at home, coupled with a lack of youth-centred healthcare environments, leaves adolescents with inadequate support systems. Alex-Ojei (2020) emphasised that this cultural silence acts as a barrier to early ANC booking and perpetuates misinformation, often resulting in poor maternal and neonatal health outcomes. Addressing these practices through culturally sensitive education and the provision of adolescent-friendly health services is critical for improving ANC access among this vulnerable group (Jacobs et al., 2023).

2.10 BARRIERS TO TIMELY ANC BOOKING AMONG ADOLESCENTS

Access to timely antenatal care (ANC) is essential for improving maternal and neonatal health outcomes, yet adolescents often face significant delays in initiating care. Studies across sub-Saharan Africa have highlighted a range of interlinked individual and systemic barriers that hinder timely ANC booking. Alem et al. (2022) observed that many adolescents do not attend ANC within the first trimester, as recommended by the World Health Organisation, due to inadequate knowledge about the importance of early booking. The study, based on a multi-country analysis in sub-Saharan Africa, found that both awareness and understanding of ANC's role in preventing pregnancy complications were markedly lower among younger expectant mothers compared to older women (Okedo-Alex et al., 2019).

Financial constraints also play a critical role in delayed ANC initiation. Adolescents—many of whom are still financially dependent—often struggle with the cost of

transportation, clinic visits, and even informal payments in health facilities. Alem et al. (2022) emphasise that in households with limited resources, seeking care may not be prioritised for adolescent girls, especially if the pregnancy is unplanned or stigmatised. Additionally, the costs extend beyond money: fear of judgment by healthcare workers and peers, or anxiety about parental discovery, contribute to adolescents avoiding or delaying their first ANC visit.

Health system-related challenges compound the issue. The unavailability of adolescent-specific or youth-friendly services results in adolescents feeling unwelcome in ANC clinics. Alem et al. (2022) point out that many clinics in sub-Saharan Africa operate under assumptions geared toward older, married women, which marginalises younger patients. When adolescents do seek care, negative attitudes from health professionals—such as condescending language or moralistic judgment—further discourage them from returning for follow-up care or timely follow-ups. A lack of privacy or confidentiality in these environments also contributes to the perception that ANC services are not safe or appropriate for adolescents (Pandey et al., 2019).

Furthermore, sociocultural dynamics such as stigma and gender inequality exacerbate these delays (Sesay, 2024). In many settings, adolescent pregnancy is still viewed as a moral failure rather than a health priority, which influences both family support and community engagement. Alem et al. (2022) argue that the interplay between social stigma and poor health system responsiveness creates a cycle where adolescents avoid formal care, increasing the risk of complications. Effective strategies to overcome these barriers include the development of adolescent-friendly health policies, training of healthcare workers in nonjudgmental care provision, and strengthening community-level education around the benefits of early ANC access for all women—regardless of age or marital status (Nyaga, 2023).

2.11 FACILITATORS OF ANTENATAL CARE UTILIZATION AMONG ADOLESCENTS

While numerous barriers hinder adolescents from accessing antenatal care (ANC) early in pregnancy, several enabling factors have been identified that promote timely

engagement with these essential services. Among the most critical facilitators is the availability of youth-friendly healthcare environments. When adolescents feel safe, respected, and supported by healthcare providers, they are more likely to initiate ANC in the first trimester. Health professionals who are trained in adolescent-centred communication play a key role in creating welcoming spaces where young pregnant women are not judged but rather empowered to make informed decisions (Sewpaul et al., 2023).

Community-based interventions also play a significant role in increasing adolescent ANC uptake. Health education programs delivered through schools, local clinics, and peer groups have proven effective in raising awareness about the benefits of early ANC. Peer support groups, in particular, provide safe platforms for adolescents to share experiences and build confidence in accessing health services. These programs are most effective when they are inclusive, culturally sensitive, and involve both male and female adolescents, helping to break down gender norms that often discourage young girls from seeking care (Mekonnen et al., 2019).

In addition, family and caregiver support has been highlighted as a key determinant in ANC utilisation. Adolescents who receive emotional and practical support from parents or guardians are more likely to overcome initial hesitation and attend early ANC appointments. When families are engaged in discussions about reproductive health, they serve as a crucial source of guidance, transportation, and financial backing. Evidence from sub-Saharan Africa shows that family involvement significantly reduces stigma and improves adolescents' confidence in navigating the healthcare system (Galadima et al., 2021).

Technological solutions, particularly mobile health (mHealth) platforms, have also shown promise in facilitating adolescent access to ANC. In South Africa, the MomConnect program a government-backed text-based reminder system has demonstrated positive results in improving ANC attendance among young pregnant women. The platform provides reliable health information and reminders for appointments, offering a private, nonjudgmental resource accessible to even low-literacy populations (Sewpaul et al.,

2023). Such innovations illustrate the potential of scalable digital interventions in bridging knowledge gaps and overcoming access barriers for adolescent girls.

2.12 CHAPTER SUMMARY

This chapter has reviewed scholarly evidence on the multi-dimensional factors influencing adolescent engagement with antenatal care services, particularly their knowledge, attitudes, and practices surrounding ANC booking. The findings reveal that while most adolescents acknowledge the importance of maternal health, their understanding of ANC timing and purpose is often limited due to inadequate reproductive health education and widespread misinformation. Attitudes toward ANC are shaped by stigma, fear, and cultural norms, which frequently deter adolescents from seeking timely care. Moreover, systemic barriers such as unsupportive health facilities, provider bias, and financial hardships further exacerbate delayed or missed ANC opportunities among teenage mothers. However, several enabling factors have also emerged. These include family support, community outreach, mobile health technologies like MomConnect, and the development of adolescent-friendly health services. Interventions tailored to the unique psychosocial and developmental needs of adolescents show promise in improving ANC uptake. Addressing both demand- and supply-side barriers is crucial in ensuring that pregnant adolescents receive the early and adequate care they require for healthy pregnancy outcomes. The subsequent chapter will present the research methodology used to investigate these dynamics in the context of the current study.

CHAPTER THREE: METHODOLOGY OF THE STUDY

3.1 INTRODUCTION

This chapter outlines the research methodology employed to investigate adolescents' knowledge, attitudes, and practices regarding antenatal care (ANC) booking in the Vhembe District of Limpopo Province. The purpose of this chapter is to describe and justify the methodological approaches used to ensure that the study objectives are addressed in a systematic, valid, and reliable manner.

The chapter presents the research approach and design adopted for the study, followed by a description of the study area and target population. It further explains the sampling method and sample size determination, data collection instruments, and procedures used to collect the data. In addition, the chapter details the data management and analysis techniques applied to generate meaningful findings. Measures taken to ensure validity and reliability of the research instrument are also discussed, together with the ethical considerations that guided the conduct of the study.

By clearly outlining the methodological processes, this chapter provides transparency and allows for the replication of the study in similar contexts. The approaches described herein were selected to ensure that the data collected accurately reflect adolescents' experiences and perceptions regarding ANC booking and to support the credibility of the study findings.

3.2 RESEARCH METHODOLOGY

Creswell & Creswell (2018) define research methodology simply as the "how" of a research investigation. More specifically, it refers to the methodical procedure through which a researcher designs a study to provide accurate and trustworthy results that address the study's aims, objectives, and research questions.

3.3 STUDY APPROACH

The quantitative technique was employed in this study because it enables the systematic collection and analysis of numerical data, which can then be used to identify patterns, correlations, and trends in adolescents' knowledge, attitudes, and views regarding antenatal care (ANC) booking. This approach is suitable for the study because it enables the researcher to assess knowledge and attitudes systematically, allowing for statistical comparisons and generalizing the findings to a broader teenage population in Thohoyandou Block-G Extension (Creswell & Creswell 2023).

A quantitative approach is particularly suitable for this study because it ensures objectivity and reliability in data collection. By using structured questionnaires or surveys, the study will generate measurable data that can be analysed to determine relationships between different variables, such as socioeconomic factors and ANC utilisation. Additionally, quantitative research minimises researcher bias and allows for a broader scope of data collection, making it ideal for assessing adolescents' knowledge and attitudes within a large population (Polit & Beck, 2017).

3.3 STUDY DESIGN

To investigate adolescents' knowledge, attitudes, and practices regarding the booking of antenatal care in the rural town of Thohoyandou Block-G Extension, Vhembe District, Limpopo Province, this study employed a quantitative, cross-sectional descriptive design. A cross-sectional design is appropriate because it allows data collection at a single point in time, providing a snapshot of adolescents’ knowledge, attitudes, and practices regarding antenatal care booking (Honarvar et al., 2020). This approach is particularly useful in public health research where the objective is to understand patterns and associations rather than establish causality.

A descriptive design has been chosen because the study aims to systematically describe and analyse the existing levels of awareness, attitudes, and practices among adolescents in the study area. This method is well-suited for studies that do not involve intervention but rather seek to provide a detailed account of participants' experiences and beliefs (Creswell & Creswell, 2018). Given that the study does not manipulate variables or test

interventions, a non-experimental approach remains appropriate. However, the justification for using a cross-sectional descriptive design over other methods is that it allows efficient collection of data from a large population, making it suitable for understanding the factors influencing ANC booking among adolescents in this setting. By employing this design, the study will provide valuable insights that can inform health interventions, policy-making, and future research aimed at improving ANC utilisation among adolescents in Thohoyandou Block-G Extension.

3.4 STUDY AREA.

This study was conducted in Thohoyandou Block G, a residential area within Thohoyandou, a town in the Vhembe District of Limpopo Province, South Africa (Figure 3.1). According to Statistics South Africa (StatsSA, 2022), Thohoyandou has a population of approximately 69,453 residents, with a notable percentage of adolescent pregnancies reported in Block G. This makes it a relevant study site for investigating adolescents' knowledge, attitudes, and practices regarding antenatal care (ANC) booking.

Block G is a densely populated urban residential area with access to primary healthcare clinics, including the Block G Clinic and Muledane Clinic, which provide antenatal care services. However, despite the availability of these services, many adolescents in the area still face challenges in accessing and utilising ANC. The presence of high adolescent pregnancy rates in the area highlights the need for further exploration of factors influencing ANC booking among this group.

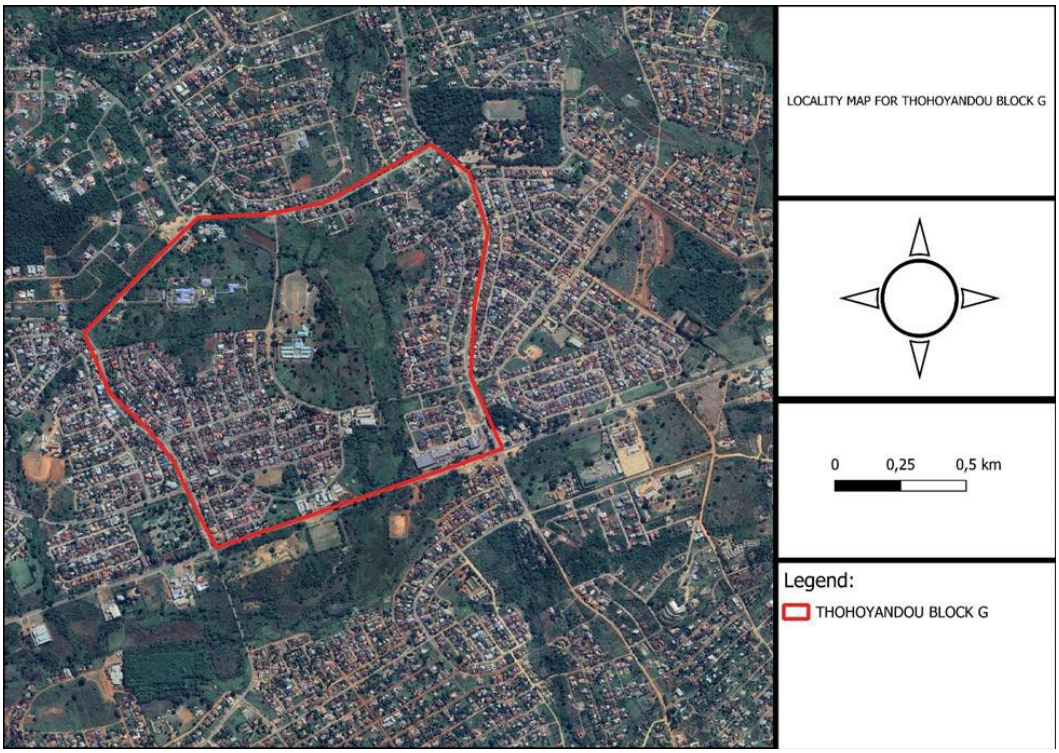

Figure 3.1: Map of Thohoyandou block G (Google Earth,2024)

The selection of Thohoyandou Block G as the study area is justified based on its representative population of adolescents, the accessibility of healthcare services, and the existing challenges related to ANC utilisation. By conducting the study in this setting, the researcher aims to gain insights into the barriers and facilitators affecting adolescents' decisions to seek timely antenatal care, ultimately contributing to improved maternal and child health interventions in the region.

3.5. THE STUDY POPULATION

The study population consisted of adolescents aged 15 to 19 years residing in Thohoyandou Block G, selected based on their knowledge, attitudes, and practices regarding antenatal care (ANC) services. This study included only female adolescents, as their perspectives were considered important for understanding factors influencing ANC booking.

The target population was the total number of adolescents aged 15 to 19 years living in Thohoyandou Block G, estimated at 827 out of the total 2,636 residents in the area (StatsSA, 2022). The study aimed to analyse the knowledge, attitudes, and practices of a selected sample of this population to gain insights that could be generalised to the broader adolescent community in Thohoyandou Block G (Willie, 2022). By focusing on this specific age group, the study sought to provide relevant findings that could inform interventions to improve ANC awareness and utilisation among adolescents in the area**.**

3.6. SAMPLING AND SAMPLE SIZE

Creswell (2018) defines a sample as a smaller segment of a larger group chosen by the researcher to take part in the research project. Sampling is the process by which researchers select a representative sample of a population to collect data on a phenomenon. The "sampling method" refers to the strategy for selecting study participants.

3.6.1. Sampling

A stratified random sampling strategy was utilized in this study to provide a representative sample of teenagers from Thohoyandou Block G. Stratified random sampling was acceptable since it separated the target population into appropriate subgroups (strata) based on certain criteria, ensuring that diverse groups within the teenage population were fairly represented (Suri, 2011).

In this study, the population of female adolescents was stratified according to age groups (15–19 years) to achieve an equitable representation of viewpoints across different age categories (Table 3.1). Following stratification, participants were randomly selected from each subgroup, ensuring that every eligible adolescent had an equal opportunity to be part of the study. This sampling approach strengthened the validity and generalisability of the results by encompassing a wide range of knowledge, attitudes, and practices related to antenatal care (ANC) booking.

Table 3.1: Planned Stratification and Actual Sample Distribution by Age Group

Age group (years)	Planned age stratum	Participants identified	Final sample included (n)
15	Yes	Not available	0
16	Yes	Not available	0
17	Yes	Available	25
18	Yes	Available	40
19	Yes	Available	24
Total	—	—	**89**

Purposive sampling was not employed in this study since it is a non-probability strategy that selects participants based on predetermined criteria. Instead, the study properly used stratified random sampling to maintain objectivity and eliminate selection bias. Using this method, the study guaranteed a diversified and representative sample that appropriately reflected the overall teenage population in Thohoyandou Block G.

3.6.2. Sample size.

Since the total adolescent population in Thohoyandou Block G is known (N = 827), an appropriate formula, such as Slovin's formula was used to determine the sample size. Given that the margin of error is 10% (0.10), the confidence level should be 90%, not 95%, as a 10% margin of error corresponds to a 90% confidence level (Chaudhry et al., 2022).

Using Slovin's Formula:

$$n=\frac{N}{1+N(e^2)}$$

Where:

n = required sample size

N = total population (827)

e = margin of error (10% or 0.10)

$$n=\frac{827}{1+827(0.1^2)}$$

$$n=\frac{827}{1+8.27}$$

$$n=\frac{827}{9.27}$$

n=89

Thus, the required sample size for this study is 89 adolescents.

3.6.3. Inclusion/ exclusion criteria

Creswell (2018) argues that Inclusion criteria are the characteristics that the subject or element must possess to be part of the target population.

Inclusion criteria included:

- Pregnant adolescents aged 19 years who agree to sign consent forms.
- Pregnant adolescents attending or receiving ANC services at Thohoyandou Health Centre.

The exclusion criteria in this study included:

- Lack of consent: Individuals who do not agree to sign a consent form may be excluded from the study to ensure that all residents have given informed consent.
- Participants who will form part of the pre-test.

3.7. MEASUREMENT INSTRUMENTS

The measurement tool used in this study included a questionnaire survey administered to randomly selected adolescents in Thohoyandou Block G, aged 15-19 (Birmingham & Wilkinson, 2003). Self-administered surveys are a popular method for collecting data because they allow respondents to complete the survey at their convenience, often leading to more thoughtful and accurate responses (De Leeuw, 2008). Questionnaires were distributed to adolescents aged 15-19.

3.7.1. Questionnaire survey

The questionnaire is the most commonly used instrument for collecting research data from study participants. As noted by Aina (2004), it is designed “to obtain the opinions of individuals within a sample or population on issues directly related to the research objectives.” In this study, the researcher developed a structured questionnaire comprising systematically designed questions to gather quantitative data from residents through a survey.

The questionnaire was specifically created to assess adolescents’ knowledge, attitudes, and practices regarding antenatal care (ANC) booking. It consisted mainly of closed-ended questions to ensure comprehensive, quantifiable information was collected. The tool was organized into four key sections: Biographical Information, Knowledge Questions, Attitude Questions, and Perception Questions. To ensure accessibility and inclusivity, the questionnaire was administered in English and translated into Tshivenda and Tsonga for participants who were not proficient in English.

3.8. PRE-TEST

A pre-test was conducted to evaluate the clarity, relevance, and reliability of the questionnaire for implementing the full-scale study. This process helped identify ambiguities, misunderstandings, and inconsistencies in the survey questions and ensured that the data collection tool was well-structured for the target population (Li et al., 2016).

The pre-test sample consisted of 10% of the sample size from Thohoyandou Block G who met the inclusion criteria. These participants were randomly selected to complete the questionnaire under conditions similar to the main study. Their feedback was analysed to assess the effectiveness of the questions, the time required to complete the survey, and any challenges faced in understanding or responding to the items. Based on the insights gained from the pre-test, necessary modifications were made to improve the questionnaire's clarity and effectiveness before the main data collection began.

3.9. VALIDITY AND RELIABILITY

3.9.1. Validity

Validity is a crucial aspect in this study, emphasising the accuracy and appropriateness of the data collected in measuring the intended aspects. As such, this study's focus was on gaining insights into adolescents' knowledge, attitudes, and practices regarding antenatal care booking. In essence, this is quite essential for drawing meaningful conclusions and making valid inferences about the target population, as highlighted by Onwuegbuzie et al. (2006).

- **Content Validity:** In terms of content validity, this study ensured the careful design of questions, items, and instruments, which is essentially imperative to capture key aspects related to antenatal care. These tools are aligned with research objectives and are grounded in existing literature and expert knowledge, as emphasised by Almanasre et al. (2019).
- **Construct Validity:** Further to content validity, the study delved into depth into whether the chosen methods accurately represent the underlying constructs of knowledge, attitudes, and practices. This usually requires a meticulous assessment of whether the selected variables are appropriately measured. In the same breath, researchers must ensure these constructs are well-defined and that the chosen data collection methods effectively capture them, as outlined by Colliver et al. (2012).

- **Criterion Validity:** This study also went deeper by involving a comparison of the collected data with established criteria, such as previous research or expert consensus. Furthermore, alignment with accepted standards in the field of maternal and child health was paramount, as suggested by the literature. As such, the researcher ensured that the data collected met these standards, reinforcing the reliability and relevance of the study's findings in the broader context of maternal and child health.

3.9.2. Reliability

Reliability, on the other hand, refers to the consistency and stability of data over time and across conditions. It ensures that the data collected is dependable and can be trusted to represent the true characteristics of the population under investigation. In this study, the

following methods were employed to achieve reliability, as it is essential to ensure that the results can be replicated and generalised.

- **Internal Consistency**: Internal consistency reliability is often assessed through techniques such as Cronbach's alpha. This involves checking if the items within a scale or questionnaire consistently measure the same underlying construct. In this study, it's important to ensure that items measuring knowledge, attitudes, and practices are internally consistent and reliable.
- **Test-Retest Reliability**: To implement the test-retest reliability assessment, a carefully planned schedule will be devised. Reliability was assessed through a pre-test of the study pilot, and necessary adjustments were made to ensure the consistency and dependability of the questionnaire.

3.10. PLAN FOR DATA COLLECTION.

The data collection process followed a structured approach to ensure the selection of an appropriate and representative sample. The predicted minimum sample size is 89 participants, consisting of adolescents aged 15 to 18 who have attended antenatal care (ANC) visits at Thohoyandou Block G Clinic.

3.10.1. Recruitment Strategy

Participants for this study were recruited in a manner consistent with the stratified random sampling method adopted. Eligible participants were female adolescents aged 15–19 years residing in Thohoyandou Block G who met the inclusion criteria for participation.

Following the identification of the study population, adolescents were first grouped into age-based strata in line with the stratified sampling approach. Recruitment was facilitated through collaboration with healthcare personnel at Thohoyandou Block G Clinic, who assisted in identifying adolescents attending antenatal care services during the data collection period. Lists of potentially eligible participants within each age stratum were compiled without researcher influence to minimise selection bias.

From these lists, participants were randomly selected within each age stratum and invited to participate in the study. All selected adolescents were provided with detailed information about the purpose of the study, the procedures involved, and their rights as participants. Informed consent was obtained from participants aged 18 and 19 years, while both assent from the adolescents and consent from parents or guardians were obtained for participants under the age of 18.

Although the study intended to include adolescents aged 15–19 years, no eligible participants aged 15 or 16 years were identified during recruitment. Consequently, the final sample comprised only adolescents aged 17–19 years. This outcome reflects participant availability and eligibility rather than a deviation from the sampling strategy.

Purposive sampling was not utilised in this study, as participants were not selected based on the researcher's judgement or specific characteristics beyond the predefined inclusion criteria. The use of random selection within age strata ensured objectivity, reduced sampling bias, and enhanced the representativeness of the sample.

3.10.2. Data Collection Process

The primary site for data collection was Thohoyandou Block G, where approximately 1,300 expectant women, including adolescents, visited the clinic annually for ANC checkups. Data were collected using adopted self-administered questionnaires that were distributed to eligible adolescents at the community health centre (CHC). The data collection process lasted two months. Participants required approximately 20 to 30 minutes to complete the questionnaire. The questionnaire was written in English but translated into Venda. The researcher personally administered and collected all completed questionnaires to ensure data consistency and completeness. It took the researcher 2 months to complete data collection.

To ensure data reliability, a pre-test study was conducted before full data collection to refine the questionnaire and assess its effectiveness. For adolescent participants who attended antenatal care unaccompanied, arrangements were made to obtain parental or guardian consent through follow-up procedures. Information sheets and consent forms

were provided to the adolescents to take home, and participation proceeded only after the signed parental or guardian consent forms were returned. No adolescent under the age of 18 years was allowed to participate in the study without documented parental or guardian consent.

Participants aged 18 and 19 years were legally able to provide informed consent independently and therefore did not require parental or guardian consent. These measures ensured that ethical standards related to voluntary participation, informed consent, and the protection of minors were strictly upheld throughout the study.

This approach ensured comprehensive representation of adolescents' knowledge, attitudes, and practices regarding ANC booking, addressing concerns about recruitment, the sampling strategy, and the data collection methodology.

3.11. PLAN FOR DATA MANAGEMENT AND ANALYSIS

The data management process involved coding and categorising variables to ensure efficient organisation, manipulation, and exploration of the dataset (Abbott, 2016). To maintain data integrity, quality checks and validation procedures were implemented to detect and correct any inconsistencies or errors. Data were securely stored in Microsoft Excel, where they were cleaned and prepared for statistical analysis.

The study employed Microsoft Excel and the Statistical Package for the Social Sciences (SPSS) version 30 for data analysis. At the univariate level, descriptive statistics such as frequencies, percentages, and graphical representations were used to summarise the dataset (Abbott, 2016). At the multivariable level, binary logistic regression was conducted to assess factors influencing adolescents' knowledge, attitudes, and practices regarding ANC booking. The Chi-square test was used to examine associations between categorical variables, while logistic regression was used to determine predictors of ANC booking behaviour.

By utilising a combination of descriptive and inferential statistical techniques, this study provided comprehensive insights into adolescent knowledge, attitudes, and practices of ANC booking. The findings contributed to evidence-based decision-making and potential interventions aimed at improving maternal healthcare services.

3.12. ETHICAL CONSIDERATIONS

Polit and Beck (2014) describe ethics as a set of moral ideals concerned with how closely research techniques align with the study's legal and social, and professional commitments

3.12.1 Permission to Conduct the Study

Prior to the commencement of the study, formal ethical clearance (FHS/25/PH/02/0204) was obtained from the Research Ethics Committee of the University of Venda. The committee thoroughly evaluated the research proposal to ensure compliance with established ethical principles, such as informed consent, anonymity, confidentiality, and the assurance of no harm to participants (Klykken, 2022). All necessary ethical safeguards were duly implemented.

Furthermore, authorization was sought from key institutional gatekeepers, including the Limpopo Provincial Department of Health and the management of Thohoyandou Block G Clinic, where the research was undertaken. Official request letters detailing the study's purpose, methodology, and ethical considerations were submitted to these institutions to obtain their approval and cooperation.

3.12.2 Informed Consent

Participants received comprehensive information about the study, including its purpose, procedures, potential benefits, and possible risks. Prior to participation, all individuals were required to sign an informed consent form. For participants under the age of 18, parental or guardian consent was obtained in conjunction with the adolescent's own assent.

The informed consent document clearly stated that participation was entirely voluntary, affirming each participant's right to decide whether to participate in the research. Explicit permission was obtained from all participants, and they were informed of their right to withdraw from the study at any time without any negative consequences (Ondicho et al., 2016).

3.12.3 Privacy

Privacy in this study was ensured by conducting data collection in a private setting within the Thohoyandou Block G Clinic, thereby preventing unauthorised access to participants' responses. Coded questionnaires were used instead of names to maintain anonymity, and all collected data was securely stored in locked cabinets for physical records and password-protected digital files. Only authorised researchers will have access to the data, and findings will be reported in aggregated form to prevent individual identification. These measures will protect participants' personal information, ensure confidentiality, and promote honest responses.

3.12.4 Anonymity and Confidentiality

To ensure anonymity, participants' identities were not recorded, and coded questionnaires were used instead of personal details. No identifying information was included in any publications, presentations, or reports. To maintain confidentiality, all collected data were securely stored, with physical documents kept in locked cabinets and electronic files password-protected and accessible only to authorised researchers. Additionally, all responses were handled discreetly, and research findings were reported in an aggregated manner to prevent individual identification. These commitments to anonymity and confidentiality were explicitly stated in the informed consent form, ensuring transparency and building trust with participants (Eungoo, 2023).

3.12.5 Protection of Participants from Harm

The primary goal is to protect individuals from physical, emotional, or psychological harm. Participants will be notified of their ability to discontinue participation in the study at any time without penalty. This study eliminated any setting or interaction that could cause

stress or pain, and participants felt safe and comfortable throughout their involvement (McLeod, 2023). Steps were taken to prevent any form of fraud or misrepresentation of the research to participants, thereby fostering trust and transparency.

3.13. PLAN FOR DISSEMINATION AND IMPLEMENTATION OF RESULTS

(a) Once the study was finalized, the report was delivered to the University of Venda library, the Thohoyandou Health Centre, and the Department of Health.

(b) The results will be shared with the Limpopo Department of Health and presented at various workshops.

(c) The findings will be submitted for publication in accredited, peer-reviewed journals.

3.14 CHAPTER SUMMARY

This chapter described the research methodology used to explore adolescents' knowledge, attitudes, and practices of antenatal care (ANC) booking in Thohoyandou Block G, Vhembe District. A quantitative, cross-sectional descriptive design was adopted, enabling the collection and analysis of numerical data that could be generalised to the broader adolescent population.

The study targeted female adolescents aged 15–19 years residing in Thohoyandou Block G, with a total population of 827. Using Slovin's formula, a sample size of 89 participants was calculated. Stratified random sampling was employed to ensure proportional representation among age groups, minimising selection bias and improving generalisability.

Data were gathered through self-administered structured questionnaires that were pre-tested to ensure clarity, reliability, and validity. The instrument collected biographical information and assessed participants' knowledge, attitudes, and practices regarding ANC booking. A pilot study with 10 adolescents was conducted to refine the questionnaire before the main data collection.

Data management involved systematic coding and cleaning. Microsoft Excel was used for data storage and preparation, while SPSS facilitated the analysis. Descriptive statistics, such as frequencies and percentages, were applied at the univariate level, and inferential analyses including Chi-square tests and binary logistic regression were used to identify associations and predictors of ANC booking behaviour.

Ethical principles guided the entire process. Ethical clearance was granted by the University of Venda Research Ethics Committee, and permission was obtained from the Limpopo Department of Health and the management of Thohoyandou Block G Clinic. Participants provided informed consent, with additional consent from parents or guardians for minors. Confidentiality, anonymity, and participant welfare were rigorously upheld.

CHAPTER FOUR: RESULTS INTERPRETATION

4.1 INTRODUCTION

This chapter summarizes and interprets the results of the study named *"Knowledge, Attitude, and Perception of Adolescents Regarding Antenatal Care Booking in Vhembe District of Limpopo Province."* The data were gathered through self-administered, structured questionnaires distributed to adolescents in the study area, yielding 89 valid responses that were collected and analyzed.

The aim of this chapter is to address the research objectives by providing empirical evidence on adolescents' knowledge, attitudes, and views regarding antenatal care (ANC) booking. The first portion investigates the extent to which teenagers are aware of the significance, timeliness, knowledge, and attitudes of ANC booking. The second piece examines their attitudes toward seeking ANC services during pregnancy. The final portion focuses on their practices, including the beliefs and cultural influences that shape their attitudes toward ANC use.

The findings are structured around the study objectives and supported by relevant literature. Tables and figures were used to present the data as needed, to draw relevant conclusions. The interpretation considers both the frequency and patterns of responses, aiming to provide insights that can inform policy and adolescent health initiatives in the Vhembe district.

The primary aim of this chapter is to address the study objectives by providing empirical evidence on adolescents' knowledge, attitudes, and practices concerning antenatal care (ANC) booking. The chapter is structured around the following key focus areas:

- **Knowledge:** Examines adolescents' understanding of the importance, timing, and benefits of ANC booking.
- **Attitudes:** Explores both positive and negative attitudes towards accessing ANC services during pregnancy.

- **Practices:** Investigates personal beliefs, social norms, and cultural factors that influence adolescents' behaviour regarding ANC utilisation.

4.2 RESULTS PRESENTATION AND ANALYSIS

4.2.1 SECTION A: Biographical Information

A total of 89 adolescents participated in the study, offering insights into the knowledge, attitudes, and practices of ANC booking in the Vhembe District of Limpopo Province. The age distribution of respondents ranged from 15 to 20 years. The highest proportion of respondents, 44.9% (n=40), were 18 years old, followed by 26.9% (n=24) who were 19 years old. Respondents aged 20 constituted 20.3% (n=18), while only 7.9% (n=7) were 17 years old (Table 4.1). This indicates that many respondents were older adolescents, likely contributing to a more informed understanding of antenatal care through greater maturity or exposure to health education.

Regarding marital status, most respondents, 56.1% (n=50), reported being single, while a significant proportion, 43.9% (n=39), reported being married. None of the respondents was divorced or widowed (Table 4.1). The presence of a substantial number of married adolescents suggests that many may be at a stage where reproductive health services, such as ANC, are directly relevant to their lived experiences. It also highlights the importance of addressing ANC knowledge and access among both married and unmarried adolescents to ensure inclusive health interventions.

Respondents' educational levels were almost evenly distributed. Approximately 50.6% (n=45) of the respondents were high school learners, while 49.4% (n=44) were enrolled in tertiary institutions. This near-equal representation suggests a balanced perspective across different stages of formal education, which may influence awareness and understanding of antenatal care.

Regarding religion, the majority of respondents (67.4%, n=60) identified as Christians, while 32.6% (n=29) reported adherence to African Traditional Religion. These religious affiliations are important, as spiritual beliefs often shape health-seeking behaviour, including decisions about the timing and utilisation of antenatal services. Understanding

the religious context of the community is, therefore, critical for tailoring effective ANC awareness programs.

All 89 respondents (100%) were Africans, which reflects the demographic makeup of the Vhembe District. This racial homogeneity provides cultural consistency, allowing the study to focus more deeply on factors influencing ANC behaviour within the African adolescent population in this specific context.

Regarding language, the majority of respondents (86.5%, n=77) spoke Tshivenda, while 13.5% (n=12) spoke Xitsonga. These languages are predominantly spoken in the region and are essential for effective health communication. The findings underscore the importance of delivering ANC-related education and services in local languages to enhance understanding, acceptance, and accessibility among adolescents.

Table 4.1: Demographic information of respondents

Variables	**Number**	**Percentage (%)**
Age		
A-15	0	0%
B-16	0	0%
C-17	7	79%
D-18	18	44.9%
E-19	24	26.9%
F-20	40	20.3%
Marital status		
Single	50	56.1%
Married	39	43.9%
Divorced	0	0%
widowed	0	0%
Educational level		

High School	45	50.6%
Tertiary institution	44	49.4%
Religion		
African traditional religion	29	32.6%
Christianity	60	67.4%
Race		
African	89	100%
Languages		
Tshivenda	77	86.5%
Xitsonga	12	13.5%

4.2.2 Section B: The level of knowledge of adolescents regarding ANC booking in the Vhembe district of Limpopo province.

This section presents findings related to the level of knowledge adolescents possess regarding antenatal care (ANC) booking. The statements assessed their understanding of early ANC booking, available services, risks of delayed care, and the role of cultural and socioeconomic factors. Responses were measured using a five-point Likert scale ranging from “Strongly Agree” to “Strongly Disagree.”

The findings indicate that while a portion of respondents believe they are well-informed about the importance of early ANC booking, there is still considerable uncertainty. Specifically, 21 respondents (23.6%) strongly agreed and 19 (21.3%) agreed with this statement, while an equal number (21 or 23.6%) were neutral, and a combined 28 (31.4%) disagreed or strongly disagreed, reflecting inconsistent levels of awareness.

Knowledge of services provided during antenatal visits appears to be low overall. Only 10 respondents (11.2%) agreed and 21 (23.6%) strongly agreed that they were aware of such services, while a combined 43 respondents (48.3%) disagreed or strongly disagreed, indicating a general lack of exposure to or understanding of ANC content.

Awareness of risks associated with delayed or infrequent ANC visits was somewhat better, with 22 respondents (24.7%) strongly agreeing and 15 (16.9%) agreeing. Still, 33

respondents (37.1%) either disagreed or strongly disagreed, showing that more than a third may not grasp the potential consequences of late ANC initiation.

A total of 35 respondents (39.3%) agreed or strongly agreed that these factors impact their ability to attend ANC, while 38 (42.7%) disagreed or strongly disagreed, showing a nearly even split in experiences of socioeconomic barriers.

Table 4.2: The level of knowledge adolescents (N=89) possesses regarding antenatal care (ANC) booking

	Agree	**Strongly agree**	**Neutral**	**Disagree**	**Strongly disagree**
	N %	**N %**	**N %**	**N %**	**N %**
Comprehensive knowledge regarding the importance of early antenatal care (ANC) booking is essential for improving maternal and neonatal outcomes	19 (21.3)	21(23.6)	21 (23.6)	19(21.3)	9 (10.1)
Awareness of the services provided during antenatal visits is crucial for informed maternal health decision-making.	10 (11.2)	21(23.6)	19 (21.6)	21(23.6)	22 (24.7)
Understanding the potential risks associated with delayed or infrequent antenatal visits is essential in promoting maternal and fetal health.	15 (16.9)	22(24.7)	19 (21.6)	20(22.5)	13 (14.6)

Misconceptions and misunderstandings regarding the implications of antenatal care may hinder optimal utilisation of maternal health services.	16 (18.0)	16(18.0)	17 (19.1)	19(21.6)	21 (23.6)

4.2.3 SECTION C: The attitudes of adolescents regarding ANC booking in, Vhembe district of Limpopo province.

This section examines adolescents' attitudes toward an ANC booking. The statements were designed to assess respondents' feelings about the importance of ANC, the role of education and awareness, and the responsibilities of healthcare practitioners and policymakers in enhancing ANC services. Through these items, the study aims to capture whether adolescents hold positive, negative, or neutral attitudes regarding the accessibility, relevance, and impact of antenatal care services within their communities.

Responses were recorded using a five-point Likert scale ranging from "Strongly Disagree" to **"**Strongly Agree," providing a comprehensive overview of adolescent attitudes in the Vhembe District.

Regarding the statement that healthcare practitioners should tailor communication and care delivery to meet the needs of pregnant adolescents, the majority of participants expressed positive attitudes. A total of 73 participants (82.0%) either *agreed* (38; 42.7%) or *strongly agreed* (35; 39.3%), while 6 participants (6.7%) *disagreed* or *strongly disagreed*. Ten participants (11.2%) remained neutral (Table 4.3).

Regarding the statement that the study will empower adolescent mothers with knowledge about the importance of antenatal care, 73 participants (82.1%) agreed, with 41 (46.1%) agreeing and 32 (36.0%) strongly agreeing. Only 4 participants (4.5%) expressed disagreement, while 12 participants (13.5%) were neutral (Table 4.3).

Concerning the belief that increased awareness and education initiatives can lead to higher antenatal care utilisation in local communities, a total of 74 participants (83.1%) agreed or strongly agreed, including 40 (44.9%) who agreed and 34 (38.2%) who strongly agreed. Conversely, 6 participants (6.7%) disagreed, and 9 participants (10.1%) were neutral. This reflects widespread acknowledgment of the role of community-based education in strengthening ANC uptake in South Africa.

Finally, regarding the statement that policymakers and healthcare planners should use research findings to enhance ANC services for adolescents, 73 participants (82.0%) expressed positive agreement, with 37 (41.6%) agreeing and 36 (40.4%) strongly agreeing. A small proportion, 5 participants (5.6%), disagreed, while 11 participants (12.4%) neither agreed nor disagreed. This indicates strong adolescent support for evidence-informed policy and planning in adolescent maternal health services.

Table 4.3: The attitudes of adolescents regarding ANC booking.

No.	**Statement**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
13	Healthcare practitioners should tailor communication and care delivery to meet the needs of pregnant adolescents.	2 (2.2%)	4 (4.5%)	10 (11.2%)	38 (42.7%)	35 (39.3%)
14	This study will empower adolescent mothers with knowledge about the importance of antenatal care.	1 (1.1%)	3 (3.4%)	12 (13.5%)	41 (46.1%)	32 (36.0%)
15	Increased awareness and education initiatives can lead to higher antenatal care utilisation in local communities.	1 (1.1%)	5 (5.6%)	9 (10.1%)	40 (44.9%)	34 (38.2%)

16	Policymakers and healthcare planners should use research findings to enhance ANC services for adolescents.	2 (2.2%)	3 (3.4%)	11 (12.4%)	37 (41.6%)	36 (40.4%)

4.2.4 Section D: The practices of adolescents regarding ANC booking in the Vhembe district of Limpopo province.

This section assesses adolescents' practices regarding ANC booking in the Vhembe District of Limpopo Province. Practices were assessed through statements designed to capture the researchers' viewpoints, beliefs, and interpretations regarding ANC services. The responses reveal how adolescents interpret ANC booking in relation to their personal experiences, understanding, and social influences. Statements in this section also examine whether adolescents recognise the role of attitude in shaping their perception of ANC. The results provide insight into the deeper cognitive and emotional factors that may either encourage or hinder early ANC booking among adolescents in the district. Respondents rated their level of agreement using a five-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.”

4.2.4.1 Adolescent Practices of Their Knowledge About the Significance of Antenatal Care Services

The data shows a mixed distribution of responses. On the positive side, 17% (n=15) agreed and 25% (n=22) strongly agreed, accounting for 42% of respondents who believe they have sufficient knowledge regarding the importance of ANC. These adolescents likely have a better understanding of the role ANC plays in promoting maternal and child health. However, 12% (n=11) disagreed and 27% (n=24) strongly disagreed, representing 39% of respondents who feel inadequately informed. This significant proportion of adolescents lacking confidence in their knowledge highlights a gap in effective health education outreach and possibly limited access to adolescent-focused reproductive

health information. The remaining 19% (n=17) responded neutrally, suggesting indecision or limited awareness about the topic (Figure 4.1).

Overall, while a fair number of adolescents feel confident in their understanding of ANC services, a notable portion does not. This finding reinforces the need for targeted educational interventions, school-based health programs, and community outreach initiatives that are designed specifically to build adolescent knowledge and awareness about the significance of early and regular antenatal care.

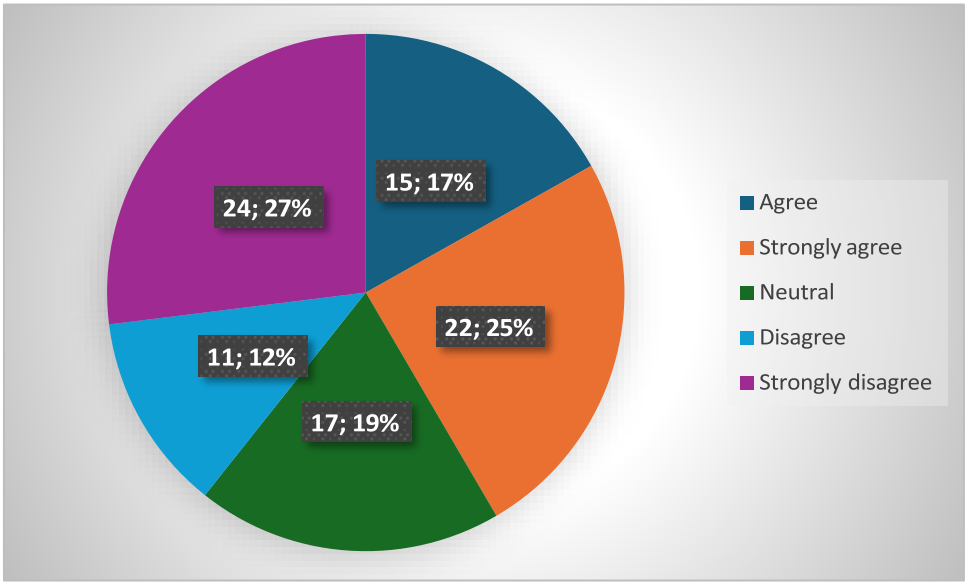

Figure 4.1: Adolescent Practices of Their Knowledge About the Significance of Antenatal Care Services

4.2.4.2 Adolescent Self-Assessment of Their Attitude Toward Antenatal Care

The results reveal a polarised distribution of responses. On one end, 24% (n=22) of respondents agreed, and 17% (n=15) strongly agreed, totalling 41% who consider their attitude toward antenatal care (ANC) to be positive. These respondents likely view ANC as an essential service that contributes to maternal and child health and may be more open to engaging with ANC services if needed (Figure 4.2).

On the opposite end, 16% (n=15) disagreed and 24% (n=22) strongly disagreed, adding up to another 40% who hold a negative attitude or are resistant toward ANC. This nearly equal divide suggests that while some adolescents recognise the importance of ANC, others may be influenced by misinformation, stigma, cultural beliefs, or negative past experiences with healthcare systems. A further 21% (n=19) expressed a neutral stance, which may reflect uncertainty, limited experience, or indifference regarding ANC.

In summary, the data underscores the existence of both supportive and resistant attitudes among adolescents in the Vhembe District. These findings highlight the urgent need for tailored awareness campaigns, adolescent-friendly counselling, and peer-led education efforts to foster more positive attitudes and normalise ANC attendance as a critical aspect of adolescent reproductive health.

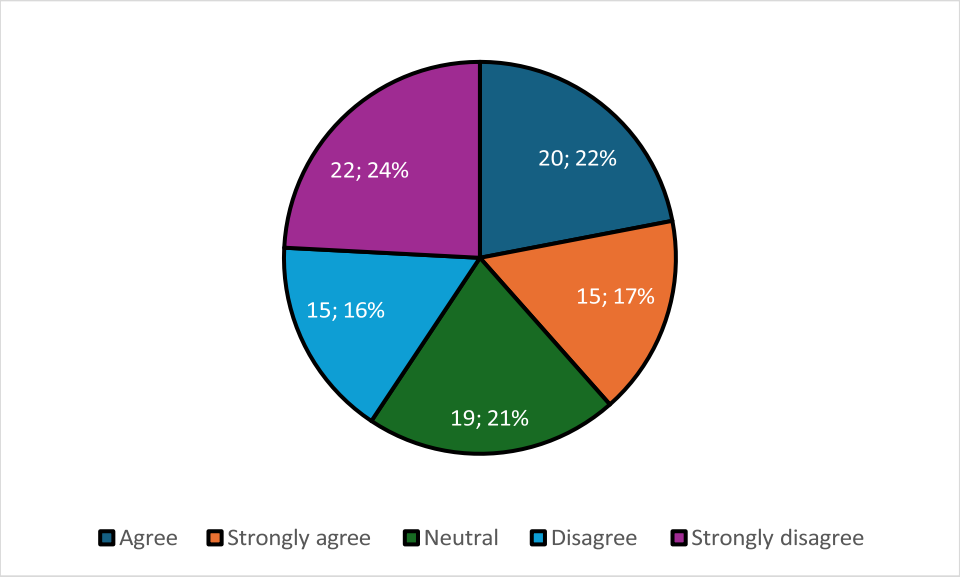

Figure 4.2: Adolescent Self-Assessment of Their Attitude Toward Antenatal Care

4.2.4.3 The Influence of Personal Experiences on Adolescents' Practices of Antenatal Care Booking

The results show a relatively even distribution of views, indicating diverse personal experiences and interpretations among adolescents in the Vhembe District (Figure 4.3).

About 20% (n=18) of respondents agreed and 22% (n=20) strongly agreed, totalling 42% who acknowledged that their perception of antenatal care (ANC) booking is shaped by personal or lived experiences. These adolescents may form opinions based on what they or others close to them have gone through when accessing ANC services. On the other hand, 19% (n=17) disagreed and 22% (n=20) strongly disagreed, also summing up to 41% who believe their perception is not significantly influenced by personal experience. This group may rely more on general knowledge, external information, or societal beliefs rather than firsthand or observed experiences.

The remaining 20% (n=18) were neutral, possibly reflecting uncertainty about the role of subjective experiences in shaping their views, or a lack of direct exposure to ANC-related situations. Overall, the findings indicate that personal interpretation plays a substantial role in forming adolescents' views about ANC booking, but this influence is not uniform. The data that both positive and negative experiences, whether direct or indirect, could either encourage or discourage ANC utilisation. Therefore, ensuring that adolescents have positive, respectful encounters with the healthcare system is vital in shaping favourable practices of antenatal care**.**

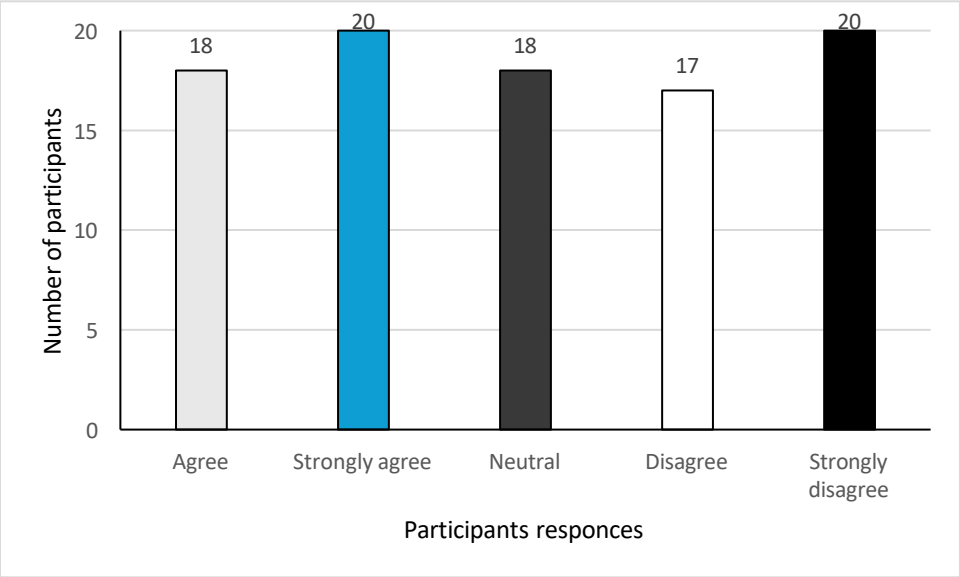

Figure 4.3: Influence of Personal Experiences on Adolescents' practices of Antenatal Care Booking

4.2.4.4 Attitude plays a crucial role in shaping my practices on the significance of antenatal care booking.

The results reflect a near-equal split in opinion. On the affirmative side, 24% (n=22) agreed, and another 24% (n=22) strongly agreed, totalling 48% who believe that attitude significantly influences their view of the importance of antenatal care (ANC) booking (Figure 4.4). This suggests that nearly half of the respondents recognise the psychological and emotional dimension, such as openness, willingness, or resistance, that their health-seeking behaviour is related to ANC.

Conversely, 24% (n=22) disagreed, and 16% (n=14) strongly disagreed, totaling 40% who do not feel that attitude is a major factor in shaping their perception. This group may believe that other influences, such as access, knowledge, or cultural norms, play a more dominant role than individual disposition. Only 11% (n=10) selected neutral, indicating that most respondents have a clear stance on the role of attitude.

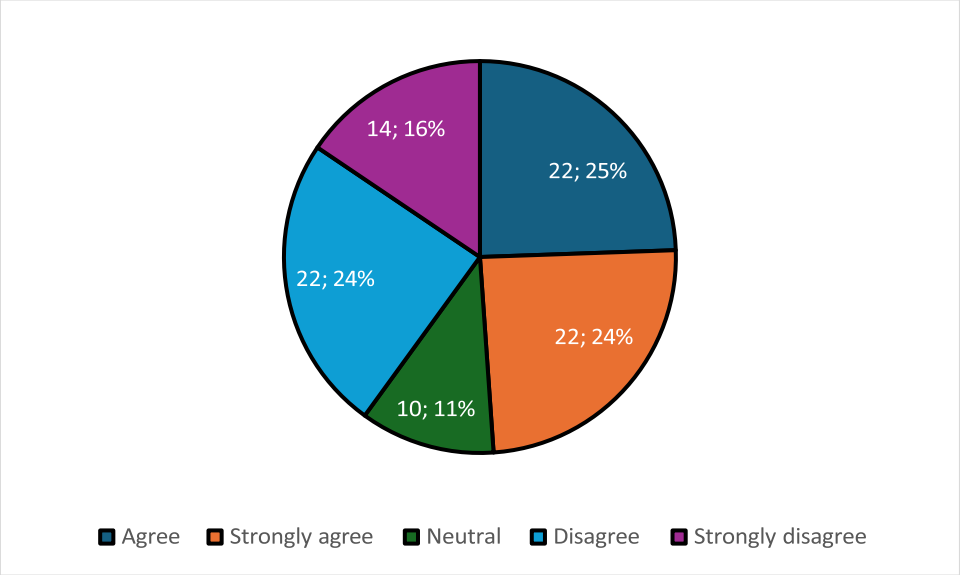

Figure 4.4: The Role of Attitude in Shaping Adolescents' Perspective on the Significance of Antenatal Care Booking

4.3 CONCLUSION

This chapter presented and interpreted the study's findings on adolescents' knowledge, attitudes, and practices regarding antenatal care (ANC) booking in the Vhembe District of Limpopo Province. The data, collected from 89 respondents via structured questionnaires, revealed a range of awareness levels, belief systems, and experiential influences shaping adolescent engagement with ANC services. The demographic profile showed a diverse yet culturally and linguistically coherent group, with most respondents being older adolescents, either single or married, and primarily Tshivenda-speaking Africans. Educational levels were nearly evenly distributed between high school and tertiary students, providing a balanced view of adolescent perspectives across educational backgrounds.

In terms of knowledge, the findings revealed moderate awareness of ANC's importance, benefits, and timing. However, a significant number of adolescents demonstrated uncertainty or misconceptions about ANC services, risks of delayed visits, and the impact of socio-cultural and economic factors. This points to the need for improved access to accurate, adolescent-specific reproductive health education. The analysis of attitudes reflected divided opinions. While some respondents expressed positive views toward ANC and supported initiatives such as tailored care and education programs, others held sceptical or negative attitudes, possibly influenced by past experiences, systemic distrust, or lack of exposure to health services. These contrasting views highlight the importance of strengthening adolescent-friendly healthcare environments and trust-building between youth and healthcare providers. Practices were also shaped by personal experiences, beliefs, and social influences. The findings indicated that attitude plays a crucial role in how adolescents interpret the significance of ANC booking, although not all respondents shared this view. Some responses suggested that external factors, such as stigma or logistical barriers, might overshadow internal motivations.

CHAPTER FIVE: DISCUSSION OF THE FINDINGS

5.1 INTRODUCTION

This chapter discusses the findings presented in Chapter four in relation to existing literature, explores the implications for practice and policy, and concludes by offering specific recommendations. The study explored adolescents' knowledge, attitudes, and practices regarding antenatal care (ANC) booking in the Vhembe District. Additionally, it examined the systemic and patient-level barriers affecting patient safety in a regional hospital.

5.2 DISCUSSION OF MAJOR FINDINGS

The findings of this study reveal a complex and multifactorial understanding of adolescent engagement with antenatal care services in the Vhembe District. While some adolescents demonstrated basic awareness of antenatal care (ANC), significant knowledge gaps persisted. This finding is consistent with previous research by Sewpaul et al. (2021), which reported that adolescent mothers in rural South Africa often lacked critical information regarding appropriate ANC booking timelines and the services provided during early pregnancy. In the present study, some participants misunderstood the role of ANC or failed to recognise the health risks associated with delayed booking, highlighting a need for targeted and age-appropriate reproductive health education.

The implications of these findings for nursing practice are substantial. When adolescents fail to recognise the risks of late ANC booking, opportunities for early detection and management of pregnancy-related complications such as anaemia, hypertensive disorders, sexually transmitted infections, and poor fetal growth are missed. This can result in preventable adverse maternal and neonatal outcomes, including preterm birth, low birth weight, and increased maternal morbidity. For nurses working in primary healthcare and community health centres, this underscores the critical role of early health education, screening, and counselling.

Nurses are strategically positioned to implement adolescent-friendly ANC services by providing non-judgmental communication, reinforcing the importance of early booking, and integrating ANC education into school health programmes and community outreach initiatives. Failure to address adolescents' limited understanding of ANC risks may perpetuate late presentation to healthcare facilities, increased obstetric complications, and continued strain on South Africa's maternal and child health services. Therefore, strengthening nurses' roles in health promotion and early ANC advocacy is essential to improving pregnancy outcomes among adolescents in the Vhembe District.

The mixed attitudes observed among respondents reflect deeper systemic and relational issues within the healthcare environment. While some adolescents believed ANC could empower them or viewed it as a necessary health service, others expressed mixed feelings, often linked to previous negative encounters with healthcare professionals. These findings align with the study by Wong Shee et al. (2021), who revealed that negative staff attitudes and a lack of youth-friendly services discourage early ANC attendance among adolescents. The majority of respondents (55% agree and strongly agree) in this study suggested that healthcare services should be more accommodating and specifically designed for young mothers, which supports national calls for adolescent-responsive care models.

Practices of ANC were shaped not only by individual knowledge or experiences but also by socio-cultural and emotional factors. Embarrassment, fear of judgment, and stigma associated with early, or out-of-wedlock, pregnancy were mentioned. Similar sentiments were reported by Turnwait (2020), who noted that cultural taboos and moral surveillance within families and communities often discourage young women from seeking timely maternal care. In the current study, practices were also influenced by infrastructural challenges such as clinic accessibility, long wait times, and overcrowding factors known to affect health-seeking behaviours in under-resourced regions (Luhalima, 2024).

Overall, the findings confirm that adolescent engagement with ANC services is influenced by a complex intersection of knowledge, attitudes, practices, and contextual constraints. To address these challenges, interventions must be holistic, combining health education, service redesign, community advocacy, and system-level reforms. These conclusions are

aligned with South Africa's National Adolescent and Youth Health Policy (2017), which emphasises the need for inclusive, age-appropriate, and culturally competent services to improve maternal health outcomes for young people.

5.3 CONCLUSION

This study uncovered a web of interconnected personal, interpersonal, systemic, and environmental factors that influence adolescent ANC booking and patient safety in the Vhembe District. Adolescents face knowledge gaps, negative practices, and cultural stigma regarding early ANC. Simultaneously, healthcare workers operate under constrained conditions, with insufficient staff, inadequate training, and poor leadership visibility. The combination of under-resourced facilities, communication failures, and poor patient engagement contributes to a fragile safety culture.

CHAPTER SIX: RECOMMENDATION AND CONCLUSION

6.1 INTRODUCTION

This chapter covers the study's overall findings on teenagers' knowledge, attitudes, and practices of booking antenatal care (ANC) in Limpopo Province's Vhembe District. The goal of this chapter is to provide a complete summary of the important findings, outline the study's recommendations, highlight its limits, and present the conclusion. The chapter links the previous section's findings with the study objectives to provide a final comment on the research's implications. This chapter summarizes the data to highlight how adolescents' knowledge levels, attitudes, and beliefs influence ANC booking behaviour, and how these insights can help policymakers, healthcare providers, and communities improve maternal health services for adolescents.

6.2 STUDY SUMMARY

This study looked at adolescent's knowledge, attitudes, and practices of antenatal care (ANC) booking in Limpopo's Vhembe District. The study was prompted by the high rate of late ANC booking among teenagers, which contributes to poor mother and child health outcomes. The study selected 89 female adolescents aged 15-19 years from Thohoyandou Block G using stratified random sampling, following a quantitative, cross-sectional methodology. Data were gathered using self-administered questionnaires and analyzed using descriptive and inferential statistical methods, including frequencies and percentages

The findings demonstrated variable levels of knowledge of ANC services, with a lot of adolescents having a poor understanding of the significance of early booking and the services available during ANC visits. Attitudes towards ANC were influenced by both positive expectations and negative practices, shaped by cultural beliefs, stigma, and mistrust in healthcare providers. Practices were further shaped by socioeconomic conditions, such as poverty and transportation barriers, as well as community and family support. Despite these challenges, enabling factors such as education, family

involvement, and youth-friendly health services emerged as potential avenues for improving ANC utilisation among adolescents.

Overall, the study highlighted the need for targeted health education, adolescent-friendly healthcare services, and policy interventions aimed at reducing barriers to ANC access. By addressing knowledge gaps, cultural stigmas, and systemic challenges, the findings provide evidence-based recommendations to strengthen maternal health outcomes and encourage early ANC booking among adolescents in the Vhembe District.

6.3 STUDY LIMITATION

Although this study provides useful information on adolescents' knowledge, attitudes, and practices regarding antenatal care (ANC) booking in Thohoyandou Block G, it has some limitations. First, the study was limited to a single geographic location within the Vhembe District, which may limit the applicability of the findings to other settings with differing cultural, social, or economic conditions. Second, the use of self-administered questionnaires relied on participants' honesty and recall, which may have introduced response bias or social desirability bias, especially given the sensitive nature of adolescent pregnancy issues. Third, the cross-sectional design collected data at a single point in time, making it impossible to establish causal relationships among knowledge, attitudes, practices, and ANC booking behavior. Furthermore, the very small sample size, while statistically sufficient, may have limited the depth of subgroup analysis. Finally, language barriers and differing reading levels may have hindered participants' comprehension of the questionnaire items, despite translation into Tshivenda when necessary.

6.4 RECOMMENDATION

Based on the findings, several recommendations have been made. First, healthcare providers should receive training to deliver adolescent-friendly ANC services with an emphasis on confidentiality, respectful communication, and tailored health education. Second, health promotion campaigns should be expanded to schools and local communities, using culturally appropriate materials in local languages such as Tshivenda

and Xitsonga. Third, mobile clinics or outreach programs should be considered in rural areas to improve access for adolescents who face transportation or mobility challenges.

Policymakers and health planners should also consider integrating reproductive health education into the school curriculum at an earlier stage. Beyond classroom education, partnerships with community leaders, peer educators, and NGOs can help normalise early ANC booking and reduce stigma. Future research could explore how family, peer, and partner dynamics influence ANC decisions and investigate long-term outcomes of adolescent ANC engagement on maternal and neonatal health. Further studies may also examine the effectiveness of community-based interventions and adolescent-inclusive ANC programs. Evaluation of health system responsiveness to adolescents' needs, including the role of male involvement and digital health tools, could offer valuable insights for improving service delivery.

In summary, improving ANC utilisation among adolescents in the Vhembe District requires more than clinical services; it demands a multifaceted approach that respects young women lived realities, empowers them with knowledge, and supports them through accessible, non-judgmental healthcare. The ANC program should adopt a monitoring framework tailored to adolescents, ensuring regular assessment of service quality and utilisation trends. Integration of youth feedback into program design and training of community health workers on adolescent-specific needs could significantly enhance service reach and impact. This chapter has synthesised the study's key insights and proposed actionable steps toward achieving safer and more inclusive maternal healthcare for adolescents in the region.

6.5 CONCLUSION

This study found that adolescents in the Vhembe District had varying levels of knowledge, attitudes, and practices about antenatal care (ANC) bookings. While some respondents were aware of the importance of early ANC, a large percentage had a limited comprehension of the services offered and the consequences associated with late booking. Attitudes were influenced by personal beliefs, cultural norms, and stigma, which contributed to delays in seeking care. Practices were further shaped by socioeconomic challenges, including poverty, transportation difficulties, and a lack of family support.

However, enabling factors such as education, adolescent-friendly health services, and community involvement were also noted.

The findings underscored that late ANC booking among adolescents was not solely a matter of individual choice but was shaped by complex interactions among knowledge gaps, attitudes, socio-cultural beliefs, and systemic barriers. Addressing these challenges requires multisectoral efforts, including targeted health education, the creation of youth-friendly healthcare environments, and policies that support adolescent mothers.

Overall, the study contributed valuable insights into the barriers and facilitators of ANC utilisation among adolescents in a rural South African context. These findings can inform policymakers, healthcare practitioners, and community leaders in designing interventions that promote early ANC booking, reduce maternal and child health risks, and improve pregnancy outcomes among adolescents.

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ANNEXURE A: ETHICAL CLEARANCE

ETHICS APPROVAL CERTIFICATE

RESEARCH .AND IN OVATION
OFFICE OF THE DIRECTOR

NAME Of RESEARCHER/INVESTIGATOR:
Mr. TJ Nedi:ingc;ihe

SWUDENT NO:
19ocn369

PROJECTmlE: Knowledge, affitude and perception of adolescents regarding antenatal car·e bo,oklng In Vhembe district of Umpopo Province.

ETHIC.AL CLEAIANCI: NO; fHS/25/PH/02/020•4

SUPERVISORS/ CO-RBSEARCHERS/ CO -INVESTIGATO

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Signature:

ANNEXURES B : QUESTIONNAIRE

SECTION A : Biographical Information.

Please mark the relevant answer by circling the letter in the boxes below.

1. **Age**

A. 15	**B. 16**	**C. 17**	**D. 18**	**E. 19**	**F. 20-Above**

2. **Marital status**

A. Single	**B. Married**	**C. Divorced**	**D. Widowed**

3. **Level of Education**

A. High school	**A. Tertiary institution**

4. **Religion**

A. Christianity	**B. African traditional religion**	**C. Islamic religion**	**D. Other (specify) bellow**

5. **Race**

A. African	**B. White**	**D. Coloured**	**E. Asian**

6. **Home language**

A. **Tshivenda**	B. **Sesotho**	C. **IsiZulu**	D. **English**	E. **Other, specify below**

Section B: Knowledge Questions

Please mark your answer by ticking the relevant box below

No.	Statement	Strongly Disagree	Disagree	Neutral	Agree	S A
6	I have comprehensive knowledge about the importance of early antenatal care booking.					
7	I am aware of the services provided during antenatal visits.					
8	I understand the potential risks associated with delayed or infrequent antenatal visits.					
9	Negative cultural beliefs and societal stigma act as deterrents for me to seek timely antenatal care.					
10	I hold misconceptions and misunderstandings regarding the implications of antenatal care.					
11	Limited access to antenatal care facilities is a barrier for me to book appointments.					
12	Poverty and limited transportation options impact my ability to attend antenatal care visits.					

Section C: Attitudes Questions

No.	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

13	Healthcare practitioners should tailor communication and care delivery to meet the needs of pregnant adolescents.					
14	This study will empower adolescent mothers with knowledge about the importance of antenatal care.					
15	Increased awareness and education initiatives can lead to higher antenatal care utilisation in local communities.					
16	Policymakers and healthcare planners should use research findings to enhance ANC services for adolescents.					

Section D: Practices Questions

No.	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
17	I possess sufficient knowledge about the significance of antenatal care services.					
18	I have a positive attitude towards antenatal care.					
19	My perception of antenatal care booking is influenced by my subjective interpretation of experiences.					

20	Attitude plays a crucial role in shaping my perspective on the significance of antenatal care booking.					

ANNEXURE C: PERMISSION LETTER

UNIVERSITY OF VENNDA

DEPARTMENT OF PUBLIC HEALTH

FACULTY OF HEALTH SCIENCES

PRIVATE BAG x5050

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SOUTH AFRICA

Dear Sir/Madam

Subject: Request for Permission to Conduct Research on Adolescent Antenatal Care Booking

My name is Nedzingahe Tsiko Jedidiah, and I am a student at the University of Venda pursuing a master's degree in public health. I am writing to request permission to conduct a research study titled "Knowledge, Attitude and Perception of Adolescents Regarding

Antenatal Care Booking in a Vhembe District of Limpopo Province", where I will require data collection from the respondents in your institution.

The reason this study is important is that late antenatal care booking among adolescents is a concerning issue, as it can have detrimental effects on both maternal and infant health outcomes. In definition, late antenatal care booking refers to adolescents seeking antenatal care services after the recommended gestational age, usually after 16 weeks of pregnancy. Late antenatal care booking among adolescents can result in missed opportunities for early detection and management of pregnancy complications, leading to negative health outcomes for both the mother and the baby. In South Africa, adolescent pregnancy rates are high, and it is important to understand the factors contributing to late antenatal care booking to develop targeted interventions that address the specific needs and challenges faced by pregnant adolescents in this region.

This study aims to investigate the knowledge, attitudes, and practices of adolescents regarding late antenatal care booking in Thohoyandou Block-G, Vhembe District of Limpopo Province. Antenatal care is crucial for the health and well-being of pregnant women and their babies. This study has the potential to allow healthcare providers to monitor the progress of the pregnancy, identify any potential complications or risks, and provide appropriate interventions and support. The study further has the potential to contribute towards providing valuable insights that could inform policies and strategies aimed at enhancing antenatal care services for adolescents, ultimately improving maternal healthcare in the region.

Considering the information provided above, you are hereby requested to grant the approval to conduct research that aims to unpack and investigate the knowledge, attitudes, and practices of adolescents regarding late antenatal care booking in Thohoyandou Block-G, Vhembe District of Limpopo Province.

Yours sincerely,

Nedzingahe Tsiko Jedidiah

Master of Public Health Candidate

University of Venda

ANNEXURE D: UNIVEN STANDARD CONSENT FORM

Research topic: Knowledge, attitude and perception of adolescents regarding antenatal care booking in Vhembe district of Limpopo province.

Name of the researcher: Nedzingahe Tsiko Jedidiah

Student number: 19001369

Qualification: Master's in public health

Brief Introduction and Purpose of the Study:

The reason this study is important is that late antenatal care booking among adolescents is a concerning issue, as it can have detrimental effects on both maternal and infant health outcomes. In definition, late antenatal care booking refers to adolescents seeking antenatal care services after the recommended gestational age, usually after 16 weeks of pregnancy. Late antenatal care booking among adolescents can result in missed opportunities for early detection and management of pregnancy complications, leading to negative health outcomes for both the mother and the baby. In South Africa, adolescent pregnancy rates are high, and it is important to understand the factors contributing to late antenatal care booking to develop targeted interventions that address the specific needs and challenges faced by pregnant adolescents in this region.

This study aims to investigate the knowledge, attitudes, and practices of adolescents regarding late antenatal care booking in Thohoyandou Block-G, Vhembe District of Limpopo Province. Antenatal care is crucial for the health and well-being of pregnant women and their babies. This study has the potential to allow healthcare providers to monitor the progress of the pregnancy, identify any potential complications or risks, and provide appropriate interventions and support. The study further has the potential to contribute towards providing valuable insights that could inform policies and strategies aimed at enhancing antenatal care services for adolescents, ultimately improving maternal healthcare in the region.

Considering the information provided above, you are hereby requested to grant the approval to conduct research that aims to unpack and investigate the knowledge, attitudes, and practices of adolescents regarding late antenatal care booking in Thohoyandou Block-G, Vhembe District of Limpopo Province.

Reasons why the participant may be withdrawn from the Study: for Illness and non-compliance

Remuneration: NO

Costs of the Study: NO

RISKS ASSOCIATED WITH THE STUDY

There will be low risks to the participants. Participants may find themselves challenged by questions or ideas they had not before considered.

CONFIDENTIALITY

The records of the study will be kept as confidentially as possible. No individual identities will be used in any reports or publications resulting from the study. All questionnaires will be given codes and stored in a locked board. Only the researcher, supervisors and the institution can access their search information.

VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. It is up to you to decide whether to take part in the study.

If you decide to take part in the study, you will be asked to sign a consent form. After you sign

the consent form, you are still free to withdraw at any time and without giving a reason.

Outcomes of this study: Upon completion of the study, the researchers will share the document with all the stakeholders who were involved in the collection of data. Community meetings will be held where data will be shared with the community leaders, such as members of the civic, together with the health care workers and at least two papers that will be published from this study.

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

ANNEXURE E: LANGUAGE EDITING CERTIFICATE

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Pretoria East

October 26, 2025

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Ms NP HEllliiJtane. BAYID-UNIViEN. IMA-UNIVEN G E-STA • 0, TEFL-TEACH TEFL)

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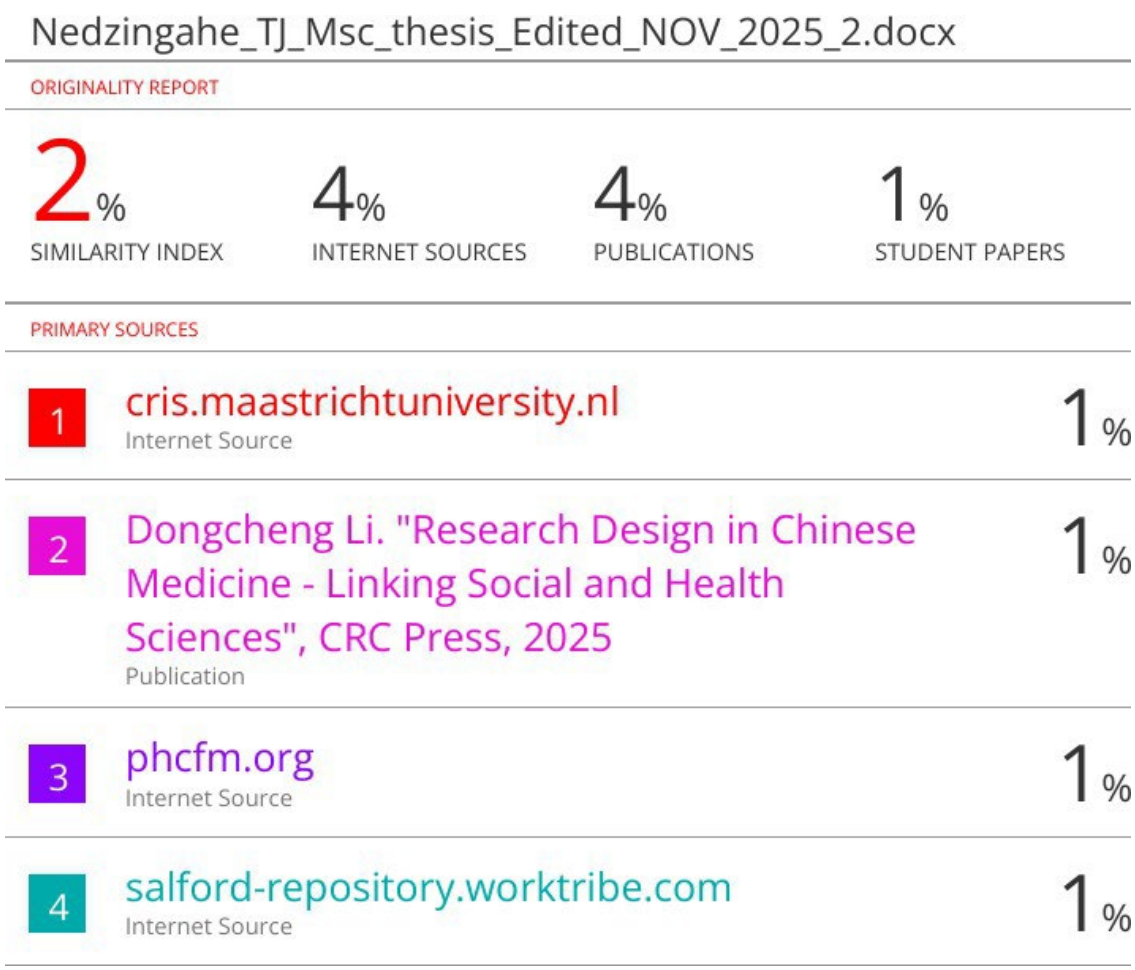
Email address: rankakanenp@gmail.co

ANNEXURE F: TURNITIN REPORT



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