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

By

Nedzingahe Tsiko Jedidiah

(19001369)

A Mini Dissertation Submitted in Fulfilment of the Requirements of a degree, Master's in Public Health, in the Faculty of Health Sciences,

University of Venda.

Supervisor: **Dr AG Mudau**

Co-Supervisor: **Prof Lebese RT**

February 2026

© University of Venda

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

© University of Venda

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.

© University of Venda

ACKNOWLEDGEMENT

I would like to express my sincere gratitude and warmest thanks to my supervisor, Dr. A.G. Mudau, whose guidance, patience, and encouragement made this work possible. Her invaluable advice and support carried me through all the stages of writing my project.

I would also like to express my heartfelt appreciation to my research mentor, Mr. Ronald Mashamba, for his consistent guidance, encouragement, and insightful input throughout this study. His mentorship played a significant role in shaping the direction of my research.

I would also like to extend my deep gratitude to the teenagers from Thohoyandou Block G who participated in my research. Your openness, honesty, and willingness to share your experiences made this study meaningful and impactful.

I am equally thankful to my committee members for making my defense an enjoyable and enriching experience. Your constructive feedback and thoughtful suggestions greatly improved the quality of my work.

Special thanks go to my life partner, Munzhedzi Zelda, and my family for their unwavering love, understanding, and continuous support throughout my research and writing process. Your prayers and encouragement have sustained me through every challenge.

Above all, I give thanks to God, whose grace and guidance have seen me through all difficulties. I have felt Your presence every step of the way. You are the one who made it possible for me to complete my degree, and I will continue to trust You for my future.

© University of Venda

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

© University of Venda

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.

© University of Venda

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

© University of Venda

University of Venda
Creating Future Leaders

Table of Contents

DECLARATION ii

DEDICATION iii

ACKNOWLEDGEMENT iv

LIST OF ACRONYMS v

ABSTRACT vi

CHAPTER ONE: INTRODUCTION AND BACKGROUND OF THE STUDY 1

1.1. BACKGROUND 1

1.2. PROBLEM STATEMENT 3

1.3 RATIONALE OF THE STUDY 4

1.4 SIGNIFICANCE OF THE STUDY 5

1.5 PURPOSE AND OBJECTIVES OF THE STUDY 6

1.5.1 Purpose of the study 6

1.5.1 Objectives of the study 6

1.6. DEFINITION OF KEY TERMS 6

CHAPTER TWO: LITERATURE REVIEW 9

2.1 INTRODUCTION 9

2.2 ADOLESCENT PREGNANCY 9

2.3 UNDERSTANDING ADOLESCENCE AND REPRODUCTIVE HEALTH 10

2.4 KNOWLEDGE OF ADOLESCENTS REGARDING ANTENATAL CARE 12

2.5 PSYCHOSOCIAL FACTORS INFLUENCING PREGNANT ADOLESCENTS' INTENTION AND SELF-EFFICACY TO ATTEND ANTENATAL CARE 14

2.6 BARRIERS TO PREGNANT ADOLESCENTS' ACCESS TO MATERNAL HEALTH CARE 15

2.7 THE TIMING OF PREGNANCY IN ADOLESCENTS AND AVAILABILITY TO PRENATAL CARE 17

© University of Venda

University of Venda
Creating Future Leaders

2.8 PRACTICES AND SOCIOCULTURAL BELIEFS ABOUT ANTENATAL CARE AMONG ADOLESCENTS 18

2.9 BARRIERS TO TIMELY ANC BOOKING AMONG ADOLESCENTS 19

2.10 FACILITATORS OF ANTENATAL CARE UTILIZATION AMONG ADOLESCENTS 20

2.11 CHAPTER SUMMARY 22

CHAPTER THREE: METHODOLOGY OF THE STUDY 23

3.1 RESEARCH METHODOLOGY 23

3.2 STUDY APPROACH 24

3.3 STUDY DESIGN 24

3.4 STUDY AREA. 25

3.5. THE STUDY POPULATION 26

3.6. SAMPLING AND SAMPLE SIZE 27

3.6.1. Sampling 27

3.6.2. Sample size. 28

3.6.3. Inclusion/ exclusion criteria 29

3.7. MEASUREMENT INSTRUMENTS 29

3.7.1. Questionnaire survey 30

3.8. PRE-TEST 30

3.9. VALIDITY AND RELIABILITY 31

3.9.1. Validity 31

3.9.2. Reliability 31

3.10. PLAN FOR DATA COLLECTION. 32

3.10.1. Recruitment Strategy 32

3.10.2. Data Collection Process 33

3.11. PLAN FOR DATA MANAGEMENT AND ANALYSIS 34

© University of Venda

University of Venda
Creating Future Leaders

3.12. ETHICAL CONSIDERATIONS 35

3.12.1 Permission to Conduct the Study 35

3.12.2 Informed Consent 35

3.12.3 Privacy 36

3.12.4 Anonymity and Confidentiality 36

3.12.5 Protection of Participants from Harm 36

3.13. PLAN FOR DISSEMINATION AND IMPLEMENTATION OF RESULTS 37

3.14 CHAPTER SUMMARY 37

4.2.4 Section D: The perception of adolescents regarding ANC booking in the Vhembe district of Limpopo province. 46

4.3 CONCLUSION 51

CHAPTER SIX: RECOMMENDATION AND CONCLUSION 55

6.1 INTRODUCTION 55

6.2 STUDY SUMMARY 55

6.3 STUDY LIMITATION 56

6.5 CONCLUSION 57

REFERENCES 59

ANNEXURE A: ETHICAL CLEARANCE 82

ANNEXURES B : QUESTIONNAIRE 83

ANNEXURE C: PERMISSION LETTER 87

ANNEXURE D: UNIVEN STANDARD CONSENT FORM 90

ANNEXURE E: LANGUAGE EDITING CERTIFICATE 93

ANNEXURE F: TURNITIN REPORT 94

© University of Venda

Table of figures

Figure 3.1:Map of Thohoyandou block G (Google Earth,2024) 26
Figure 4.1:Adolescent Attitudes Toward Tailored Communication and Care Delivery by Healthcare Practitioners ..... **Error! Bookmark not defined.**
Figure 4.2:Adolescent Attitudes on Whether the Study Will Empower Adolescent Mothers with Knowledge About Antenatal Care ..... **Error! Bookmark not defined.**
Figure 4.3:Adolescent Attitudes on Whether Increased Awareness and Education Can Improve Antenatal Care Utilization ..... **Error! Bookmark not defined.**
Figure 4.4: Adolescent Attitudes Toward the Use of Research Findings by Policymakers and Healthcare Planners to Enhance Antenatal Care Services ..... **Error! Bookmark not defined.**
Figure 4.5: Adolescent Practices of Their Knowledge About the Significance of Antenatal Care Services 47
Figure 4.6: Adolescent Self-Assessment of Their Attitude Toward Antenatal Care 48
Figure 4.7: Influence of Personal Experiences on Adolescents' Perception of Antenatal Care Booking 49
Figure 4.8: The Role of Attitude in Shaping Adolescents' Perspective on the Significance of Antenatal Care Booking 50

Table 4.1: Demographic information of respondents 41
Table 4.2: The level of knowledge adolescents (N=89) possess regarding antenatal care (ANC) booking 43

© University of Venda

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

© University of Venda

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

© University of Venda

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,

© University of Venda

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.

© University of Venda

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

© University of Venda

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:

© University of Venda

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:

© University of Venda

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.

© University of Venda

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

© University of Venda

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

© University of Venda

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).

© University of Venda

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,

© University of Venda

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).

© University of Venda

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.

© University of Venda

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

© University of Venda

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).

© University of Venda

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).

© University of Venda

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

© University of Venda

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

© University of Venda

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

© University of Venda

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.,

© University of Venda

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.

© University of Venda

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.

© University of Venda

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

© University of Venda

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.

© University of Venda

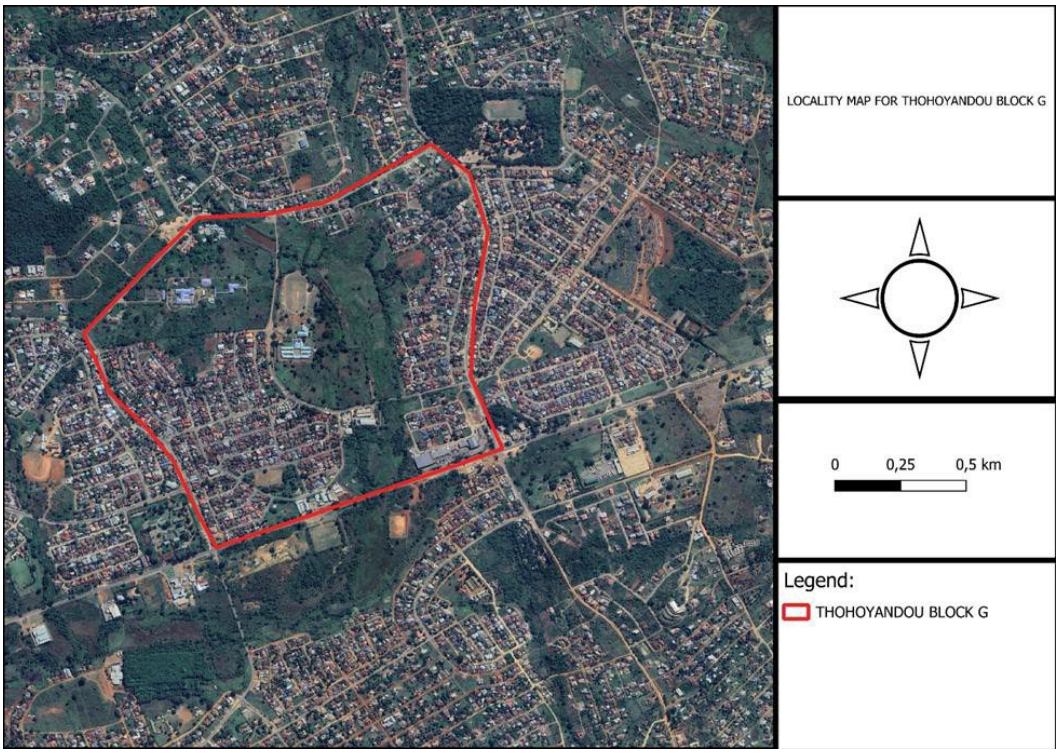


Figure 3.1: Map of Thohoyandou block G (Google Earth,2024)

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.

© University of Venda

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

© University of Venda

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)

© University of Venda

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.

© University of Venda

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.

© University of Venda

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

© University of Venda

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.

© University of Venda

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

© University of Venda

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.

© University of Venda

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.

© University of Venda

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

© University of Venda

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.

© University of Venda

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.

© University of Venda

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.

© University of Venda

- **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

© University of Venda

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		

© University of Venda

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

© University of Venda

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)

© University of Venda

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).

© University of Venda

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%)

© University of Venda

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

© University of Venda

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.

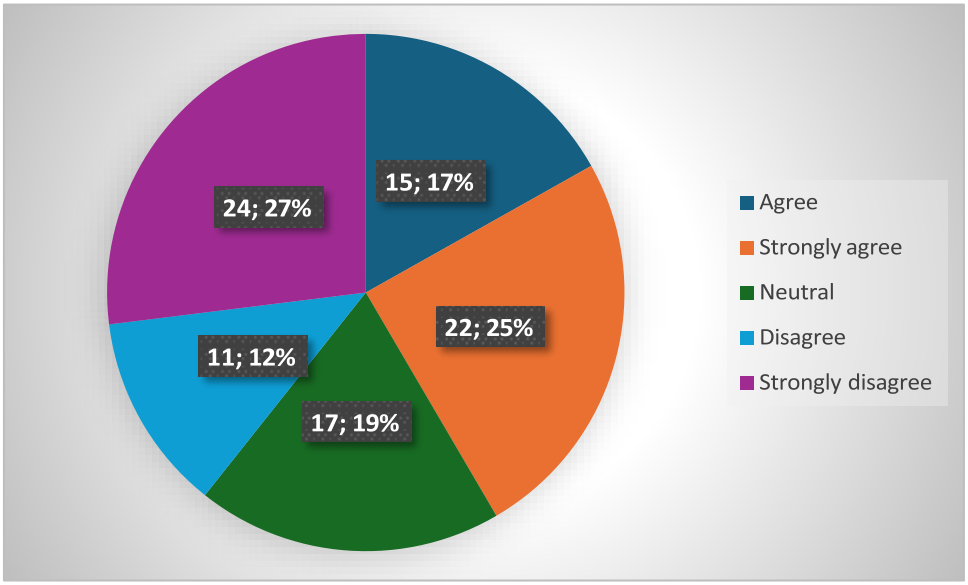


Figure 4.1: Adolescent Practices of Their Knowledge About the Significance of Antenatal Care Services

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).

© University of Venda

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.

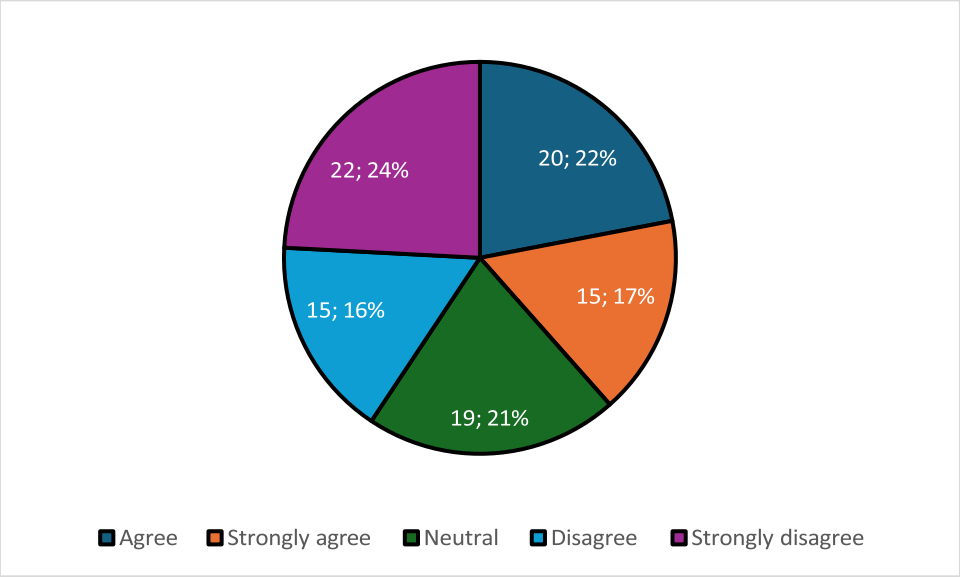


Figure 4.2: Adolescent Self-Assessment of Their Attitude Toward Antenatal Care

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).

© University of Venda

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**.**

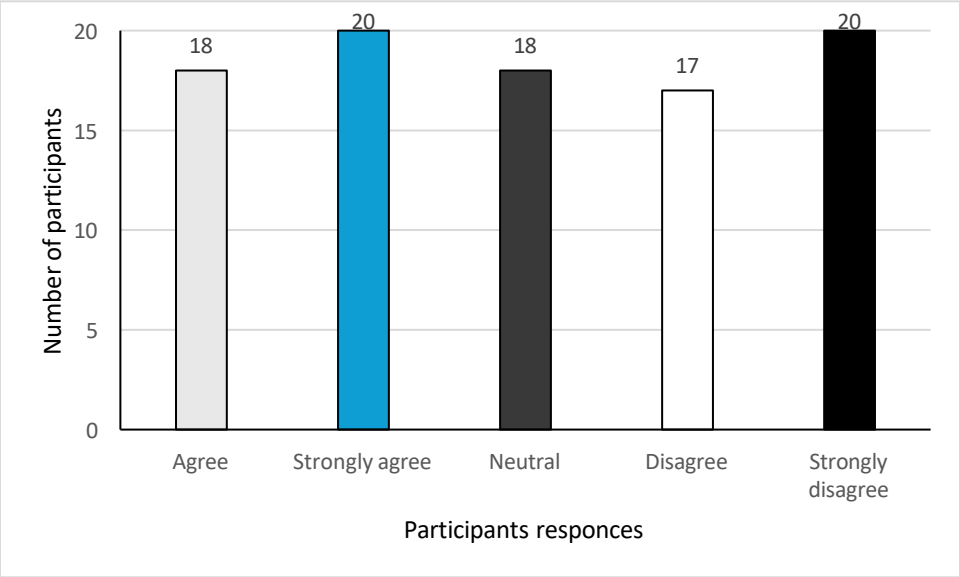


Figure 4.3: Influence of Personal Experiences on Adolescents' practices of Antenatal Care Booking

© University of Venda

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.

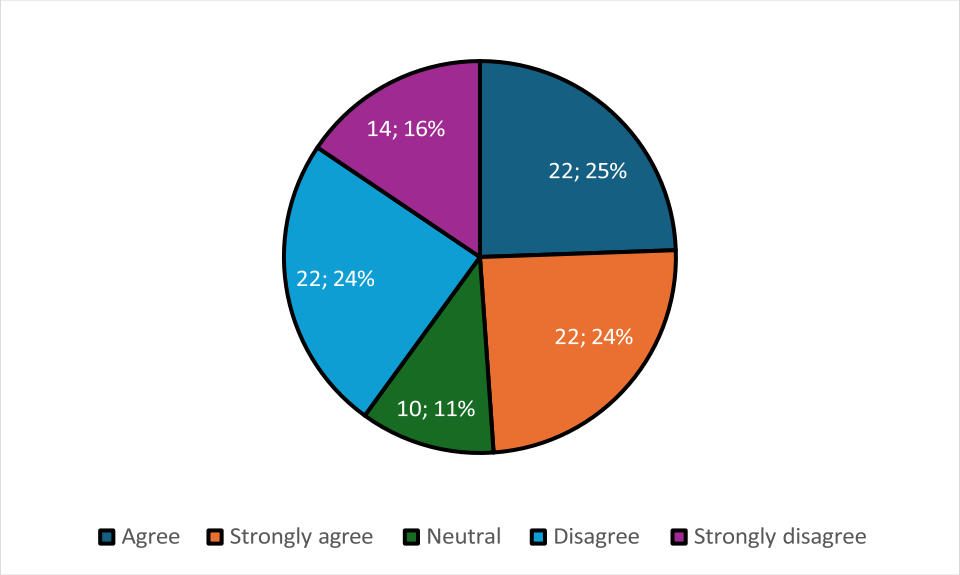


Figure 4.4: The Role of Attitude in Shaping Adolescents' Perspective on the Significance of Antenatal Care Booking

© University of Venda

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.

© University of Venda

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.

© University of Venda

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

© University of Venda

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.

© University of Venda

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

© University of Venda

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

© University of Venda

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.

© University of Venda

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.

© University of Venda

REFERENCES

Abbott, M.L., 2016. *Using statistics in the social and health sciences with SPSS and Excel*. John Wiley & Sons.

Aboagye, RG, Seidu, A-A, Ahinkorah, BO, Cadri, A, Frimpong, JB, Hagan, JE, Kassaw, NA & Yaya, S. 2022. Association between frequency of mass media exposure and maternal health care service utilisation among women in sub-Saharan Africa: Implications for tailored health communication and education. *PLOS ONE*. 17(9):e0275202. doi.org/10.1371/journal.pone.0275202.

Acharya, D., Singh, J.K., Adhikari, M., Gautam, S. and Pandey, P. 2019. Factors associated with antenatal care utilisation among adolescent mothers in Nepal. *BMC Pregnancy and Childbirth*, 19, 1, pp. 1–8.

Adedokun, ST & Yaya, S. 2021. Factors associated with adverse nutritional status of children in sub-Saharan Africa: Evidence from the Demographic and Health Surveys from 31 countries. *Maternal & Child Nutrition*. 17(3). doi.org/10.1111/mcn.13198.

Ahmmed, F., Chowdhury, M.S. & Helal, S.M., 2022. *Sexual and reproductive health experiences of adolescent girls and women in marginalised communities in Bangladesh*. *Culture, Health & Sexuality*, 24(10), pp.1140–1155. Available at: https://www.tandfonline.com/doi/abs/10.1080/13691058.2021.1909749

Akhtar, S., Hussain, M., Majeed, I. and Afzal, M., 2018. Knowledge, attitude and practice regarding antenatal care among pregnant women in rural area of Lahore. *International Journal of Social Sciences and Management*, *5*(3), pp.155-162.

Alam, N., Mollah, M.M.H. & Naomi, S.S., 2023. *Prevalence and determinants of adolescent childbearing: Comparative analysis of 2017–18 and 2014 Bangladesh Demographic Health Survey*. *Frontiers in Public Health*. Available at: https://www.frontiersin.org/articles/10.3389/fpubh.2023.1088465/full

© University of Venda

Alderwick, H., Hutchings, A., Briggs, A. and Mays, N., 2021. The impacts of collaboration between local health care and non-health care organisations and factors shaping how they work: a systematic review of reviews. *BMC Public Health*, *21*, pp.1-16.

Alem, A.Z., Teshome, D., Alemayehu, A., Andargie, A., Abebe, H., & Adugna, A., 2022. Timely initiation of antenatal care and its associated factors among pregnant women in sub-Saharan Africa: Evidence from Demographic and Health Survey data. PLOS ONE, 17(1), p.e0262411. Available at: https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0262411&type=printable [Accessed 24 Apr. 2025].

Alex-Ojei, C.A., 2020. *Sociocultural influences on maternal healthcare among adolescents in Nigeria*. Master's thesis. University of the Witwatersrand. Available at: https://wiredspace.wits.ac.za/server/api/core/bitstreams/f18da3f2-4c39-4dfe-b358-572920b10169/content [Accessed 24 Apr. 2025].

Ali A, Dero AA, Ali S, Ali G. (2018). Factors affecting the utilisation of antenatal care among pregnant women: a literature review. Preg Neonatal Med. 2(2):41–5..

Ali, A.A., Rayis, D.A., Abdallah, T.M., Elbashir, M.I. and Adam, I. 2018. Severe maternal morbidity and maternal mortality in Sudan. *International Journal of Gynecology and Obstetrics*, 143, 1, pp. 48–53.

Alibhai, K.M., Ziegler, B.R., Meddings, L., Batung, E. and Luginaah, I., 2022. Factors impacting antenatal care utilisation: a systematic review of 37 fragile and conflict-affected situations. *Conflict and Health*, *16*(1), pp.1-16.

Almanasreh, E., Moles, R. and Chen, T.F., 2019. Evaluation of methods used for estimating content validity. *Research in social and administrative pharmacy*, *15*(2), pp.214-221.

Ameyaw, EK, Dickson, KS, Adde, KS & Ezezika, O. 2021. Do women empowerment indicators predict receipt of quality antenatal care in Cameroon? Evidence from a nationwide survey. *BMC Women's Health*. 21(1). doi.org/10.1186/s12905-021-01487-y.

© University of Venda

Amroussia, N., Hernandez, A., Vives-Cases, C. and Goicolea, I., 2017. “Is the doctor God to punish me?!” An intersectional examination of disrespectful and abusive care during childbirth against single mothers in Tunisia. Reproductive health, 14(1), p.32.

Anyumba, G., 2019. Thohoyandou’s central business district and the hypothetical accessibility challenges for emergency services. *Jàmbá: Journal of Disaster Risk Studies*, *11*(2), pp.1-10.

Anyumba, M. 2019. ‘Adolescent health care utilisation and challenges: A rural perspective’, Journal of Adolescent Health, 58(3), pp. 234-240.

Arthur E, (2012). Wealth and antenatal care use: Implications for maternal health care utilisation in Ghana Health Economics Review, 2 (14) (2012), pp. 18

Azevedo, W.F.D., Diniz, M.B., Fonseca, E.S.V.B.D., Azevedo, L.M.R.D. and Evangelista, C.B., 2017. Complications in adolescent pregnancy: systematic review of the literature. *Einstein (Sao Paulo)*, *13*(4), pp.618-626.

Balk, E.M., Konnyu, K.J., Cao, W., Bhuma, M.R., Danilack, V.A., Adam, G.P., Matteson, K.A. and Peahl, A.F., 2022. Schedule of visits and televisits for routine antenatal care: a systematic review.

Bangdiwala, S.I., 2018. Regression: binary logistic. *International journal of injury control and safety promotion*, *25*(3), pp.336-338.

Banke, K.K., Obimbo, E.M., Ngaruiya, C. and Njoroge, P. 2017. Maternal mortality and adolescent pregnancy in sub-Saharan Africa. *African Journal of Reproductive Health*, 21, 3, pp. 7–15.

Banke-Thomas OE, Banke-Thomas AO, Ameh CA. (2017). Factors infuencing utilisation of maternal health services by adolescent mothers in low-and middle-income countries: a systematic review. BMC Pregnancy Childbirth. 17(1):1–14.

Barron, P., Subedar, H., Letsoko, M. and Makua, M. 2022. Teenage births and pregnancies in South Africa, 2017–2021. *South African Medical Journal*, 112, 4, pp. 252–259.

© University of Venda

Barron, P., Subedar, H., Letsoko, M., & Makua, M. (2022). Teenage births and pregnancies in South Africa, 2017–2021. South African Medical Journal.

Beckmann, J., Lang, C., du Randt, R., Gresse, A., Long, K.Z., Ludyga, S., Müller, I., Nqweniso, S., Pühse, U., Utzinger, J. and Walter, C., 2021. Prevalence of stunting and relationship between stunting and associated risk factors with academic achievement and cognitive function: A cross-sectional study with South African primary school children. International journal of environmental research and public health, 18(8), p.4218.

Birmingham, P. and Wilkinson, D., 2003. *Using research instruments: A guide for researchers*. Routledge.

Bolisani, E; Bratianu, C. (2018). "The Elusive Definition of Knowledge". Emergent Knowledge Strategies: Strategic Thinking in Knowledge Management. Springer International Publishing. pp. 1–22

Bonso, A., 2015. Teenage Pregnancy: A Global Perspective on Causes, Consequences, and Interventions. Journal of Youth and Adolescence, 44(3), pp.234–247. Available at: https://scholar.google.com/scholar_lookup?title=Teenage+Pregnancy:+A+Global+Perspective&author=Bonso&publication_year=2015 [Accessed 24 Apr. 2025].

Bostancı Ergen, E, Abide Yayla, C, Sanverdi, I, Ozkaya, E, Kilicci, C & Kabaca Kocakusak, C. 2017. Maternal-foetal outcome associated with adolescent pregnancy in a tertiary referral center: a cross-sectional study. *Ginekologia Polska*. 88(12):674–678. doi.org/10.5603/gp.a2017.0120.

Brown, SJ, Yelland, JS, Sutherland, GA, Baghurst, PA & Robinson, JS. 2011. Stressful life events, social health issues and low birthweight in an Australian population-based birth cohort: challenges and opportunities in antenatal care. *BMC Public Health*. 11(1). doi.org/10.1186/1471-2458-11-196.

Cai, L. and Zhu, Y., 2015. The challenges of data quality and data quality assessment in the big data era. *Data science journal*, *14*, pp.2-2.

© University of Venda

Chaudhry, B., Azhar, S., Jamshed, S., Ahmed, J., Khan, L.U.R., Saeed, Z., Madléna, M., Gajdács, M. and Rasheed, A., 2022. Factors Associated with Self-Medication during the COVID-19 Pandemic: A Cross-Sectional Study in Pakistan. *Tropical medicine and infectious disease*, *7*(11), p.330.

Cherry K,. (2023). The Components of Attitude Definition, Formation, Changes. Retrieved from: https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897 (Accessed 25 May 2023).

Chorongo, D., Okinda, F.M., Kariuki, E.J., Mulewa, E., Ibinda, F., Muhula, S., Kimathi, G. and Muga, R., 2016. Factors influencing the utilization of focused antenatal care services in Malindi and Magarini sub-counties of Kilifi County, Kenya. *The Pan African Medical Journal*, *25*(Suppl 2).

Coast, E., Jones, N., Francoise, U.M., Yadete, W., Isimbi, R., Gezahegne, K. and Lunin, L., 2019. Adolescent sexual and reproductive health in Ethiopia and Rwanda: a qualitative exploration of the role of social norms. Sage Open, 9(1), p.2158244019833587.

Colliver, J.A., Conlee, M.J. and Verhulst, S.J., 2012. From test validity to construct validity… and back? *Medical education*, *46*(4), pp.366-371.

Creswell, J.W. and Creswell, J.D. 2023. *Research design: Qualitative, quantitative and mixed methods approaches*. Thousand Oaks, CA: SAGE Publications.

Crooks, R, Bedwell, C & Lavender, T. 2022. Adolescent experiences of pregnancy in low- and middle-income countries: a meta-synthesis of qualitative studies. *BMC Pregnancy and Childbirth*. 22(1). doi.org/10.1186/s12884-022-05022-1.

Dahiru, T & Oche, OM. 2015. Determinants of antenatal care, institutional delivery and postnatal care services utilization in Nigeria. *Pan African Medical Journal*. 21. doi.org/10.11604/pamj.2015.21.321.6527.

Darroch, J.E., Woog, V., Bankole, A. & Ashford, L.S., 2016. *Costs and benefits of meeting the contraceptive needs of adolescents*. Washington, DC: Guttmacher Institute.

© University of Venda

De Vries H.,2017. An Integrated Approach for Understanding Health Behaviour: The I-Change Model as an Example. Psychol Behav Sci Int J. 2017;2(2):555585.

Department of Health 2017. *Guidelines for maternity care in South Africa*. Pretoria: National Department of Health.

Department of Health, (2013). Department of Health

Dickson KS, Ameyaw EK, Darteh EKM. (2020). Understanding the endorsement of wife beating in Ghana: evidence of the 2014 Ghana demographic and health survey. BMC Womens Health. 20(1):25

Dickson, K.S., Amu, H. and Darteh, E.K.M. 2020. Adolescent pregnancy and maternal health outcomes in sub-Saharan Africa. *BMC Pregnancy and Childbirth*, 20, pp. 1–10.

District Health Plan 2016–2017. *Vhembe District Health Plan*. Limpopo: Limpopo Department of Health.

Draper, CE, Micklesfield, LK, Kahn, K, Tollman, SM, Pettifor, JM, Dunger, DB & Norris, SA. 2014. Application of Intervention Mapping to develop a community-based health promotion pre-pregnancy intervention for adolescent girls in rural South Africa: Project Ntshembo (Hope). *BMC Public Health*. 14(S2). doi.org/10.1186/1471-2458-14-s2-s5.

Drigo L, Luvhengo M, Lebese RT, Makhado L. (2020). Attitudes of Pregnant Women Towards Antenatal Care Services Provided in Primary Health Care Facilities of Mbombela Municipality, Mpumalanga Province, South Africa. Retrieved from https://openpublichealthjournal.com/VOLUME/13/PAGE/569/ (accessed date 22 May 2023).

Dunjana, S., 2020. Exploration of Zimbabwean Migrant Women's Beliefs and Practices Surrounding Access, Utilisation of Contraceptives and Antenatal Services in South Africa (Doctoral dissertation, Faculty of Humanities, University of the Witwatersrand, Johannesburg).

© University of Venda

Dzebu W, (2006). 'Terror fire torches Thohoyandou shop', Zoutnet, Accessed on 26 May 2023., from https://www.zoutnet.co.za/articles/news/4055/2006-03-10/terror-fire-torches-thohoyandou-shop.

Ebonwu J, Mumbauer A, Uys M, Wainberg ML, Medina-Marino A. 2018.Determinants of late antenatal care presentation in rural and periurban communities in South Africa: A cross-sectional study. PLoS One. 13(3):e0191903.

Ekholuenetale, M., 2021. Prevalence of eight or more antenatal care contacts: findings from multi-country nationally representative data. *Global Pediatric Health*, *8*, p.2333794X211045822.

Erasmus, M.O., Knight, L. and Dutton, J., 2020. Barriers to accessing maternal health care amongst pregnant adolescents in South Africa: a qualitative study. International Journal of Public Health, 65, pp.469-476.

Eungoo, K.A.N.G. and HWANG, H.J., 2023. The Importance of Anonymity and Confidentiality for Conducting Survey Research. *연구윤리*, *4*(1), pp.1-7.

Fagbamigbe, A.F., Idemudia, E.S. and Afolayan, A.J. 2022. Barriers to early antenatal care booking in low- and middle-income countries. *Journal of Public Health Research*, 11, 2, pp. 1–10.

Filip, R., Gheorghita Puscaselu, R., Anchidin-Norocel, L., Dimian, M. and Savage, W.K., 2022. Global challenges to public health care systems during the COVID-19 pandemic: a review of pandemic measures and problems. *Journal of Personalized Medicine*, *12*(8), p.1295.

Fulpagare, PH, Saraswat, A, Dinachandra, K, Surani, N, Parhi, RN, Bhattacharjee, S, S, S, Purty, A, et al. 2019. Antenatal Care Service Utilization Among Adolescent Pregnant Women–Evidence from Swabhimaan Programme in India. *Frontiers in Public Health*. 7. doi.org/10.3389/fpubh.2019.00369.

Galadima, A., Usman, I. & Ibrahim, A., 2021. *Knowledge and attitude toward contraception in adolescents: A regional analysis. Journal of Public Health and Epidemiology*, 13(2), pp.40–47. Available at:

© University of Venda

https://www.academia.edu/download/75446011/6966.pdf [Accessed 24 Apr. 2025].

Gebrehiwot, T., Goicolea, I., Edin, K. and Sebastian, M.S. 2015. Making pragmatic choices: Women's experiences of delivery care in northern Ethiopia. *BMC Pregnancy and Childbirth*, 15, pp. 1–12.

Gebremichael, SG & Fenta, SM. 2020. Factors Associated with U5M in the Afar Region of Ethiopia. *Advances in Public Health*. 2020:1–9. doi.org/10.1155/2020/6720607.

Geltore, T.E. and Anore, D.L., 2021. The Impact of Antenatal Care in. Empowering midwives and obstetric nurses, 107.

Goldman, I. and Pabari, M., 2020. An introduction to evidence-informed policy and practice in Africa. *Using Evidence in Policy and Practice*, *13*.

Govender T, Reddy P, Ghuman S.,2018. Obstetric outcomes and antenatal access among adolescent pregnancies in KwaZulu-Natal, South Africa.

Gross, K., Alba, S., Glass, T.R., Schellenberg, J.A. and Obrist, B. 2012. Timing of antenatal care for adolescent and adult pregnant women in Tanzania. *BMC Pregnancy and Childbirth*, 12, p. 16.

Grove SK, Burns N, Gray JR.(2014). Understanding nursing research: Building an evidence-based practice. Elsevier Health Sciences. The Open Public Health Journal, 2020, Volume 13 57

Hackett, K, Lenters, L, Vandermorris, A, LaFleur, C, Newton, S, Ndeki, S & Zlotkin, S. 2019. How can engagement of adolescents in antenatal care be enhanced? Learning from the perspectives of young mothers in Ghana and Tanzania. *BMC Pregnancy and Childbirth*. 19(1). doi.org/10.1186/s12884-019-2326-3.

Hilaire, M., Andrianou, X.D., Lenglet, A., Ariti, C., Charles, K., Buitenhuis, S., Van Brusselen, D., Roggeveen, H., Ledger, E., Denat, R.S. and Bryson, L., 2021. Growth and neurodevelopment in low birth weight versus normal birth weight infants from birth to 24 months, born in an obstetric emergency hospital in Haiti, a prospective cohort study. *BMC pediatrics*, *21*(1), pp.1-16.

© University of Venda

Hilaire, N., Mukona, D. and Maposa, I. 2021. Factors influencing antenatal care utilisation among adolescents in rural communities. *African Journal of Primary Health Care and Family Medicine*, 13, 1, pp. 1–7.

Hill, L.M., Maman, S., Groves, A.K. and Moodley, D., 2020. Social support among HIV-positive and HIV-negative adolescents in Umlazi, South Africa: changes in family and partner relationships during pregnancy and the postpartum period. BMC Pregnancy and childbirth, 15(1), p.117.

Hlongwane, TM, Bozkurt, B, Barreix, MC, Pattinson, R, Gülmezoglu, M, Vannevel, V & Tunçalp, Ö. 2021. Implementing antenatal care recommendations, South Africa. *Bulletin of the World Health Organization*. 99(3):220–227. doi.org/10.2471/blt.20.278945.

Honarvar, B., Lankarani, K.B., Kharmandar, A., Shaygani, F., Zahedroozgar, M., Rahmanian Haghighi, M.R., Ghahramani, S., Honarvar, H., Daryabadi, M.M., Salavati, Z. and Hashemi, S.M., 2020. Knowledge, attitudes, risk practices, and practices of adults toward COVID-19: a population and field-based study from Iran. *International journal of public health*, *65*, pp.731-739.

Hossain, M.A., Das, N.C., Tariqujjaman, M. & Siddique, A.B., 2024. *Understanding the socio-demographic and programmatic factors associated with adolescent motherhood and its association with child undernutrition in Bangladesh*. *BMC Public Health*. Available at: https://link.springer.com/article/10.1186/s12889-024-19355-3

Hung, M., Bounsanga, J. and Voss, M.W., 2017. Interpretation of correlations in clinical research. *Postgraduate medicine*, *129*(8), pp.902-906.

Hwang, A. D., Wang, H., & Pomplun, M. (2011). Semantic guidance of eye movements in real-world scenes. Vision Research, 51(10), 1192-1205

Jacobs, C., Mwale, F., Mubanga, M., Kasonde, M., Saili, A., Mukonka, R., Mumbi Mwilu, L. and Munakampe, M.N., 2023. Practices of youth-friendly sexual and reproductive health services in selected Higher and Tertiary Education Institutions

© University of Venda

of Zambia: A qualitative study on the perspectives of young people and healthcare providers. PLOS global public health, 3(11), p.e0002650.

Kariathi, V. and Rugumisa, B., 2023. Nutrition and health implications of preterm children born to adolescent mothers: https://doi. org/10.54088/kij9. Developmental and Adolescent Health, 3(1), pp.13-20.

Kassler, W.J., Howerton, M., Thompson, A., Cope, E., Alley, D.E. and Sanghavi, D., 2017. Population health measurement at Centers for Medicare & Medicaid Services: bridging the gap between public health and clinical quality. *Population health management*, *20*(3), pp.173-180.

Kastanakis, M.N. and Voyer, B.G., 2014. The effect of culture on perception and cognition: A conceptual framework. *Journal of Business Research*, *67*(4), pp.425-433.

Kaye, D.K., 2019. The moral imperative to approve pregnant women's participation in randomized clinical trials for pregnancy and newborn complications. *Philosophy, Ethics, and Humanities in Medicine*, *14*(1), pp.1-11.

Khan, NUZ, Rasheed, S, Sharmin, T, Siddique, AK, Dibley, M & Alam, A. 2018. How can mobile phones be used to improve nutrition service delivery in rural Bangladesh? *BMC Health Services Research*. 18(1). doi.org/10.1186/s12913-018-3351-z.

Kibel, M, Thorne, J, Kerich, C, Naanyu, V, Yego, F, Christoffersen-Deb, A, & Bernard, C. 2022. Acceptability and feasibility of community-based provision of urine pregnancy tests to support linkages to reproductive health services in Western Kenya: a qualitative analysis. *BMC Pregnancy and Childbirth*. 22(1). doi.org/10.1186/s12884-022-04869-8.

Kim, Y., 2018. An empirical study of biological scientists' article sharing through ResearchGate: Examining attitudinal, normative, and control beliefs. *Aslib Journal of Information Management*, *70*(5), pp.458-480.

Klykken, F.H., 2022. Implementing continuous consent in qualitative research. *Qualitative Research*, *22*(5), pp.795-810.

© University of Venda

Krugu, JK, Mevissen, FEF, Prinsen, A, & Ruiter, RAC. 2016. Who's that girl? A qualitative analysis of adolescent girls' views on factors associated with teenage pregnancies in Bolgatanga, Ghana. *Reproductive Health*. 13(1). doi.org/10.1186/s12978-016-0161-9.

Kumar, C, Rai, RK, Singh, P.K. & Singh, L. 2013. Socioeconomic Disparities in Maternity Care among Indian Adolescents, 1990–2006. *PLoS ONE*. 8(7):e69094. doi.org/10.1371/journal.pone.0069094.

Kwame, A. and Petrucka, P.M., 2021. A literature-based study of patient-centred care and communication in nurse-patient interactions: barriers, facilitators, and the way forward. *BMC Nursing*, *20*(1), pp.1-10.

Li, L., He, D. and Zhang, C., 2016. Evaluating academic answer quality: A pilot study on ResearchGate Q&A. In HCI in Business, Government, and Organisations: eCommerce and Innovation: Third International Conference, HCIBGO 2016, Held as Part of HCI International 2016, Toronto, Canada, July 17-22, 2016, Proceedings, Part I 3 (pp. 61-71). Springer International Publishing.

Lilungulu, A.G., Matovelo, D. and Gesase, A., 2016. Reported knowledge, attitude and practice of antenatal care services among women in Dodoma Municipal. *Tanzania. Journal of Paediatrics and Neonatal Care*, *4*(1), p.8.

Luhalima, T.R., 2024. The Importance of Quality Assurance in Rural Public Healthcare Facilities. In Quality Control and Quality Assurance: Techniques and Applications. IntechOpen.

Macleod, C.I. and Feltham-King, T., 2019. Young pregnant women and public health: Introducing a critical reparative justice/care approach using South African case studies. *Critical Public Health*, *30*(3), pp.319-329.

Maharjan, S., Devkota, N., Poudel, U.R. and Klímová, M., 2022. Newari Community's Attitude to Promote Cultural Tourism Development: Evidence from Kathmandu Valley, Nepal. *Journal of Tourism and Services*, *13*(24), pp.164-189.

© University of Venda

Manjavidze, T, Rylander, C, Skjeldestad, F.E., Kazakhashvili, N, & Anda, EE. 2020. Unattended Pregnancies and Perinatal Mortality in Georgia . *Risk Management and Healthcare Policy*. Volume 13:313–321. doi.org/10.2147/rmhp.s243207.

Massyn, N. et al., 2020. District Health Barometer 2019/2020. Health Systems Trust.

McDonagh, M. and Peterson, K., 2014. Selecting studies for inclusion. *Systematic reviews to answer health care questions*, pp.68-80.

Meherali, S., Castleton, P., Memon, Z. & Lassi, Z.S., 2024. *Understanding the contents and gaps in sexual and reproductive health toolkits designed for adolescents and young adults: A scoping review*. *Sexual Medicine Reviews*, 12(3), pp.387–405. Available at: https://academic.oup.com/smr/article/12/3/387/7668689

Meherali, S., Punjani, N., Louie-Poon, S., Abdul Rahim, K., Das, J.K., Salam, R.A. and Lassi, Z.S., 2021. Mental health of children and adolescents amidst COVID-19 and past pandemics: a rapid systematic review. International journal of environmental research and public health, 18(7), p.3432

Meherali, S., Rehmani, M., Ali, S. & Lassi, Z.S., 2021. *Interventions and strategies to improve sexual and reproductive health outcomes among adolescents living in low-and middle-income countries: A systematic review*. *Adolescents*, 1(3), pp.28–46. Avalable at : https://www.mdpi.com/2673-7051/1/3/28

Meier, A. and Tunger, D., 2018. Investigating the transparency and influenceability of altmetrics using the example of the RG score and the ResearchGate platform. *Information Services & Use*, *38*(1-2), pp.99-110.

Mekonnen, T, Dune, T & Perz, J. 2019. Maternal health service utilisation of adolescent women in sub-Saharan Africa: a systematic scoping review. *BMC Pregnancy and Childbirth*. 19(1). doi.org/10.1186/s12884-019-2501-6.

Mekonnen, T., Dune, T. & Perz, J., 2019. *Maternal health service utilisation of adolescent women in sub-Saharan Africa: A systematic scoping review. BMC Pregnancy and*

© University of Venda

Childbirth, 19(1), pp.1–15. Available at: https://link.springer.com/content/pdf/10.1186/s12884-019-2501-6.pdf [Accessed 24 Apr. 2025].

Melvin, C.L., Harvey, J., Pittman, T., Gentilin, S., Burshell, D. and Kelechi, T., 2020. Communicating and disseminating research findings to study participants: Formative assessment of participant and researcher expectations and preferences. *Journal of clinical and translational science*, *4*(3), pp.233-242.

Mgbekem, M.A., Offiong, D.A., Nsemo, A.D. & Abasiubong, F., 2020. Focused antenatal care services for adolescent mothers: Awareness and challenges in Nigeria. African Journal of Biomedical Research, 23(2), pp.215–223. Available at: https://ajbrui.org/ojs/index.php/ajbr/article/view/992 [Accessed 24 Apr. 2025].

Michaels-Igbokwe C, Terris-Prestholt F, Cairns J, Lagarde M. (2015). Designing a package of sexual and reproductive health and HIV outreach services to meet the heterogeneous preferences of young people in Malawi: results from a discrete choice experiment. Health Econ Rev. 5(1):9.

Millennium Development Goals Country Report 2013: The South Africa I know, the home I understand

Mkhari MM. (2016). Factors contributing to late antenatal care booking at Thulamahashe local area at Bushbuckridge sub-district, Ehlanzeni district in Mpumalanga Province (Doctoral dissertation) 2016. http://uir.unisa.ac.za/bitstream/handle/10500/22648/dissertation_mkhari_mm.pdf?sequence=1&isAllowed=Y

Molina-Mula, J. and Gallo-Estrada, J., 2020. Impact of nurse-patient relationship on quality of care and patient autonomy in decision-making. *International journal of environmental research and public health*, *17*(3), p.835.

Mthethwa EX. (2017). Developing guidelines to promote community participation and local accountability for pregnant women's access to basic antenatal care in Mpumalanga Province, South Africa (Doctoral dissertation, University of Pretoria).

Mulondo, S. A. (2020). Factors associated with underutilisation of antenatal care services in Limpopo, South Africa. British Journal of Midwifery.

© University of Venda

Mulondo, S.A. 2020. Factors associated with underutilisation of antenatal care services in Limpopo, South Africa. *British Journal of Midwifery*, 28, 3, pp. 168–175.

Mweteni W, Kabirigi J, Matovelo D, Laisser R, Yohani V, Shabani G, et al. (2021). Implications of power imbalance in antenatal care seeking among pregnant adolescents in rural Tanzania: a qualitative study. PLoS One 21;16

National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), ICF. South Africa Demographic and Health Survey 2019. NDoH, Stats SA, SAMRC, and ICF: Pretoria, South Africa, and Rockville, Maryland, USA; 2019

National Department of Health et al., 2019. South Africa Demographic and Health Survey 2016. Pretoria: NDoH, Stats SA, SAMRC, and ICF.

Neal, S., Matthews, Z., Frost, M., Fogstad, H., Camacho, A.V. & Laski, L., 2012. *Childbearing in adolescents aged 12–15 years in low-resource countries: A neglected issue*. *Acta Obstet Gynecol Scand*, 91(9), pp.1114–1118. https://doi.org/10.1111/j.1600-0412.2012.01467.x

Nemavhulani, T. G. (2021). Perspectives of elderly women regarding factors contributing to maternal mortality in rural villages of Vhembe District, Limpopo Province (Doctoral dissertation).

Ngene, N.C. & Moodley, J., 2020. Maternal deaths because of eclampsia in teenagers. Afr J Prim Health Care Fam Med, 12(1), pp.1–6.

Nijhawan, L.P., Janodia, M.D., Muddukrishna, B.S., Bhat, K.M., Bairy, K.L., Udupa, N. and Musmade, P.B., 2013. Informed consent: Issues and challenges. *Journal of advanced pharmaceutical technology & research*, *4*(3), p.134.

Nsemo, A.D. & Offiong, D.A., 2016. Perception and utilisation of focused antenatal care among pregnant teenagers in Nigeria. African Journal of Reproductive Health, 20(3), pp.89–97. Available at: https://www.ajol.info/index.php/ajrh/article/view/202189 [Accessed 24 Apr. 2025].

© University of Venda

Nsemo, A.D., Ojong, I.N., Agambire, R. and Afoakwah, G., 2020. Pregnant Teenagers' Perception and Access to Focused Antenatal Care Services in a Ghanaian Government Hospital. African Journal of Biomedical Research, 23(2), pp.171-180.

Nxiweni, P. Z., Oladimeji, K. E., & Banda, L. (2022). Factors influencing utilisation of antenatal services in South Africa. Women (MDPI).

Nxiweni, P.Z., Oladimeji, K.E. and Banda, L. 2022. Factors influencing utilisation of antenatal services in South Africa. *Women*, 2, 4, pp. 404–417.

Nyaga, I.n., 2023. Strategies Influencing Provision of Adolescent and Youth Friendly Services Within the Public Health Facilities in Migori County (Doctoral dissertation, KeMU).

Okedo-Alex, I.N., Akamike, I.C., Ezeanosike, O.B. and Uneke, C.J., 2019. Determinants of antenatal care utilisation in sub-Saharan Africa: a systematic review. BMJ open, 9(10), p.e031890.

Ondicho, Z.M., Omondi, D.O. and Onyango, A.C., 2016. Prevalence and socio-demographic factors associated with overweight and obesity among healthcare workers in Kisumu East Sub-County, Kenya.

Onwuegbuzie, A.J. and Johnson, R.B., 2006. The validity issue in mixed research. *Research in the Schools*, *13*(1), pp.48-63.

Orgaz, F., Moral, S. and Domínguez, C.M., 2018. Student's Attitude and Perception with the Use of Technology in the University. *Journal of Educational Psychology-Propositos y Representaciones*, *6*(2), pp.277-299.

Oribhabor, C.B. and Anyanwu, C.A., 2019. Research sampling and sample size determination: a practical application. *Journal of Educational Research (Fudjer)*, *2*(1), pp.47-57.

Oshinyemi, T., Adewale, A. and Johnson, P. 2018. 'Maternal and child health care: The role of antenatal care in improving outcomes', International Journal of Maternal Health, 10(2), pp. 115-123.

© University of Venda

Oshinyemi, T.E., Aluko, J.O. and Oluwatosin, O.A., 2018. Focused antenatal care: Re-appraisal of current practices. *International journal of nursing and midwifery*, *10*(8), pp.90-98.

Paladugu, RK, Donipudi, PC, Chimata, D & Jasti, M. 2018. Adolescent pregnancy and its outcomes: a cross-sectional study. *International Journal of Community Medicine and Public Health*. 5(10):4408. doi.org/10.18203/2394-6040.ijcmph20183984.

Pandey, P.L., Seale, H. and Razee, H., 2019. Exploring the factors impacting access and acceptance of sexual and reproductive health services provided by adolescent-friendly health services in Nepal. PloS one, 14(8), p.e0220855.

Patel BB, Gurmeet P, Sinalkar DR, Pandya KH, Mahen A, Singh N. (2016). A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra. Med J DY Patil Univ [serial online] 2016 [accessed on 2023 May 29];9:354-62. Available from: https://journals.lww.com/mjdy/pages/default.aspx/text.asp?2016/9/3/354/182507

Patel, B.B., Gurmeet, P., Sinalkar, D.R., Pandya, K.H., Mahen, A. and Singh, N., 2016. A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra. *Medical Journal of Dr. DY Patil University*, *9*(3), pp.354-362.

Patino, C.M. and Ferreira, J.C., 2018. Inclusion and exclusion criteria in research studies: definitions and why they matter. *Jornal Brasileiro de Pneumologia*, *44*, pp.84-84.

Raatikainen, K, Heiskanen, N & Heinonen, S. 2007. Under-attending free antenatal care is associated with adverse pregnancy outcomes. *BMC Public Health*. 7(1). doi.org/10.1186/1471-2458-7-268.

Racape, J, Schoenborn, C, Sow, M, Alexander, S & De Spiegelaere, M. 2016. Are all immigrant mothers really at risk of low birth weight and perinatal mortality? The crucial role of socio-economic status. *BMC Pregnancy and Childbirth*. 16(1). doi.org/10.1186/s12884-016-0860-9.

© University of Venda

Rajbanshi, S, Norhayati, MN & Nik Hazlina, NH. 2020. High-risk pregnancies and their association with severe maternal morbidity in Nepal: A prospective cohort study. *PLOS ONE*. 15(12):e0244072. doi.org/10.1371/journal.pone.0244072.

Ramraj, T. et al., 2015. Mother-to-child transmission of HIV among adolescents. SA AIDS Conference.

Rashid, M., Khan Chowdhury, M.R. & Rahman, F., 2025. *Association between adolescent pregnancy and infant mortality: a population-based study*. *Frontiers in Paediatrics*. Available at: https://www.frontiersin.org/articles/10.3389/fped.2025.1459594/full

Raspa, M., Levis, D.M., Kish-Doto, J., Wallace, I., Rice, C., Barger, B., Green, K.K. and Wolf, R.B., 2015. Examining parents' experiences and information needs regarding early identification of developmental delays: qualitative research to inform a public health campaign. *Journal of developmental and behavioral pediatrics: JDBP*, *36*(8), p.575.

Roberts, J., Hopp Marshak, H., Sealy, D.A., Manda-Taylor, L., Mataya, R. and Gleason, P., 2017. The role of cultural beliefs in accessing antenatal care in Malawi: a qualitative study. *Public Health Nursing*, *34*(1), pp.42-49.

Roberts, L., Wood, L. and Bonde, A. 2017. 'Cultural influences on maternal health: Understanding antenatal care utilisation in rural settings', African Journal of Reproductive Health, 21(4), pp. 52-67.

Save the Children, 2021. Teen pregnancies in South Africa jump 60% during the COVID-19 pandemic. https://reliefweb.int/report/south-africa/teen-pregnancies-south-africa-jump-60-during-covid-19-pandemic

Scott, DR & Swanepoel, M. 2018. Canadian and South African Scholars' Use of Institutional Repositories, ResearchGate, and Academia.edu. *Partnership: The Canadian Journal of Library and Information Practice and Research*. 13(1). doi.org/10.21083/partnership.v13i1.4137.

Seager, J., Mitu, K. & Jones, N., 2024. *Sexual and reproductive health for Rohingya young people living in Bangladesh*. *GAGE Midline Report*. Available at:

© University of Venda

https://www.gage.odi.org/wp-content/uploads/2024/04/Bangladesh-SRH-Midline-Report-2024-WEB50.pdf

Sedgh G, Finer LB, Bankole A, Eilers MA, Singh S. (2015). Adolescent pregnancy, birth, and abortion rates across countries: levels and recent trends. J Adolesc Health. 56(2):223–230

Sedgh, G. 2015. Adolescent pregnancy, birth, and abortion rates across countries. *International Perspectives on Sexual and Reproductive Health*, 41, 4, pp. 161–173.

Sellers PM. (2018). Sellers' midwifery. Cape Town: Juta Academic 2018.

Sesay, S.M., 2024. Gender Dynamics and the Socioeconomic Implications of Infertility in Sierra Leone: A Study on Health, Social Stigmatisation, and Economic Impact. World Journal of Public Health, 9(4), pp.313-321.

Sewpaul, R., Crutzen, R. and Reddy, P., 2022. Psychosocial determinants of the intention and self-efficacy to attend antenatal appointments among pregnant adolescents and young women in Cape Town, South Africa: a cross-sectional study. BMC Public Health, 22(1), p.1809.

Sewpaul, R., Crutzen, R., Dukhi, N., Sekgala, D. and Reddy, P., 2021. A mixed reception: practices of pregnant adolescents' experiences with health care workers in Cape Town, South Africa. Reproductive Health, 18(1), p.167.

Sewpaul, R., Crutzen, R., Reddy, P. & Jonas, K., 2023. *Digital health intervention for improving antenatal care seeking and health behavioural determinants during pregnancy among adolescent girls and young women in South Africa: Protocol for a randomised controlled trial. JMIR Research Protocols*, 12, p.e43654. Available at: https://www.researchprotocols.org/2023/1/e43654/ [Accessed 24 Apr. 2025].

Sharma, A, Thakur, PS, Tiwari, R & Sharma, R. 2019. Utilization of antenatal care services in tribal area of Madhya Pradesh: a community based cross sectional study. *International Journal of Community Medicine and Public Health*. 6(6):2465. doi.org/10.18203/2394-6040.ijcmph20192306.

© University of Venda

Sharma, S., Rani, M. and Sharma, R. 2015. Late antenatal care and its predictors among women in developing countries. *Journal of Health, Population and Nutrition*, 33, 1, pp. 1–12.

Sharma, S.R., Giri, S., Timalsina, U., Bhandari, S.S., Basyal, B., Wagle, K. and Shrestha, L., 2015. Low birth weight at term and its determinants in a tertiary hospital of Nepal: a case-control study. *PloS one*, *10*(4), p.e0123962.

Sherry Greenberg, M.S.N. ed., 2010. *Nurse practitioners: The evolution and future of advanced practice*. Springer Publishing Company.

Shisana, O. et al., 2015. South African national HIV prevalence, incidence and behaviour survey, 2012. HSRC Press.

Shoaib-Bin-Habib, M., Eshna, R.H. & Hosen, I., 2024. *Promoting Sexual and Reproductive Health Rights (SRHR) to the Adolescents in Bangladesh: Policy Prospects and Challenges*. *Cognisance Journal*, 4(10). Available at: https://cognizancejournal.com/vol4issue10/V4I1007.pdf

Sibiya NM, Ngxongo TP, Bhengu JT. (2018). Access and utilisation of antenatal care services in a rural community of eThekwini district in KwaZulu-Natal. International Journal of African Nurses Science. 8(1) 7-30 Retrieved from: https://www.sciencedirect.com/science/article/pii/S2214139117300136 (accessed date: 23 May 2023).

Sitefane, GG, Banerjee, J, Mohan, D, Lee, CS, Ricca, J, Betron, ML & Cuco, RMM. 2020. Do male engagement and couples' communication influence maternal health care-seeking? Findings from a household survey in Mozambique. *BMC Pregnancy and Childbirth*. 20(1). doi.org/10.1186/s12884-020-02984-y.

Smith, A., Leach, G. and Rossouw, L. 2024. The timing of antenatal care access for adolescent pregnancies in South Africa. *African Journal of Primary Health Care and Family Medicine*, 16, 1, pp. 1–9.

© University of Venda

Smith, A., Leach, G., & Rossouw, L. (2024). The timing of antenatal care access for adolescent pregnancies in South Africa. African Journal of Primary Health Care & Family Medicine.

Sodo, A., Alemayehu, T. and Woldeyohannes, D. 2017. Early antenatal care attendance and its role in improving pregnancy outcomes. *BMC Pregnancy and Childbirth*, 17, pp. 1–9.

Sodo, P. and Bosman, A., 2017. Progress of the municipal ward-based primary healthcare outreach teams in Vhembe, Limpopo Province. *Southern African Journal of Public Health*, *2*(1), pp.18-22.

Suri, H., 2011. Purposeful sampling in qualitative research synthesis. *Qualitative research journal*, *11*(2), pp.63-75.

Tariku, M, Tusa, BS, Weldesenbet, AB, Bahiru, N & Enyew, DB. 2022. More Than One-Third of Pregnant Women in Ethiopia Had Dropped Out of Their ANC Follow-Up: Evidence From the 2019 Ethiopia Mini Demographic and Health Survey. *Frontiers in Global Women's Health*. 3. doi.org/10.3389/fgwh.2022.893322.

Teekhasaenee, T, & Kaewkiattikun, K. 2020. Birth Preparedness and Complication Readiness Practices Among Pregnant Adolescents in Bangkok, Thailand . *Adolescent Health, Medicine and Therapeutics*. Volume 11:1 8. doi.org/10.2147/ahmt.s236703.

The World Bank, 2021. *Adolescent fertility rate (births per 1,000 women ages 15–19)*. Available at: https://data.worldbank.org/indicator/SP.ADO.TFRT?locations=1W [Accessed 24 Apr. 2025].

The World Bank, 2021. Adolescent fertility rate (births per 1,000 women ages 15–19). https://data.worldbank.org/indicator/SP.ADO.TFRT?locations=1W

Thohoyandou Weather Forecast. n.d. Available at from: https://www.weather-forecast.com/locations/Thohoyandou/forecasts/latest.

© University of Venda

Tran, TK, Gottvall, K, Nguyen, HD, Ascher, H & Petzold, M. 2012. Factors associated with antenatal care adequacy in rural and urban contexts-results from two health and demographic surveillance sites in Vietnam. *BMC Health Services Research*. 12(1). doi.org/10.1186/1472-6963-12-40.

Tsawe, M. and Susuman, A.S., 2020. Factors associated with the upsurge in the use of delivery care services in Sierra Leone. Public Health, 180, pp.74-81.

Turnwait, O.M., 2020. Socio-Cultural Factors and Maternal Healthcare Practices Among Unmarried Young Adolescents in Akwa Ibom State, Nigeria (Doctoral dissertation).

Uwimana, A., Ntagungira, F. and Mukunzi, J. 2023. 'Adolescent pregnancy and antenatal care: Bridging the knowledge gap in rural health services', South African Journal of Health Studies, 30(1), pp. 88-96.

Uwimana, G., Elhoumed, M., Gebremedhin, M.A., Nan, L. and Zeng, L., 2023. Determinants of timing, adequacy and quality of antenatal care in Rwanda: a cross-sectional study using demographic and health surveys data. *BMC Health Services Research*, *23*(1), pp.1-12.

Vanden Broeck, J, Feijen-de Jong, E, Klomp, T, Putman, K & Beeckman, K. 2016. Antenatal care use in urban areas in two European countries: Predisposing, enabling and pregnancy-related determinants in Belgium and the Netherlands. *BMC Health Services Research*. 16(1). doi.org/10.1186/s12913-016-1478-3.

VhaVenda History, n.d., Thohoyandou, Accessed on: 25 May 2023, from http://luonde.co.za/vhuphani/ha-mphaphuli/thohoyandou/#.

Wallace, J., Jiang, K., Goldsmith-Pinkham, P., and Song, Z., 2021. Changes in racial and ethnic disparities in access to care and health among US adults at age 65 years. *JAMA Internal Medicine*, *181*(9), pp.1207-1215.

Wang W, Temsah G, Mallick L. (2017). The impact of health insurance on maternal health care utilisation: evidence from Ghana, Indonesia and Rwanda. Health Policy Plan. 2017;32(3):366–75.

© University of Venda

Whitworth, M. and Cockerill, R. 2014. 'Antenatal care and adolescent mothers: Addressing barriers to access in rural communities', Journal of Rural Health, 30(3), pp. 245-251.

Whitworth, M. and Cockerill, R., 2014. Antenatal management of teenage pregnancy. *Obstetrics, Gynaecology & Reproductive Medicine*, *24*(1), pp.23-28.

WHO, author. (2014). Adolescent Pregnancy 2014. [14 May 2023]. www.who.int/mediacentre/factsheets/fs364/en/

Williams, Rhys H., Courtney Ann Irby, and R. Stephen Warner 2017. "Dare to be different": How religious groups frame and enact appropriate sexuality and gender norms among young adults." In Gender, Sex, and Sexuality among Contemporary Youth: Generation Sex, pp. 1-22. Emerald Publishing Limited, 2017.

Willie, M.M., 2022. Differentiating Between Population and Target Population in Research Studies. *International Journal of Medical Science and Clinical Research Studies*, *2*(6), pp.521-523.

Wong Shee, A., Frawley, N., Robertson, C., McKenzie, A., Lodge, J., Versace, V. and Nagle, C., 2021. Accessing and engaging with antenatal care: an interview study of teenage women. BMC Pregnancy and Childbirth, 21(1), p.693.

Worku, D, Teshome, D, Tiruneh, C, Teshome, A, Berihun, G, Berhanu, L, & Walle, Z. 2021. Antenatal care dropout and associated factors among mothers delivering in public health facilities of Dire Dawa Town, Eastern Ethiopia. *BMC Pregnancy and Childbirth*. 21(1). doi.org/10.1186/s12884-021-04107-7.

World Health Organisation. (2017). WHO recommendations on antenatal care for a positive pregnancy experience. 2016. http://apps.who.int/iris/bitstream/handle/10665/250796/9789241549912-eng.pdf;jsessionid=5F5EF4CD9261B01A910E5F838D9EC01C?sequence=1. Accessed 25 May 2023).

World Health Organization (WHO), 2016. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: WHO. Available at: https://www.who.int/publications/i/item/9789241549912 [Accessed 24 Apr. 2025].

© University of Venda

World Health Organization 2016. *WHO recommendations on antenatal care for a positive pregnancy experience*. Geneva: World Health Organization.

World Health Organization 2017. *Trends in maternal mortality: 1990–2015*. Geneva: World Health Organization.

World Health Organization, 2016. *Global health estimates 2015: Deaths by cause, age, sex, by country and by region, 2000–2015*. Geneva: WHO.

World Health Organization, 2016. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: WHO.older women, according to local clinic-based research (Ebonwu et al., 2018).

Yadufashije, C., Habimana, A. and Muganga, E. 2017. 'Socioeconomic factors influencing antenatal care utilisation in rural Africa', Journal of Public Health in Africa, 8(1), pp. 45-51.

Yadufashije, D.C., Sangano, G.B. and Samuel, R., 2017. Barriers to antenatal care services in Africa. *Available at SSRN 3034150*.

Zagzebski, L., 2017. What is knowledge? The Blackwell guide to epistemology, pp.92-116.

Zhang, R, Li, S, Li, C, Zhao, D, Guo, L, Qu, P, Liu, D, Dang, S, et al. 2018. Socioeconomic inequalities and determinants of maternal health services in Shaanxi Province, Western China. *PLOS ONE*. 13(9):e0202129. doi.org/10.1371/journal.pone.0202129.

Ziblim SD, Yidana A, Mohammed AR. (2018). Determinants of antenatal care utilisation among adolescent mothers in the Yendi municipality of Northern Region, Ghana. Ghana J Geography8;10(1):78–97.

Ziblim, A.I., Yindana, I. & Mohammed, A., 2018. Adolescent pregnancy and health risks in sub-Saharan Africa: A case study from Ghana. Public Health Research, 8(2), pp.19–26. Available at: https://www.sciencepublishinggroup.com/journal/paperinfo?journalid=251&doi=10.11648/j.ajhr.20180602.11 [Accessed 24 Apr. 2025].

© University of Venda

ANNEXURE A: ETHICAL CLEARANCE

ETHICS APPROVAL CERTIFICATE

RESEARCH .AND IN OVATION
OFf'ICE OF THE DIRECI'OR

NAME Of R1ESEARCH!'R/INIVf:S:rtGATO.R:
Mr. TJ Nedi:ingc;ihe

SWUDENT NO:
19ocn369

PROJECTmIE: 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

NANI!:;	IN TIJLRIO:N & ID:EI'AIITMWIIT	KCL!Iii
D, A<:;I'4Klcu	IJI<1\I'IH Public Hecilh	s.u rvAi1>r
r,OI IIT lr ,.1c	IJtIlVtI,I P,...._ 11...-t,	CO ituoe I. -tut
IJ H•<nl'I<mh,.	UKIVEN, 11,:Mt,	in 'Iriaa'OII udtl!'n..I

Tvpe Ma ler's Re:s,emch
Ft • MInImal rt.sic *to* humanl. anlmal.s. *o,* Iha envtronmenl (Cdlegory 2j,
Ap oval r nod: April 2025 - Ap,ll 20'.26

n,.., Hu-rrmn and C: nTcal Triah le••a1ch Elhlic• Cammal • (KC111EC) h ·r•b}- appr0v1n yaur pra a-el as lndleol d '"bQ.,,,,



l:SSUED Ill':
U \li'RSlrY 0 **VENDA. RESEARCH** H'HICS **C:ONIMIITEE**
Dale co,nldat•d: Apt12-015

Na mi, QT Iha IICTHC Chaks!N'1Son ol Ih:e Comm **lee**: Prol' NS j',i\<uha u

Signature:



© University of Venda

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**

© University of Venda

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

© University of Venda

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.					

© University of Venda

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

© University of Venda

ANNEXURE C: PERMISSION LETTER

UNIVERSITY OF VENNDA

DEPARTMENT OF PUBLIC HEALTH

FACULTY OF HEALTH SCIENCES

PRIVATE BAG x5050

THOHOYANDOU

0950

THOHOYANDOU CLINIC

BLOCK G MAIN ROAD

0950

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

© University of Venda

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

© University of Venda

Master of Public Health Candidate

University of Venda

© 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.

© University of Venda

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.

© University of Venda

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.

© University of Venda

ANNEXURE E: LANGUAGE EDITING CERTIFICATE

,

.56 lipk.op

oort

Pretoria East

October 26, 2025

lear Sir/Mada

lililis. .to ce-~ iitlai iitle disserna·- ••led·•T,Kna edige, *Amrude* a d *IPeJEepwn* of *A.dole.scents* Regamir:Jg Almenst.aJ' Ca- . Boo.- *g in a erobe Dis-•* ·, of ,-*t_mpop* ·.f'ro1,,(i,e Nem::imgalhe Tsiko.,.lledi:di'alil. s11Jdem numb.er 1iS001369.,, s. eemed d . ''''''''''''''''''''''' --a mreraJI style amd loi I IIW. lime its S , □Jid. gr img the author final control over to accept or reject effected cliiange-s [Pri□r submission. pmYided illile cnanges. I r,erom,=n.nl!!:.,. are, eo1:ed i iitle text .amd iitle mg11t-ag-e . of .amaa)Ef)'table·51!:aJildard_

Please don't hesitate tc aomtacl: ·- - r an:,, 6fll{'1CJiie. s..

regards



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

ell number: 0725073783

Email address: rankakanenp@gmail.co

© University of Venda

ANNEXURE F: TURNITIN REPORT

Nedzingahe_TJ_Msc_thesis_Edited_NOV_2025_2.docx

ORIGINALITY REPORT

2%	4%	4%	1%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	cris.maastrichtuniversity.nl Internet Source	1%
2	Dongcheng Li. "Research Design in Chinese Medicine - Linking Social and Health Sciences", CRC Press, 2025 Publication	1%
3	phcfm.org Internet Source	1%
4	salford-repository.worktribe.com Internet Source	1%

© University of Venda