**PREVALENCE AND FACTORS CONTRIBUTING TO LATE ANTENATAL CARE BOOKING AMONGST PREGNANT WOMEN IN PRIMARY HEALTH CARE FACILITIES AT DIKGALE-MAMABOLO LOCAL AREA, LIMPOPO PROVINCE**

**by**

**Raesebe Johanna Molokomme**

MINI-DISSERTATION

Submitted in partial fulfilment of the requirements for the degree of

MASTER OF PUBLIC HEALTH

In the

Faculty of Health Sciences

(School of Health Care Sciences)

at the

UNIVERSITY OF LIMPOPO
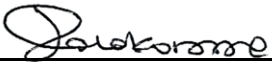
SUPERVISOR: Prof S.F Matlala

CO-SUPERVISOR: Dr T.S Ntuli

2021

**DEDICATION**

I dedicate this study to my mother and my father who wanted the best out of me to become something better in life through education, as they did not have an opportunity to be academically educated. I would also like to dedicate this study to my son, Lethabo for his unconditional love and support throughout my study.

**DECLARATION**

I declare that **PREVALENCE AND FACTORS CONTRIBUTING TO LATE ANTENATAL CARE BOOKING AMONGST PREGNANT WOMEN IN PRIMARY HEALTH CARE FACILITIES AT DIKGALE-MAMABOLO LOCAL AREA, LIMPOPO PROVINCE** (mini-dissertation) hereby submitted to the University of Limpopo, for the degree of Master of Public Health has not previously been submitted by me for the degree at this or any other university; that it  is my own work in design and execution, and that all materials contained herein has been duly acknowledged.

_____                                          01 July 2021

Raesebe Johanna Molokomme                                Date

**ACKNOWLEDGEMENTS**

**ABSTRACT**

**Background:** Late antenatal care (ANC) booking delays treatment and management of high-risk pregnancies, which may result to maternal deaths. Early ANC booking has been found to be effective in most of the pregnancy related risk factors that can be detected and managed at early stages of pregnancy.

**Aim:** The aim of the study was to investigate the prevalence and factors contributing to late ANC booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area.

**Methods:** Quantitative cross-sectional research approach was used. The study was conducted at Dikgale-Mamabolo local area, which consists of seven clinics at Polokwane, Limpopo province in South Africa. Only three clinics were purposefully selected for the study. The population of the study included pregnant women who were 18 years and above. The sample size consisted of 238 pregnant women who came for ANC services in primary health care facilities during the period of the study. Convenience sampling method was used to select pregnant women from the population. Data was collected using an adapted questionnaire. Data was analysed using Statistical Package for Social Sciences (SPPS) version 25.

**Results:** The results indicated that 86% of pregnant women booked antenatal care before five months gestational age and 14% booked after five months gestational age. Factors contributing to late ANC booking amongst pregnant women were marital status, educational level, employment status, mode of transport to clinic, lack of information, cultural beliefs, long distance to the clinic, long waiting time in the clinic and clinic operating hours.

**Conclusion:** Late ANC booking remains a major public health issue. The study showed that lack of information and cultural beliefs are major contributing factors to late ANC booking. It is recommended that awareness campaigns should be conducted in the community and schools to empower women with knowledge about ANC services.

**Key concepts**

Late antenatal care booking, personal factors, primary health care

TABLE OF CONTENTS

**LIST OF TABLES**

**LIST OF FIGURES**

**DEFINITION OF CONCEPTS**

**Contributing factor**

Contributing factor refers to one of the contributing causes in any action (Mosby's Medical Dictionary, 2013). In this study, contributing factor refers to anything that contributes to late ANC booking by pregnant women attending ANC in selected primary health care clinics at Dikgale-Mamabolo local area.

**Late antenatal care booking**

Late ANC booking refers to when a pregnant woman makes first visit at an ANC clinic after 20 weeks of gestation (Sellers, 2010). In this study, late ANC booking refers to when a pregnant woman makes first ANC visit after 20 weeks of gestation at selected primary health care clinics at Dikgale-Mamabolo local area.

**Pregnant woman**

Pregnant woman refers to the woman who has a baby growing inside her body (Longman Dictionary of Contemporary English, 2012). In this study, pregnant woman refers to pregnant woman who comes for first ANC visit at the selected primary health care clinics at Dikgale-Mamabolo local area.

**Prevalence**

Prevalence refers to the number of all new and old cases of a disease or occurrences of an event during a certain period (Mosby's Medical Dictionary, 2013). In this study, prevalence refers to the number of all new and old cases of pregnant women who booked antenatal care late in the selected primary health care clinics at Dikgale-Mamabolo local area.

**Primary health care facility**

Primary health care facility refers to the facility that renders an essential health care that is based on scientifically sound and socially acceptable methods and technology, which make universal health care accessible to all individuals and families in a community (World Health Organization, 1978). In this study, primary health care facility refers to the selected primary health care clinics at Dikgale-Mamabolo local area.

**LIST OF ABBREVIATIONS**

AIDS:         Acquired Immunodeficiency Syndrome

ANC:          Antenatal Care

ART:          Antiretroviral Therapy

BANC:         Basic Antenatal Care

DHIS:         District Health Information System

DOH:          Department of Health

HCT:          HIV Counselling and Testing

HIV:          Human Immunodeficiency Virus

MCWH:         Maternal, Child and Women's Health

MMR:          Maternal Mortality Ratio

PHC:          Primary Health Care

PICT:         Provider Initiated Counselling and Testing

PMTCT:        Prevention of Mother to Child Transmission

SDG:          Sustainable Development Goal

TB:           Tuberculosis

WHO:          World Health Organization

# CHAPTER 1
# OVERVIEW OF THE STUDY

## 1.1 INTRODUCTION AND BACKGROUND

Antenatal care (ANC) is the most important method for detecting pregnancy problems in the early period and preventing unwanted outcomes of pregnancy or complications (World Health Organization, 2016). It is a critical element for reducing maternal mortality and providing pregnant women with a broad range of health promotion and preventive health services. Health promotion and preventive services include physical examination, monitoring blood pressure, urine testing, blood testing, Human Immunodeficiency Virus (HIV) testing, vaccination against neonatal tetanus, provision of iron supplements and screening for high risk factors (Ndidi & Oseremen, 2010).

The numbers of ANC visits vary depending on the country. Western Europe and North America ANC includes 12 to 16 visits to health care services by pregnant woman, as well as provider visits to her home (Agus & Horiuchi, 2012). Nigeria recommends four ANC visits and the proportion of pregnant women who attended the recommended visits increased from 45% in 2008 to 51% in 2013 (Aliyu & Dahiru, 2017). World Health Organization (WHO) recommends a minimum of four visits for a woman with a normal pregnancy, that is one visit each in the first and second trimester, and two visits in the third trimester. Follow-up visits should be scheduled for 20, 26-28, 32-34, 38 weeks and 41 weeks if still pregnant by then. Women with high risk pregnancies are referred from primary health care to hospital level (Department of Health, 2016).

Conditions such as hypertension in pregnancy, antenatal and postnatal haemorrhage continued to be the major cause of death in pregnancy and childbirth among South African women, and HIV/AIDS account for 49% of maternal mortality. These conditions could be addressed if women book for ANC at early stages of pregnancy. Early ANC booking has been found to be effective in which most pregnancy related risk factors can be detected and managed at early stages of pregnancy (Department of Health, 2016). Despite the widespread availability of free antenatal care services at the clinic, most women in rural South African areas attend their first ANC clinic late in pregnancy

and fail to return for any follow-up care, potentially leading to avoidable peri-natal and maternal complications (Myer & Harrisson, 2010).

Every day, approximately 830 women die from preventable causes related to pregnancy and childbirth, and every year 4,300 mothers die due to complications of pregnancy and childbirth in sub-Saharan Africa. Twenty thousand babies are stillborn and twenty-three thousand die in their first month of life (WHO, 2016). The primary causes of maternal death are haemorrhage, hypertension, infections and indirect causes such as pre-existing medical disorders (HIV, diabetes) and trauma during pregnancy. Ninety-nine percent of all maternal deaths occur in developing countries (WHO, 2016).

Two regions, sub-Saharan Africa and South Asia, account for 88% of maternal deaths worldwide. Sub-Saharan Africa suffers from the highest Maternal Mortality Ratio (MMR), which is 546 maternal deaths per year, accounting for 66% of global total. South Asia follows with MMR of 182 maternal deaths per year, accounting for 22% of the global total (United Nations International Children's Emergency Fund, 2017). Maternal mortality is higher in women living in rural areas among poorer communities. Young and adolescents' females face a higher risk of complications and death because of pregnancy than other women. Skilled care before, during and after childbirth can save the lives of women and new-born babies. Between 2016 and 2030, as part of the Sustainable Development Goals (SDG), the target is to reduce the global MMR to less than 70 per 100 000 live births (WHO, 2016).

Late ANC booking refers to when a pregnant woman makes first visit at antenatal clinic after 20 weeks of gestation (Sellers, 2010). The study conducted in India by Pathak et al. (2010) found that physical distance to health care facilities, lack of transportation and costs are major barriers to accessing ANC. According the study conducted in Zambia more than 50% of Zambian women book for ANC late (Sinyange et al., 2016). The study conducted in Nigeria by Ndidi and Oseremen (2010) found that 65, 5% of pregnant women booked ANC late due to ignorance and misconception. The study conducted in Mpumalanga province found that factors contributing to late ANC booking were lack of information, ignorance, marital status, distance to health care facilities, nurses' attitude, clinic operating hours and long waiting time (Mkhari, 2016). In the study conducted in Limpopo province by Ragolane (2017) found that factors

contributing to late ANC booking were unplanned pregnancy, ignorance, cultural and religious beliefs, long waiting time, midwives' attitude and lack of resources. The study aimed to investigate the prevalence and factors contributing to late ANC booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area, Limpopo province.

## 1.2 PROBLEM STATEMENT

District Health Information System (DHIS) statistics show an increase rate of late ANC bookings amongst pregnant women at Dikgale-Mamabolo local area PHC facilities. According to DHIS, between January 2018 and December 2018, there were 470 pregnant women who booked for ANC at selected PHC facilities at Dikgale-Mamabolo local area, of which 116 pregnant women booked after 20 weeks gestation. Among those pregnant women, some of those who booked ANC late were found to be presenting with co-morbidities such as HIV, TB and asthma. Some were classified with high risk conditions such as pregnancy induced hypertension, anaemia, chronic medical conditions and history of previous operations of the reproductive system. High risk pregnancies are pregnancies that introduce an increased threat or danger to the life of the mother and her unborn baby (Sellers, 2010). Pregnant women presenting with high risk pregnancies are often referred to the nearest tertiary hospital for further management. Late ANC booking delays treatment and management of high-risk pregnancies, which may result to maternal deaths. The researcher has observed that most pregnant women book ANC at late stages of pregnancy at Dikgale-Mamabolo local area. It was against this background that the study was conducted.

## 1.3 LITERATURE REVIEW

Literature relevant to the prevalence and factors contributing to late ANC booking amongst pregnant women was reviewed and will be discussed in detail in Chapter 2.

## 1.4 PURPOSE OF THE STUDY
### 1.4.1 Aim of the study
The aim of this study was to investigate the prevalence and factors contributing to late ANC booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area.

### 1.4.2 Objectives of the study

- To determine the demographic profile of pregnant women presenting for ANC booking in primary health care facilities at Dikgale-Mamabolo local area.
- To determine prevalence of late ANC booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area.
- To determine factors contributing to late ANC booking amongst pregnant in primary health care facilities at Dikgale-Mamabolo local area (personal, cultural, environmental, organizational factors).

## 1.5 RESEARCH QUESTION

What is the prevalence and factors contributing to late ANC booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area?

## 1.6 RESEARCH METHODOLOGY

This account of the methodology is only a summary of what is comprehensively discussed in Chapter 3. A quantitative research method and cross-sectional study design were used to conduct the study. The study was conducted at Dikgale-Mamabolo local area in three selected primary health care facilities (J.Mamabolo clinic, Dikgale clinic and Sebayeng clinic). Sample size consisted of 238 pregnant women and convenience sampling method was used to select the participants from the population. Data collection means the precise systematic gathering of information relevant to specific research objectives or questions (Burns & Grove, 2015). Data was collected using an adapted questionnaire. Data was analysed using the SPSS version 25.

## 1.7 RELIABILITY AND VALIDITY

### 1.7.1 Reliability

Reliability is the degree and consistency or dependability with which an instrument measures an attribute (Polit & Beck, 2012). To ensure reliability, a pilot study was conducted among 10 participants at PHC facility (Seobi-Dikgale clinic) which was not selected for the study at Dikgale-Mamabolo local area. The participants did not answer some of the questions and the questionnaire was modified.

**1.7.2 Validity**

Validity is the ability of an instrument to measure the variable that it is intended to measure (Brink et al., 2012).

**1.8 BIAS**

Bias refers to any influence that produces a distortion in the results of a study or that strongly favours the outcome of a finding of a research study (Brink et al, 2012). The researcher ensured that the target population was properly defined, and the sample size was calculated properly using a formula to eliminate sampling bias.

**1.9 ETHICAL CONSIDERATIONS**

Ethical clearance to conduct the study was granted by Turfloop Research Ethics Committee. Permission to collect data in the three selected primary health care facilities was granted by the Department of Health. Consent was obtained from the participants prior to data collection.

**1.10 SIGNIFICANCE OF THE STUDY**

Department of Health may benefit from the study as the findings may inform the policy makers to amend ANC policies.

**1.11 CONCLUSION**

This chapter introduced the study, problem statement, the purpose and summarised the methodology of how the study was conducted. Chapter 2 will review the literature relevant to this study.

# CHAPTER 2
# LITERATURE REVIEW

## 2.1 INTRODUCTION

Literature review is a critical summary of existing knowledge on a topic of interest, often prepared for the research problem to be placed in context (Brink et al., 2012). The researcher conducted the literature review to refine certain parts of the study, specifically the problem statement, design and data analysis process. It helped the researcher to compare the findings of the existing studies with those of the study at hand. In this study, the literature review focused on the prevalence and factors contributing to late ANC booking. The following factors will be discussed in the literature review: personal, cultural, environmental and organizational factors.

## 2.2 PREVALENCE OF LATE ANTENATAL CARE BOOKING
### 2.2.1 Global prevalence of late antenatal care booking

The study conducted in China by Tang et al. (2019) found that 18.5% women received ANC less than five times and 81.4% used ANC at least five times during the first delivery. The study conducted in Tanzania about the prevalence and factors associated with late ANC visit among pregnant women in Lushoto by Njiku et al. (2017) found that out of 240 participants, 70.4% (n=169) participants booked late for ANC. The study conducted in Ethiopia by Ejeta et al. (2017) indicates that the prevalence of late ANC booking was 81.5% (n=343).

The study conducted in Tanzania by Njiku et al. (2017) showed that the prevalence of late ANC booking has gone up from 90% to 98%. Despite this increase, only 24% of pregnant women were reported to begin their ANC booking during the first trimester as recommended. Another study conducted in Tanzania found that 22.9% of pregnant women booked ANC early and 77.1 % booked late (Tanzania Demographic and Health Survey and Malaria Indicator Survey, 2016).

### 2.2.2 Prevalence of late antenatal care booking in Africa

The study conducted in Nigeria by Oluwatosin et al. (2013) about factors influencing ANC booking in Ibadan revealed that only 14 women (9.4%) booked at first trimester while 62.4% (n=93) and 28.2% (n=42) booked at second and third trimesters

respectively. The study conducted in Uganda about timing and reasons for coming late for the first ANC visit by pregnant women at Mulago hospital, Kampala by Kisuule et al. (2013) found that 72.7% (n=291) of the study participants did not know the right gestation age at which a pregnant woman should start attending ANC. The study conducted in Nigeria by Adekanle and Isawumi (2008) found that the prevalence of late ANC booking was 82.6%.

The study conducted in Zambia by Banda et al. (2012) about factors associated with late ANC booking in selected rural and urban communities of the Copperbelt Province shows that the prevalence of late ANC booking was 72.0% (n=221) and 68.6% (n=210) in rural and urban districts respectively. The study conducted in Ghana by Asundep et al. (2013) found that there was low prevalence of late ANC booking (19%) among pregnant women. Early ANC booking in Kenya is low at 15%, leaving most women (85%) to late booking (Kenya National Bureau of Statistics, 2010).

### 2.2.3 Prevalence of late antenatal care booking in South Africa

The study conducted in a rural and urban setting in South Africa about psychosocial factors associated with early booking and frequency of ANC visits revealed that prevalence of early ANC booking among urban women was 46% and 84% for adequate ANC frequency. Prevalence of early ANC booking among rural women was 45% and 78% for adequate ANC frequency (Muhwava et al., 2016).

The study conducted in Gauteng Province  South Africa by Matyukira (2014) about knowledge and utilization of ANC services by pregnant women at Ekurhuleni district shows that 56.7% (n=51) of the pregnant women started ANC after the first three months and only 43.3% (n=39) booked ANC in the first trimester.

### 2.3 FACTORS CONTRIBUTING TO LATE ANTENATAL CARE BOOKING

### 2.3.1 Personal factors

The study conducted in Europe by Feijen-de Jong et al. (2011) found that factors contributing to late ANC bookings were low maternal age, low educational level, non-marital status and high parity.

Teenage mothers with lower parity tend to present late for ANC booking as compared to older mothers with higher parity. This has been associated with the fact that teenage mothers are more likely to have unplanned pregnancies and lack information and resources to access ANC services (Ndidi & Oseremen, 2010). A study conducted in Ghana by Asundep et al. (2013) on determinants of access to ANC and birth outcomes found the level of education of the pregnant woman and that of her husband has been identified to be a barrier in accessing ANC.

The study conducted by Sinyange et al. (2016) in Zambia revealed that women with higher education were 55% less likely to book for ANC late compared to women with no education. Women aged 20-34 years were 30% more likely to book earlier than women younger than 20 years. The study conducted in Nigeria by Ndidi and Oseremen (2010) revealed that 73.6% of pregnant women booked ANC in the second trimester and 26.4% in the third trimester.

The study conducted in Gauteng province South Africa about knowledge and utilization of antenatal care services by pregnant women revealed that women and partners with secondary education and more tend to present earlier for ANC booking than those with primary education and below. Educated women are more informed about their health, have more job opportunities and thus more likely to afford health care services (Matyukira, 2014).

The study conducted in Limpopo province South Africa by Maluleke (2017) about knowledge and perceptions on antenatal care services of pregnant women, revealed that 86.0% of pregnant women have adequate knowledge regarding ANC services.

### 2.3.2 Cultural factors
The study conducted in Indonesia found that women who were encouraged by their family to receive ANC had higher traditional beliefs scores compared to those who encouraged themselves (Agus & Horiuchi, 2012). Another study conducted in Cameroon by Warri and George (2020) about perception of pregnant women of reasons for late ANC booking found that pregnant women book ANC late due to fear of bewitchment and cultural beliefs.

The study conducted by Ngomane and Mulaudzi (2010) about indigenous beliefs and practices that influence the delayed attendance of antenatal clinics by women in Limpopo province South Africa found that cultural beliefs contribute to late ANC booking as some women believe that pregnancy need to be preserved with herbs first and attends ANC services during late stages of pregnancy.

### 2.3.3 Environmental factors

The study conducted in Nepal by Neupane and Doku (2012) found that pregnant women in rural residences were more likely to book ANC late due to poor socioeconomic background. Another study conducted in China by Tang et al. (2019) found that 78.1% of the participants booked ANC late as the result of migration to work and do business and 66.4% of the participants had migration experience before the pregnancy.

The study conducted by Shirin (2012) about knowledge, attitude and practice of maternal health care among the married women in rural area of Bangladesh found that 96.3% of rural married women had positive attitude towards ANC services.The study conducted in Zambia found that factors associated with late ANC booking in selected rural communities of Copperbelt province of Zambia have resulted in 19% of women booking ANC by their fourth month of pregnancy. An estimated 21% of pregnant women in urban and 18% in rural districts make their first ANC visit by 4th month of pregnancy (Banda et al., 2012).

The study conducted in Zambia revealed that less than 47% of pregnant women have four or more ANC visits. Of these, the majority are urban areas at 60% compared to rural areas at 44% (Banda et al., 2012). According to the study conducted by Ebonwu et al. (2018), about the determinants of late ANC presentation in rural communities of Capricorn district in Limpopo province South Africa and peri-urban communities of Tlokwe sub-district in North-West province South Africa shows that 51% of rural women and 28% of peri-urban women presented late for first ANC.

### 2.3.4 Health system factors

Inadequate numbers of reproductive health specialists to manage complicated pregnancies and deliveries, and inadequate quality and access to all levels of obstetric

care and other reproductive health care services contribute to maternal mortality (World Health Organization, 2016). The study conducted in Namibia by Banda et al. (2012) revealed that several factors have been found to contribute to late ANC booking among pregnant women e.g. lack of privacy at health institutions and long distance to health facilities.

The study conducted in Gauteng province South Africa by De Vaal (2011) found that poor nurse-patient relationship was associated with late ANC booking. The study conducted in inner-city Johannesburg South Africa about women's ANC booking experience found that the delay by health care providers in the provision of health care services contributes to late ANC booking among pregnant women (Solarin & Black, 2013).

## 2.4 CONSEQUENCES OF LATE ANTENATAL CARE BOOKING

Approximately 303,000 women and adolescent girls died from pregnancy and childbirth-related complications in 2015 and 2.6 million babies were stillborn. Ninety-nine percent of the maternal deaths and 98% of child deaths occurred in low and middle- income countries (World Health Organization, 2016). The study conducted in Nigeria by Sanda (2014) found that underutilisation of ANC services is associated with higher maternal and neonatal morbidity, such as eclampsia, pre-term birth and low birth weight.

The study conducted in Bangladesh by Shirin (2012) found that 88.3% of the participants practiced home delivery while 10.3% delivered at the hospital. Another study conducted in sub-Saharan Africa found that 33% of perinatal mortality that occurs at birth are the result of avoidable causes such as late ANC booking (Blencowe et al., 2016).

The main direct causes of maternal mortality in Kenya are haemorrhage, infection, hypertensive disorders in pregnancy, obstructed labour and abortion. All these direct causes of maternal mortality are further aggravated by the three delays: delay in deciding to seek appropriate care, delay in reaching the appropriate health facility and delay in receiving adequate emergency care once at the facility. These delays could be reduced if pregnant women book for ANC early and are prepared for birth and

complications, thus indirectly contributing to a reduction in maternal morbidity and mortality (Kenya National Bureau of Statistics, 2010).

## 2.5 PUBLIC HEALTH INTERVENTIONS TO REDUCE LATE ANTENATAL CARE BOOKING

World Health Organization (2016) suggests that efforts to reduce maternal mortality must focus on adequate ANC services and medical management. Provision of basic ANC is a key strategy to improve the care of pregnant women and achieve the recommended four ANC visits by the World Health Organization. Currently 71% of women worldwide receive ANC and in industrialised countries, more than 95% of pregnant women have access to ANC. In sub-Saharan Africa 69% of pregnant women have at least one ANC visit more than in South Asia at 54% (World Health Organization, 2016).

 A woman should visit her health care provider as soon as she suspects pregnancy, even as early as the first missed menstrual period. Women who present to primary care clinics and are found to be pregnant must be issued with an antenatal card and receive first visit ANC (Department of Health, 2016). World Health Organization (2016) recommends the implementation of community mobilization and antenatal home visits to improve ANC utilization and perinatal health outcomes, particularly in rural settings with low access to health services.

## 2.6 CONCLUSION

This chapter discussed the literature that is relevant to the study. The next chapter describes the research methodology.

# CHAPTER 3
# RESEARCH METHODOLOGY

## 3.1 INTRODUCTION

This chapter outlines the research methodology focusing on the research method and design, population, sampling, data collection, data analysis and ethical considerations for the study.

## 3.2 STUDY METHOD AND DESIGN

Quantitative research approach was conducted in primary health care facilities at Dikgale-Mamabolo local area. Quantitative research refers to the testing of objective theories by examining the relationship among variables (Creswell & Creswell, 2018). Information about the prevalence and factors contributing to late ANC booking was determined. Cross-sectional study design was used to determine the prevalence and factors contributing to late ANC booking in PHC facilities. Cross-sectional study is a research study that collects data on participants at one point in time (Brink et al., 2012). Data was collected from 238 pregnant women in primary health care facilities at one point in time using an adapted questionnaire.

### 3.2.1 Study site

The study was conducted in selected PHC facilities at Dikgale-Mamabolo local area. The local area has seven PHC facilities, which are J. Mamabolo clinic, Dikgale clinic, Seobi-Dikgale clinic, Sebayeng clinic, Mamushi clinic, Block 14 clinic and Soetfontein clinic. Only three facilities were purposefully selected for the study as they are the busiest clinics, which are J. Mamabolo clinic, Dikgale clinic and Sebayeng clinic. The other four clinics were excluded from the study as they have less population. Languages spoken at Dikgale-Mamabolo local area are Sepedi and English, although there are foreign nationals from countries such Zimbabwe, Mozambique, Somalia and Ethiopia. The selected PHC facilities at Dikgale-Mamabolo local area are situated at Polokwane east sub-district, Polokwane, Limpopo province. The facilities are about 14km, 18km and 16km respectively from Mankweng Hospital. Some of the clients have to travel more than 5km to reach the facilities. Services rendered in PHC facilities include ANC services, maternal and child health care services, HIV Counselling and Testing (HCT) services, Prevention of Mother to Child Transmission (PMTCT)

services, Antiretroviral Therapy (ART) services, Tuberculosis (TB) services, adolescents and youth friendly services, male medical circumcision services, condom distribution services, chronic conditions services and minor ailments services among others. The map of Dikgale-Mamabolo local area is shown below as Figure 1.
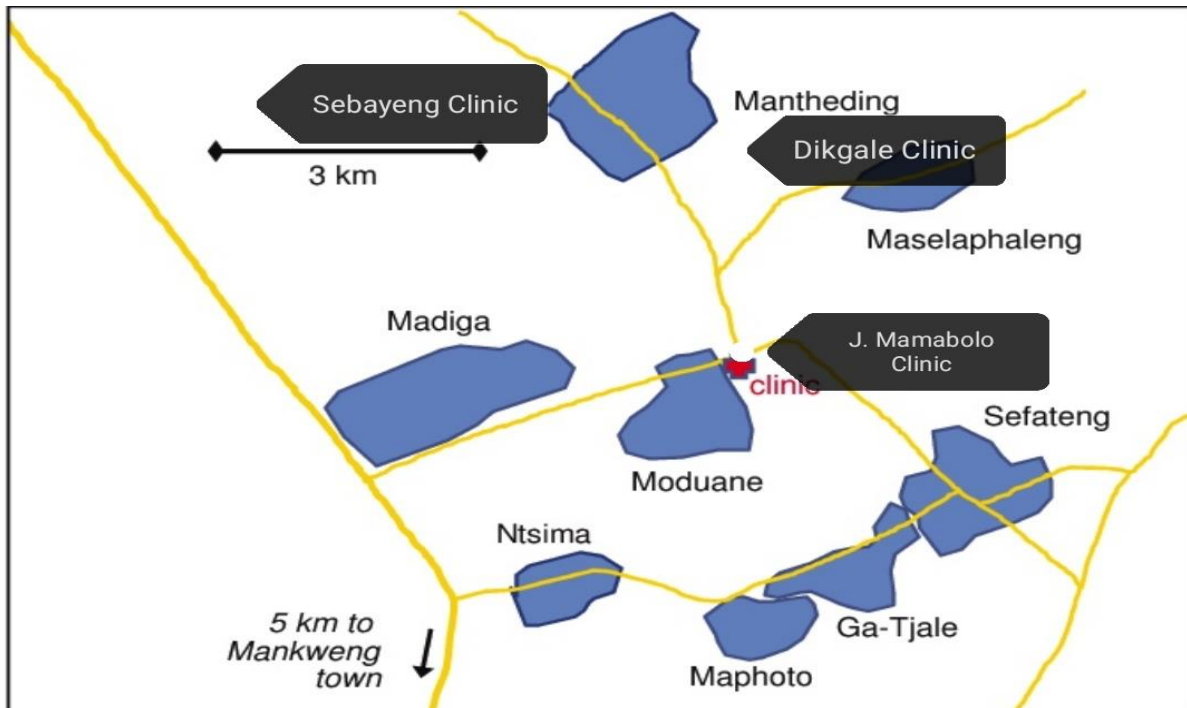


Figure 3.1: Map of Dikgale-Mamabolo local area

### 3.2.2 Population

For this study, the target population included pregnant women who came for ANC services in selected PHC facilities at Dikgale-Mamabolo local area. Population is all elements that meet the sample criteria for inclusion in a study (Burns & Grove, 2015). Four hundred and seventy pregnant women were seen at the three selected facilities from January to December 2018 (personal communication with information officer). A sample size of 238 was required for the study, which was calculated based on the 470 pregnant women seen at the three selected facilities from January to December 2018.

### 3.2.3 Sampling

Convenience sampling was used in selected PHC facilities to select the participants for the study. The researcher selected pregnant women that were available at selected PHC facilities on daily basis until the required sample size was reached. Sampling is the process of selecting a portion to represent the entire population of interest to the

researcher (Polit & Beck, 2012). Convenience sampling is a non-probability sampling procedure that involves the selection of the most readily available people or objects for a study (Brink et al., 2012). A sample size of 238 was required for the study, which was calculated based on the 470 pregnant women seen at the three selected facilities from January to December 2018, sampling error of 5% and non-response rate of 10%. The sample size was calculated based on Yamane's formula (1967):

$$n = \frac{N}{1 + N(e)^2}$$ = 470/1+470(0.05) ² = 216

The calculated sample size based on the given information is 216. When you add 216 and 10% of non- response rate it gives 238.

Where:

e is the sample size

N is the population size of pregnant women seen from Jan-Dec 2018 in the three selected facilities (i.e. 470).

E is the sampling error (5%)

The sample was distributed proportional to the size of the population (Table 1).

**Table 3.1: Sample Size distribution**

| Clinic | Total Population | Sample Size |
|---|---|---|
| J. Mamabolo | 120 | 61 |
| Dikgale | 170 | 86 |
| Sebayeng | 180 | 91 |
| Total | 470 | 238 |

A total number of 238 sample size was distributed among the three selected PHC facilities and the participants were conveniently selected from the population.


### 3.2.4 Inclusion criteria

All pregnant women who came for ANC booking in the selected PHC facilities and have voluntarily consent to participate were included in the study.

### 3.2.5 Exclusion criteria

Pregnant women who came for ANC booking but are under 18 years of age and mentally unstable as vulnerable people and cannot consent for themselves, and those who cannot speak English or Sepedi were excluded from the study.

### 3.3 DATA COLLECTION

An adapted questionnaire was used to collect data and it was translated from English to Sepedi language. The researcher adapted a questionnaire from a study by Mkhari (2016). The researcher removed some of the questions from an adapted questionnaire and added her own questions and added section D on knowledge about ANC services. The questionnaire is attached as Appendix A and the translated version is attached as Appendix B.

### 3.4 DATA ANALYSIS

Data was captured and analysed using Statistical Package for Social Sciences (SPSS) version 25. The frequencies and percentages were used to interpret categorical variables, mean and standard deviation were used to interpret continuous variables. Comparison between groups was performed using student t-test and chi-square test for continuous and categorical variables. A p-value of less than 0.05 was considered statistically significant.

### 3.5 RELIABILITY AND VALIDITY

### 3.5.1 Reliability

Reliability is the degree and consistency or dependability with which an instrument measures an attribute (Polit & Beck, 2012). To ensure reliability, a pilot study was conducted among 10 participants at PHC facility (Seobi-Dikgale clinic) which was not selected for the study at Dikgale-Mamabolo local area.

### 3.5.2 Validity

Validity is the ability of an instrument to measure the variable that is intended to measure (Brink et al., 2012).

*3.5.2.1 Content validity*

Content validity refers to the extent to which measurement method or scale includes all major elements or items relevant to the construct being measured (Burns & Grove, 2015). The researcher adapted a questionnaire and presented it to the supervisors for evaluation of the content validity of the instrument.

*3.5.2.2 Criterion-related validity*

Criterion-related validity refers to a pragmatic approach to establish a relationship between the scores on the instrument in question and other external criteria (Brink et al., 2012). The researcher conducted literature review to ensure criterion-related validity.

## 3.6 BIAS

Bias refers to any influence that produces a distortion in the results of a study or that strongly favours the outcome of a finding of a research study (Brink et al., 2012).

### 3.6.1 Researcher bias

Researcher bias can occur when a researcher tries to interfere with the participants' answers or making an opinion on respondents (Creswell, 2014). The researcher did not interfere with the participants' answers to eliminate researcher bias, although the researcher was around to clarify questions.

### 3.6.2 Sampling bias

Sampling bias refers to the over-presentation or under-presentation of a segment of the population, which will then impact on the purpose of the study and its validity (Brink et al., 2012). To eliminate sampling bias, the researcher ensured that the target population was properly defined, and the sample size was calculated properly using a formula.

## 3.7. ETHICAL CONSIDERATIONS

### 3.7.1 Permission to conduct the study

The proposal was submitted to Faculty Higher Degrees Committee for review. Ethical clearance to conduct the study was obtained from Turfloop Research Ethics Committee (Appendix H: Ethics clearance certificate). Permission to conduct the study

was granted by the Department of Health (Appendix I: Permission letter from Department of Health). Permission to conduct the study was also granted by Assistant Manager PHC Dikgale-Mamabolo local area and operational managers of the selected facilities (Appendix J: Permission letter from Capricorn District).

### 3.7.2 Informed consent

The participants were provided with written detailed information about the study which included the purpose of the study, explanation of procedures and participant's rights (Appendix D & E: Information sheets). Written consent was obtained from the participants before they can be given questionnaires and for data sharing. Consent form was translated from English to Sepedi (Appendix F & G: Consent forms). Informed consent for handling and storing confidential information was obtained from the participants. Participation was voluntary and the participants were reassured that they will not be victimized if they refuse to partake in the study. The participants were assured that they can withdraw from the study at any time if they so wish.

### 3.7.3 Privacy

The participants were given questionnaires in a private room free from distractions. The researcher avoided use of participants' identities; instead used codes and numbers to ensure anonymity in the study. Confidential data was securely stored, and unauthorised access was restricted. The results of the study were shared and published with consent from the participants.

### 3.7.4 Anonymity and confidentiality

Information shared by the participants were kept confidential at all the time. The participants' names and facility names were not stated during data collection. Anonymity was maintained through use of codes.

### 3.7.5 Addressing harm

The participants were treated with respect throughout the study. Confidential information shared by the participants was securely stored and unauthorised access to data was restricted, to protect the participants from victimization. The participants were allowed to quit the study any time they want. The study contained minimal risks and maximum benefits to the participants. The researcher did not encounter any of

the participants in an event of emotional upset that requires referral to professional nurses and social worker for counselling. The researcher ensured that the study complies with the standard operating procedures.

## 3.8 CONCLUSION

This chapter outlined the methodology used in the study. The next chapter outlines the presentation and interpretation of the findings of the study.

# CHAPTER 4
# PRESENTATION AND INTERPRETATION OF THE FINDINGS

## 4.1 INTRODUCTION

The previous chapter outlined the methodology used in this study. In this chapter, the results of the present study are presented and interpreted. The main objectives of this study were to determine demographic profile, the prevalence of late ANC booking and the factors that contribute to late ANC booking amongst pregnant women at Dikgale-Mamabolo area.

## 4.2 DEMOGRAPHIC PROFILE OF WOMEN PRESENTING FOR ANTENATAL CARE

In this section, the socio-demographic information of all women utilizing the three healthcare facilities are discussed, not only those who presented late for ANC booking. Two hundred and thirty-one pregnant women participated in this study. Seven questionnaires were having incomplete information and they were not included in the study. Of these, nearly half which is 40% (n=92) were selected from Sebayeng clinic, 33% (n=77) from Dikgale clinic and 27% (n=62) from J. Mamabolo clinic. The age of the participants range from 18 to 41 years with a mean age of 26.3±4.9 years. The detail age distribution of the participants is illustrated in Figure 4.1.
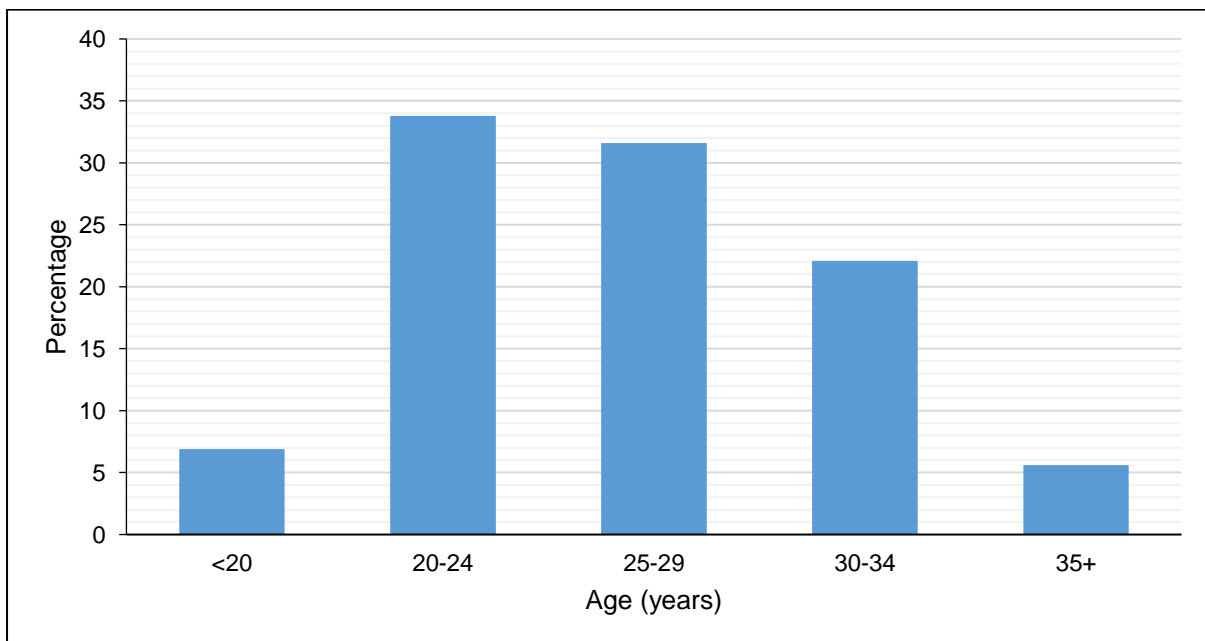


Figure 4.1: Age Distribution

The majority at (87%, n=200) were unmarried and only 12% (n=28) were married. Few (1%, n=3) cases were divorced/widowed.
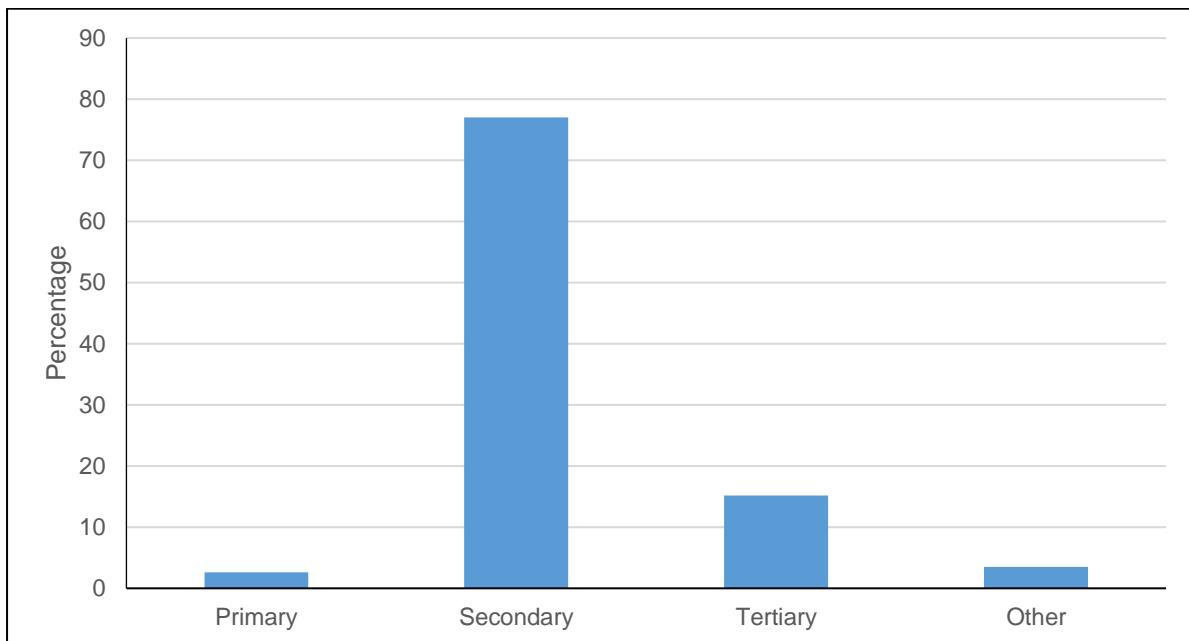


Figure 4.2: Level of education

Seventy-seven per cent of the participants had secondary education (Figure 4.2).
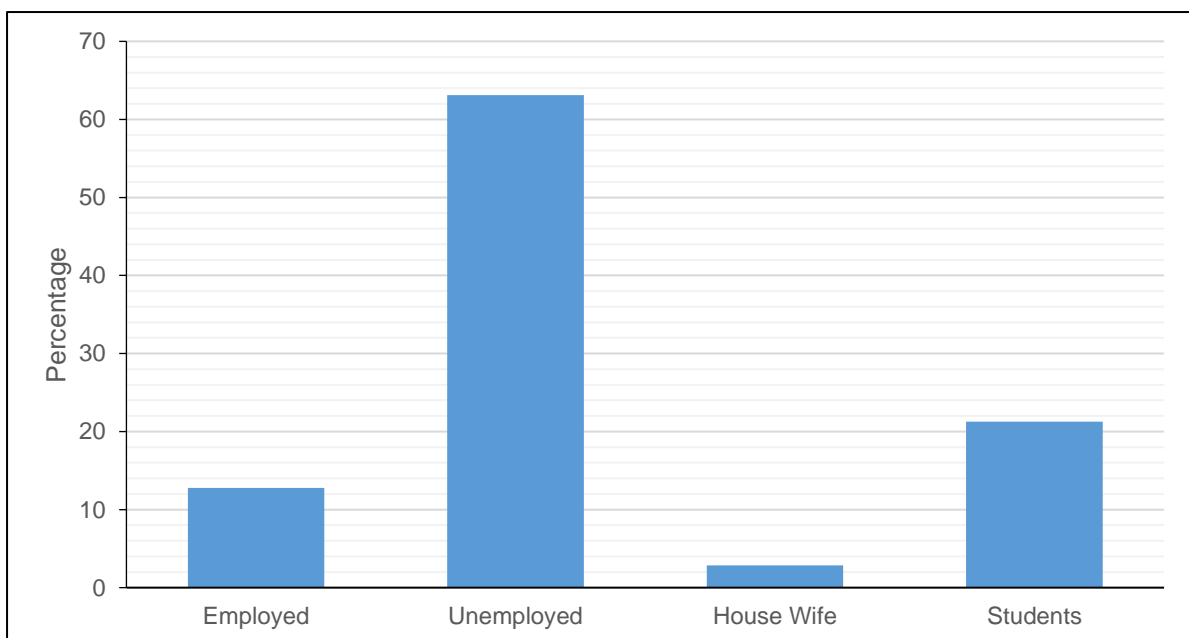


Figure 4.3: Employment Status

Thirty-nine percent of the participants did not indicate their employment status. Of those who indicated their employment status (n=141), 39% (n=89) were unemployed and only 8% (n=18) were employed (Figure 4.3). Two-thirds (70%, n=161) of the

participants use taxi from home to the health facility/clinic and only 29% (n=66) said they walk. Few (1%, n=3) of the participants said they used their own cars from home to the health facility/clinic. One of the participants did not indicate the mode of transportation used.

## 4.3 PREVALENCE AND FACTORS RELATED WITH LATE ANTENATAL CARE BOOKING

The participants were asked this question "*What was your gestational age at first antenatal care booking with the current pregnancy*?" Few (5%, n=13) of the participants did not answer the question. Of those who answered the question (n=218), the majority (86%, n=187) said their gestational age at first ANC booking with the current pregnancy was five or less months and only 14% (n=31) was more than five months (Figure 4.4).
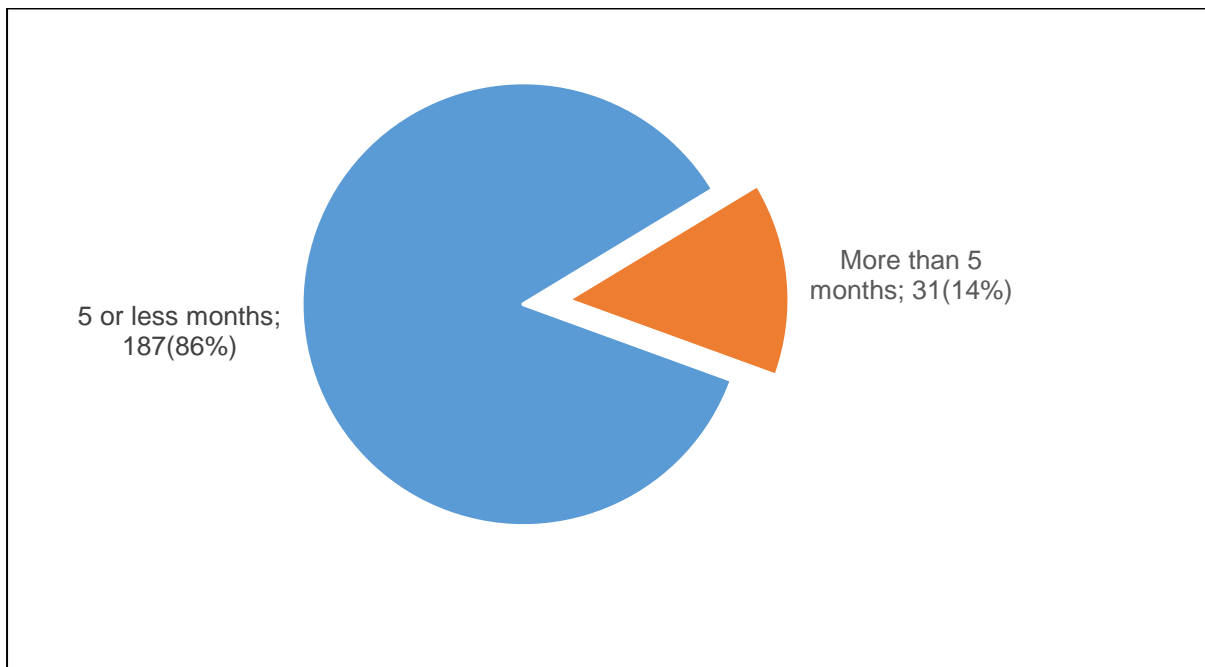


Figure 4.4: Gestational age at first antenatal care booking with the current pregnancy

The participants were also asked this question "*If this is your first antenatal care booking today, what is your gestational age*?" One hundred and eighty-five pregnant women answered this question. More than two-thirds (84%, n=155) of the pregnant women said their gestational age today was 5 or less months and only 16% (n=30) their gestational age was more than 5 months.
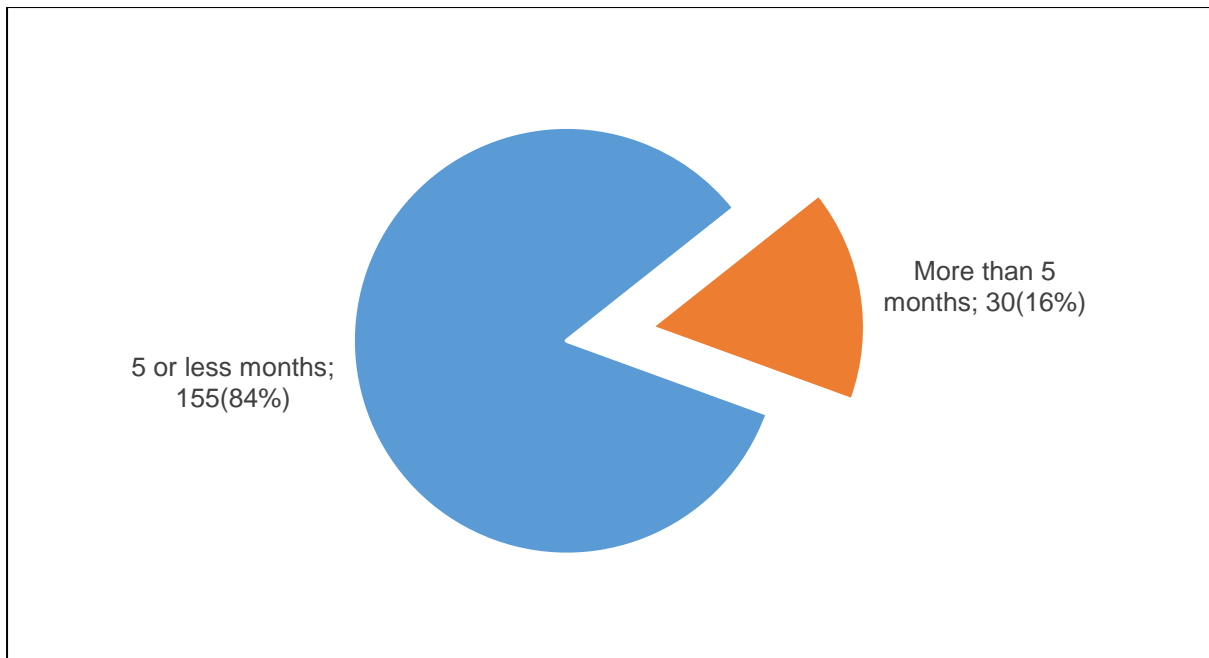
Figure 4.5: Gestational age for today antenatal care booking

Table 4.1 presents the association between demographic information of the participants with late ANC booking. There was no statistical significant relationship between age, marital status, employment status and late ANC booking (p>0.05). A significant higher proportion of women with primary education were likely to book ANC late than the other groups (p<0.05).

**Table 4.1: Demographic factors associated with late antenatal care booking**

| | Gestational age at first ANC booking with the current pregnancy | | p-value |
|---|---|---|---|
| | ≤5 months | >5 months | |
| Age (years) | | | |
| <20 | 81%(13) | 19%(3) | |
| 20-24 | 84%(63) | 16%(12) | |
| 25-29 | 85%(55) | 15%(10) | 0.808 |
| 30-34 | 90%(45) | 10%(5) | |
| 35+ | 92%(11) | 8%(1) | |
| Marital Status | | | |
| Unmarried | 85%(161) | 15%(29) | 0.251 |
| Married | 93%(26) | 7%(2) | |
| Level of education | | | |
| Primary | 67%(4) | 33%(2) | |
| Secondary | 87%(149) | 13%(22) | 0.004 |
| Tertiary | 91%(29) | 9%(3) | |
| Other | 43%(3) | 57%(4) | |
| Employment status | | | |
| Employed | 94%(15) | 6%(1) | |
| Unemployed | 89%(76) | 11%(9) | 0.751 |
| House Wife | 75%(3) | 25%(1) | |
| Students | 90%(26) | 10%(3) | |

## 4.4 FACTORS THAT CONTRIBUTES TO LATE ANTENATAL CARE BOOKING

Personal, cultural, environmental and organizational factors that contributed to late ANC booking are demonstrated in Figure 4.6. Of the pregnant women who presented to the clinics with a gestational age of more than five months, 43% (n=13) said is due to lack of information followed by 37% (n=11) who said is cultural belief.

Other factors were (20%, n=6) long distance to the clinic, (7%, n=2) long waiting time in the clinic and (3%, n=1) clinic operating hours.
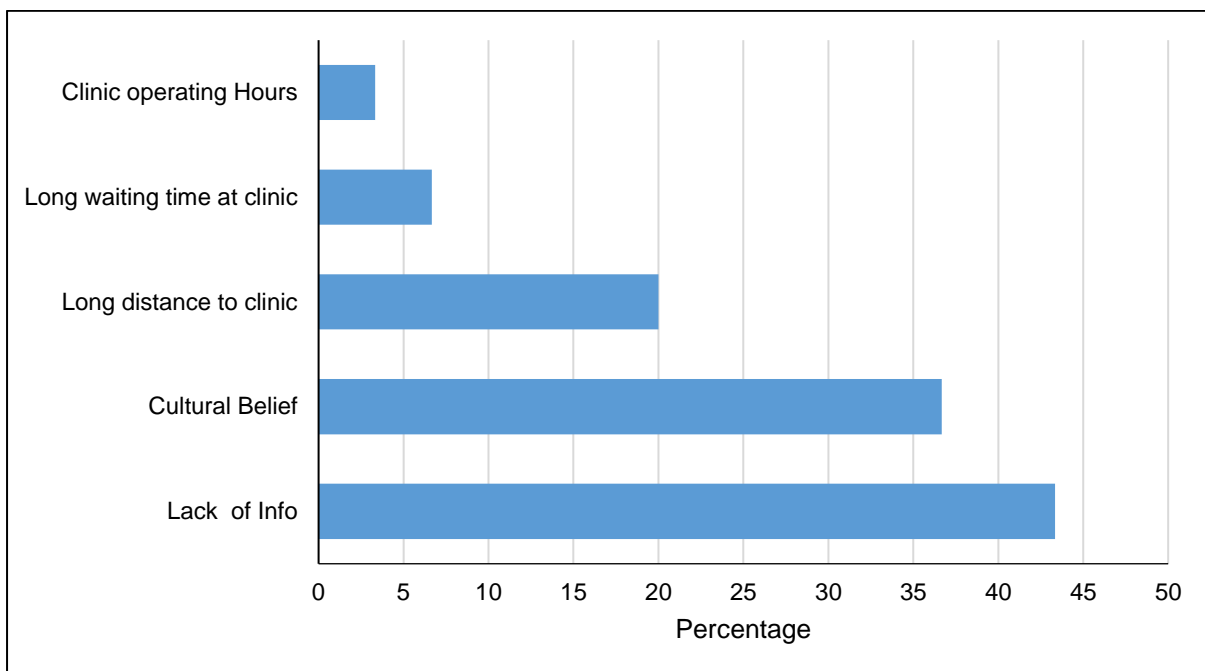


Figure 4.6: Factors that contributes to late antenatal care booking.

## 4.5 CONCLUSION

In this chapter, the findings of the present study were presented. The next chapter presents the discussion, recommendations, strengths and limitations, and conclusion of the study. The study fulfilled three objectives, which were to determine the demographic profile of pregnant women to determine the prevalence and factors contributing to late ANC amongst pregnant women. From the results presented in Chapter 4, majority of women who booked for ANC are unmarried, have secondary education and are unemployed. The prevalence of late ANC booking amongst pregnant women at Dikgale-Mamabolo local area is a concern, with 14% of pregnant women who booked after five months gestational age. Factors that contribute to late ANC booking amongst pregnant women include marital status, educational level, employment status, lack of information, cultural beliefs, long distance to the clinic, long waiting time in the clinic and clinic operating hours.

# CHAPTER 5
# DISCUSSION, RECOMMENDATIONS, STRENGTHS AND LIMITATIONS, AND CONCLUSION

## 5.1 INTRODUCTION

In the previous chapter, the study findings were presented and interpreted. In this chapter, the results of this study are discussed. Quantitative research approach was used to investigate the prevalence and factors contributing to late ANC booking amongst pregnant women in PHC facilities at Dikgale-Mamabolo local area. Cross-sectional study design was used and data was collected using an adapted questionnaire. Two hundred and thirty-eight pregnant women who came for ANC services in ANC facilities at Dikgale-Mamabolo local area were sampled from the population.

## 5.2 DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

In this section, the socio-demographic information of all women utilizing these three healthcare facilities and participated in this study are discussed, not only those who presented late for ANC booking.

### 5.2.1 Age

In this study, the mean age of the participants was 26.3±4.9 years ranging from 18 to 41 years and a greater proportion (94%) were less than 35 years old. A cross-sectional study conducted in Public Health Centers in Kembata Tembaro Zone, Ethopia found that the mean age of the participants was 28.3±5.5 years ranging from 16 to 40 years and most (81.2%) were aged <35 years (Tekelab & Berhanu, 2014).

The study conducted in Zambia by Sinyange et al. (2016) found that women aged 20 to 34 years were 30% more likely to book ANC earlier than women younger than 20 years. Another study conducted in Tanzania by Gross et al. (2012) found that out of 405 participants, 15% (n=61) were adolescents aged 19 years and younger. The study conducted in Western countries by Boerleider et al. (2013) found that being younger than 20 years and unplanned pregnancy were associated with late ANC booking.

Another study conducted in Uganda by Kawungezi et al. (2015) found that ANC utilization was significantly influenced by maternal age, where mothers aged between 25 to 29 years were less likely to utilize ANC service than women who were 35 years and older. Similarly, the study conducted in South Africa found that more than two-thirds (72%) of the participants were aged less than 35 years (Ebonwu et al., 2018). The study conducted in Limpopo province South Africa by Maluleke (2017) found that 34.1% of the participants were in the age group 24 to 28 years, followed by 29 to 33 years and <= 39 years.

### 5.2.2 Marital status

In the present study, more than two-thirds (87%) of the women were unmarried. These findings concur with the results of previous study in South Africa which found that (84%) of the participants were unmarried (Ebonwu et al., 2018). In contrast, studies conducted in Ethiopia and Zimbabwe respectively, reported that majority of their participants were married (Tekelab & Berhanu, 2014; Musendo et al., 2016; Ejeta et al., 2017). The study conducted in Ethiopia by Wolde et al. (2019) found that being housewife has significant association with late ANC booking.

The study conducted in Tanzania by Gross et al. (2012) found that there is no significant association between marital status and ANC booking. In contrast, the study conducted in South Africa by Muhwava et al. (2016) found that early ANC booking was significantly associated with being married. The study conducted in Limpopo province South Africa by Maluleke (2017) found that 58.1% of the participants were unmarried.

### 5.2.3 Educational level

Previous studies conducted in Ethiopia and South Africa found that a greater proportion of their participants had secondary and tertiary education (Ejeta et al., 2017; Ebonwu et al., 2018). Consistent with the results of these studies, nearly all (92%) of the participants in the present study had secondary and tertiary education. In contrast, the study conducted in Tanzania found that a greater proportion of the participants had primary education (Njiku et al., 2017). The study conducted in Zambia by Sinyange et al. (2016) found that women with higher education were 55% less likely to book ANC late compared to women with no education. The study conducted in Zimbabwe by Musendo et al. (2016) found that 17.9% of the participants had primary

education and 82.1% had secondary and higher education. Another study conducted in Ethiopia by Tekelab and Berhanu (2014) found that women with lower education and no education compared to those with higher education are more likely to book ANC late.

The study conducted in Uganda by Kawungezi et al. (2015) found that level of education influences place of ANC attendance, number of ANC visits and booking time, for which mothers with primary educational level were more likely to attend ANC than women who were unable to read and write. The study conducted in Gauteng province South Africa by Matyukira (2014) about knowledge and utilization of ANC services by pregnant women at Ekurhuleni, found that educated women tend to have greater awareness of the existence of ANC services and the advantages of using such services.

### 5.2.4 Employment status

In agreement with the findings of previous studies conducted in Tanzania, Ethiopia, Zimbabwe and South Africa respectively, found that nearly two-thirds (63%) of the women in the present study were unemployed (Musendo et al.,2016; Njiku et al., 2017, Ejeta et al., 2017, Ebonwu et al., 2018).  The study conducted in Ethiopia by Wolde et al. (2019) found that self-employment has significant association with late ANC booking. In contrast, the study conducted in Nigeria by Onasoga et al. (2012) found that there is no significant association between occupation and the utilization of ANC services.

The study conducted in Uganda by Kawungezi et al. (2015) found that employment status influences place of ANC attendance, number of ANC visits and booking time. Another study conducted in Malaysia by Rosliza and Muhamad (2011) found that 61.5% of women who participated in the study were housewives. In contrast, the study conducted in Western Cape and Gauteng province South Africa by Muhwava et al. (2016) found that early ANC booking was associated with being employed. The study conducted in Limpopo province South Africa by Maluleke (2017) found that 77.7% of pregnant women who participated in the study were unemployed.

## 5.3 PREVALENCE AND FACTORS ASSOCIATED WITH LATE ANTENATAL CARE BOOKING

### 5.3.1 Prevalence of late antenatal care booking

Adequate and early ANC booking is essential for the prevention of complications during pregnancy. However, many studies have shown that pregnant women present late for ANC. The study conducted in China by Aung et al. (2016) found that the prevalence of late ANC booking was 56.2%. Wolde et al. (2018) in their study in Ethiopia revealed that 59.4% of pregnant women initiated ANC late. Another two Ethiopian studies found that 67.3% (Teshale & Tesema, 2020) and 68.6% (Tekelab & Berhanu, 2014) of pregnant women book ANC late.

In the present study, of women who answered the question "*What was your gestational age at first antenatal care booking with the current pregnancy*?" the majority (86%, n=187) said their gestational age at first ANC booking with the current pregnancy was five or less months and only 14% (n=31) was more than five months.

The study conducted by Ejeta et al. (2017) found that the prevalence of late ANC booking in Ethiopia was 81.5%, with most pregnant women booking at second and third trimester. The study conducted in Uganda found that majority of the participants (72.7%) did not know the right gestational age at which pregnant woman should start attending ANC and 53.3% reported that they saw no reason to book early for ANC, even though some of them knew the right gestational age at which they should start their first ANC visit (Kisuule et al., 2013). The prevalence of early ANC booking among urban women in South Africa was 46% and 45% among rural women.

The participants were also asked this question "*If this is your first antenatal care booking today, what is your gestational age*?" Of those who answered the question (n=185), more than two-thirds (84%, n=155) said their gestational age was five or less months and only 16% (n=30) said it was more than five months. An earlier study in Gondar town, North West Ethiopia found that the proportion of the respondents who booked ANC early were 35.1% and those who booked ANC late were 64, 9% (Gudayu, 2015). The study conducted in Tanzania by Njiku et al. (2017) found that 70, 4% of the participants booked ANC late and the associated factors were not being married and not being employment.

Similarly, 52.5% of the participants booked ANC late (Wolde et al., 2019). The study conducted in Zambia by Sinyange et al. (2011) found that the proportion of late ANC booking (booking between 4 to 9 months) was 81% disaggregated as 56% and 19% at 4 to 5 months and 6 to 9 months respectively. The study conducted in Tanzania by Gross et al. (2012) found that among the 405 pregnant women who participated in the study, only 29% booked ANC within the first four months of pregnancy as recommended by World Health Organization.

## 5.3.2. Factors associated with late antenatal care booking
*5.3.2.1 Demographic factors*
No statistical significant relationship between age, marital status, employment status and late ANC booking was observed in this study, however, a significant greater proportion of pregnant women with primary education were likely to book ANC late than the other groups. Another study conducted in Nigeria found that there is no association between occupation of the participants and late ANC booking (Onasoga et al., 2012).

In contrast, the study conducted in Tanzania by Njiku et al. (2017) found that late ANC booking was highly associated with unmarried and unemployment status. The study conducted in Ethiopia by Teshale and Tesema (2020) found that maternal education was significantly associated with late ANC booking. The study conducted in Gauteng province South Africa found that there was no association between age, marital status, highest level of education and current employment status (Matyukira, 2014).

*5.3.2.2 Personal factors*
The present study found that forty-three percent of pregnant women booked ANC after five months due to lack of information. The study conducted in Bangladesh by Shirin (2011) found that 57% of the participants had average knowledge on ANC. The study conducted in Malaysia by Rosliza and Muhamad (2011) found that women's knowledge contributes to late ANC booking. The study conducted in Ethiopia by Wolde et al. (2019) found that poor knowledge about ANC has significant association with late ANC booking.

The present study is supported by the study conducted in Ethiopia by Wolde et al. (2019) which revealed that the major factor that contributed to late ANC booking was poor knowledge about ANC. Another study conducted in Ethiopia by Gudayu (2015) about the proportion and factors associated to late ANC booking among pregnant women in Gondor found that 72% of pregnant women who booked ANC late did not have information about ANC. Similarly, the study conducted in Tanzania found that lack of awareness about the health care benefits of ANC may influence timing of ANC visit (Gross et al., 2012).

The study conducted by Roelofse (2018) in Cape Town South Africa showed that lack of knowledge and awareness about ANC contributed to late ANC booking. The study conducted in Limpopo province South Africa found that 50, 4% of pregnant women had positive perceptions of ANC and 49, 6% had negative perceptions of ANC services. Two-thirds (68,2%) of the participants received ANC information from the health centres, followed by 19,8% who received health information from relatives and 2,8% who received information from the media (Maluleke, 2017).

*5.3.2.3 Cultural factors*

The present study revealed that 37% of pregnant women booked ANC after five months due to cultural beliefs. This finding is similar to the study conducted in Vietnam by Tran et al. (2011) found that cultural beliefs concerning pregnancy contribute to late ANC booking. Another study conducted in Vietnam by Tran et al. (2011) found that cultural beliefs influence women's decision on ANC initiation. The study conducted in Western countries by Boerleider et al. (2013) found that women's cultural practices, values and norms, religious beliefs and views, beliefs about pregnancy and ANC contribute to late ANC booking.

The study conducted in Ethiopia by Teshale and Tesema (2020) revealed that religion is associated with late ANC booking. The study conducted by Sakala (2011) about assessment of barriers to the utilization of ANC services in Kazungula district, Zambia found that traditional beliefs and trust in indigenous knowledge were seen as barriers to utilization of ANC among pregnant women. Previous studies conducted in South Africa and Nigeria found that there is association between cultural beliefs and ANC booking (Openshaw et al., 2011; Onasoga et al., 2012).

In contrast, another study conducted in Gauteng province South Africa found that there is no association between cultural beliefs and ANC booking (Matyukira, 2014). The study conducted in Limpopo province South Africa by Ragolane (2017) found that pregnant women consult traditional healers before booking ANC and others discuss with elders, who advised them to book ANC when the baby start to move.

*5.3.2.4 Environmental factors*

This study indicated that 20% of pregnant women booked ANC after five months due to long distance to the clinic. The study conducted in Ethiopia by Teshale and Tesema (2020) found that women living in rural areas are more likely to book ANC late. Similarly, the study conducted in Ethiopia found that there is significant association between residence and late ANC booking, with 56% of rural women and 27% of urban women who booked ANC late (Ewunetie et al., 2018).

The study conducted in Nigeria by Onasoga et al. (2012) found that there is association between distance to the facility and antenatal care utilization. The study conducted in Ethiopia by Wolde et al. (2019) found that travel expenses have significant association with late ANC booking. Another study conducted in Uganda found that women spent most of their time on multiple responsibilities caring for children, collecting water or fuel, cooking, cleaning and trade than on their own health, which contributes to late ANC booking (Kawungezi et al., 2015).

The study conducted in South Africa by Ebonwu et al. (2018) revealed that rural women are more likely to book ANC late, with 51% of rural women and 28% of peri-urban women booked ANC late. In contrast, the study conducted in South Africa found that the psychosocial factors associated with early ANC booking in urban area were being employed and planned pregnancy, while in rural area were being married and religion (Muhwava et al., 2016). Similarly, the study conducted in Limpopo province South Africa found that the cost of travelling long distance to clinic delayed pregnant women from booking ANC early (Ragolane, 2017).

*5.3.2.5 Health system factors*

The study found that factors that contribute to late ANC booking were long waiting time in the clinic (7%, n =2) and clinic operating hours (3%, n=1). This is supported by the study conducted by Sanda (2014) in Nigeria showed that long waiting time and being turned away from the clinic were factors that contribute to late ANC booking. Similarly, the study conducted in Western countries found that access to clinic and opening hours contributes to late ANC booking (Boerleider et al., 2013).

Another studies conducted in Tanzania and South Africa found that pregnant women booked late because of poor services at clinics (De Vaal, 2011; Gross et al., 2012). Previous study conducted in Gauteng province South Africa found that 40% of the participants booked late because they were turned away and told that they were still early to book ANC (Solarin & Black, 2013). The study conducted by Mkhari (2016) about factors contributing to late ANC booking in Mpumalanga province South Africa found that 17% of pregnant women agreed that unstable clinic operating hours led them to late ANC booking.

The study conducted in Limpopo province South Africa by Ragolane (2017) found that mobile clinics not rendering ANC services, long waiting time at clinics and midwives' negative attitude contributes to late ANC booking. In contrast, another study conducted in Limpopo province South Africa found that 76, 8% of the participants agreed that staff at reception were friendly and polite, 48, 8% reported that the midwives were organized and efficient (Maluleke, 2017).

## 5.4 RECOMMENDATIONS

Based on the findings of the study, the researcher has come up with the following recommendations to encourage early ANC booking at Dikgale-Mamabolo local area:

- Health education should be conducted at schools and health care facilities about the importance of early ANC booking.
- Community awareness campaigns should be conducted about the importance of early ANC booking.
- Health care facilities should conduct self-assessment on National Core Standards and Ideal Clinic Realization so that they can be able to identify gaps related to ANC booking and develop quality improvement plan.

- Client satisfaction survey related to ANC booking should be conducted on quarterly basis and the results should be analysed to identify areas for improvement.
- The Department of Health should provide mobile clinic services for hard to reach areas for the provision of ANC services.

## 5.5 STRENGTHS AND LIMITATIONS OF THE STUDY

- The participants answered the questionnaire in their language of choice, which is Sepedi.
- Some of the participants did not indicate their employment status, which made it difficult to determine their demographic profile in detail.
- Some of the women who presented at the facilities for first time ANC booking were not sure of their gestational age.
- Due to the specific context of the study, the findings of the study cannot be generalized in the entire province or district, but are generalized for Dikgale-Mamabolo local area.

## 5.6 CONCLUSION

Chapter five summarized the findings of the study including the limitations of the study and recommendations. The aim of the study was to investigate the prevalence and factors contributing to late ANC booking amongst pregnant women in PHC facilities at Dikgale-Mamabolo local area. The prevalence of late ANC booking amongst pregnant women at Dikgale-Mamabolo local area is a concern. Most of the factors that contribute to late ANC booking were marital status, educational level, employment status, mode of transport, lack of information, cultural beliefs, long distance to the clinic, long waiting time in the clinic and clinic operating hours. Recommendations were made based on the results of the study to improve ANC booking.

## 6. REFERENCES

Adekanle D & Isawumi A, 2008. Late antenatal care booking and its predictors among pregnant women in South Western Nigeria. *Online Journal of Health and Allied Sciences* 7(1): 1- 6.

Agus Y & Horiuchi S, 2012. Factors influencing the use of antenatal care in rural West Sumatra, Indonesia. *BMC Pregnancy and Childbirth* 12(9): 1- 8.

Aliyu A & Dahiru D, 2017. Predictors of delayed antenatal care (ANC) visits in Nigeria: secondary analysis of 2013 Nigeria Demographic and Health Survey (NDHS). *Pan African Medical Journal* 26(124): 1- 13.

Asundep N, Carson A, Turpin C, Agidi A, Zhang K & Jolly P, 2013. Determinants of access to antenatal care and birth outcomes in Kumasi, Ghana. *Journal of Epidemiology and Global Health* 3(4): 279-288.

Aung T, Win M, Khaing W, Lwin N & Dar H, 2016. Late initiation of antenatal care and its determinants: a hospital based cross-sectional study. *International Journal of Community Medicine and Public Health* 3(4): 900- 905.

Banda I, Michelo C, & Hazemba A, 2012. Factors associated with late antenatal care attendance in selected rural and urban communities of the Copperbelt Province of Zambia. *Medical Journal of Zambia* 39(3): 29-36.

Blencowe H, Calvert C, Lawn J, Cousens S & Campbell O, 2016. Measuring maternal, foetal and neonatal mortality: Challenges and solutions. *Best Practices and Research Clinical Obstetrics and Gynaecology* 36(16):14-29.

Boerleider A, Weigers T, Mannien J, Francke A & Deville W, 2013. Factors affecting the use of prenatal care by non-western women in industrialized western countries: A systematic review. *BMC Pregnancy and Childbirth* 13(81): 1- 11.

Brink H, van der Walt C, & van Rensburg G, 2012. *Fundamentals of research methodology for health care professionals.* 3rd edition. Cape Town: Juta & co Ltd.

Burns N & Grove S, 2015. *Understanding nursing research.* 6th edition. Pretoria: Saunders/Elsevier.

Creswell J, 2014. *Research design: Qualitative, quantitative, & mixed methods approach.* 4th edition. London: Sage publications. Inc.

Creswell J & Creswell D, 2018. *Research design: Qualitative, quantitative, & mixed methods approach.* 5th edition. London: Sage publications. Inc.

Department of Health, 2016. Guidelines for maternity care in South Africa. A manual for clinics, community health care centres, and district hospitals. 4th edition. Republic of South Africa: 36-38. Available on: www.health.gov.za (accessed 23 August 2019).

Department of Health, 2014. Annual Report 2013/2014.Pretoria: National Department of Health. Available on: https://www.gov.za (accessed 23 August 2019).

De Vaal S, 2011. Late booking at the Michael Mapongwana antenatal clinic, Khayelitsha: Understanding the reasons. Master of Medicine in Family Medicine Thesis. Stellenbosch University. Cape Town.

Ebonwu J, Mumbauer A, Uys M, Wainberg M & Medina-Marino A, 2018. Determinants of late antenatal care presentation in rural and peri-urban communities in South Africa: A cross-sectional study*. PLoS One* 13(3): 1- 16.

Ejeta E, Dabsu R, Zewdie O & Merdassa E, 2017. Factors determining late antenatal care booking and the content of care among pregnant mother attending antenatal care services in East Wollega administrative zone, West Ethiopia. *Pan African Medical Journal* 27(184): 1- 8.

Ewunetie A, Munea A, Meselu B, Simeneh M & Meteku B, 2018. Delay on first antenatal care visit and its associated factors among pregnant women in public health facilities of Debre Markos town, North West Ethiopia. *BMC Pregnancy and Childbirth* 18(173):1- 8.

Feijen-de Jong E, Jansen D, Baarveld F, van der Schans C, Schellevis F & Reijneveld S, 2011. Determinants of late and/or inadequate use of prenatal healthcare in high-income countries: a systematic review. *The European Journal of Public Health* 22(6): 1- 16.

Gross K, Alba S, Glass T, Schellenburg J & Obrist B, 2012.Timing of antenatal care for adolescent and adult pregnant women in south- eastern Tanzania. *BMC Pregnancy and Childbirth* 12(16): 1-12.

Gudayu T, 2015. Proportion and factors associated with late antenatal care booking among pregnant mothers in Gondar Town, North West Ethiopia. *African Journal of Reproductive Health* 19(2): 93-99.

Heaman M, Mofatt M, Elliott L, Sword W, Helewa M, Morris H, Gregory P, Tjaden L & Cook C, 2014. Barriers, motivators and facilitators related to prenatal care utilization among inner-city women in Winnipeg, Canada: a case-control study. *BMC Pregnancy and Childbirth* 14(227): 1- 18.

Kawungezi P, AkiiBua D, Aleni C,Chitayi M, Niwaha A, Kazibwe A, Sunya E, Mumbere E,Mutesi C, Tukei C, Kasangaki A & Nakubulwa S, 2015. Attendance and utilization of Antenatal care (ANC) Services: Multi-Center Study in Upcounrty Areas of Uganda. *Open Journal of Preventive Medicine* 5(3): 132-142.

Kenya National Bureau of Statistics (KNBS) and ICF Macro, 2010. Kenya Demographic and Health Survey 2008-09. Calverton, Maryland: KNBS and ICF Macro.

Kisuule I, Kaye K, Najjuka F, Ssematimba M, Arinda A, Nakitende G & Otim L, 2013. Timing and reasons for coming late for the first antenatal care visit by pregnant women at Mulago hospital, Kampala Uganda. *BMC Pregnancy and Childbirth* 13(121): 1-7.

Longman Dictionary of Contemporary English, 2012. 3rd edition. England: Pearson Education.

Maluleke L, 2017. Knowledge and perceptions about antenatal care services by pregnant women at Julesburg local area, Mopani district in Limpopo province. Master of Public Health dissertation (Health Sciences). University of Limpopo. Polokwane.

Matyukira S, 2014. Knowledge and utilization of antenatal care services by pregnant women at Ekurhuleni. Master of Public Health dissertation. University of South Africa. Pretoria.

Mkhari M, 2016. Factors contributing to late antenatal care booking at Thulamahashe local area at Bushbuckridge sub-district in Mpumalanga province. Master of Arts dissertation (Health Studies). University of South Africa. Pretoria.

Mosby's Medical Dictionary, 2013. 9th edition. Canada: Elsevier.

Muhwava L, Morojele N & London L, 2016. Psychosocial factors associated with early initiation and frequency of antenatal care visits in rural and urban setting in South Africa: a cross-sectional survey. *BMC Pregnancy and Childbirth* 16(18): 1- 9.

Musendo M, Chideme-Munodawafa A, Mhlanga M & Ndaimani A, 2016. Delayed first Antenatal Care visit by pregnant women: Correlates in a Zimbabwean Peri-Urban District. *International Journal of Innovative Research and Development* 5(7): 307- 313.

Myer L & Harrisson A, 2010. Why do women seek antenatal care late? Perspectives from rural South Africa. *Journal of Midwifery & Women's Health* 48 (4): 268- 272.

Ndidi E & Oseremen I, 2010. Reasons given by pregnant women for late initiation of antenatal care in the Niger Delta, Nigeria. *Ghana Medical Journal* 44(2): 47-51.

Neupane S & Doku D, 2012. Determinants of time of start of prenatal care and number of prenatal care visits during pregnancy among Nepalese women. *Journal of Community Health* 2012(37): 865-873.

Ngomane S & Mulaudzi F, 2010. Indigenous beliefs and practices that influence the delayed attendance of antenatal clinics by women in the Bohlabelo district in Limpopo. University of Pretoria. South Africa. *International Journal of Midwifery* 11(002): 30- 38.

Njiku F, Wella H, Sariah A & Protas J, 2017. Prevalence and factors associated with late antenatal care visit among pregnant women in Lushoto, Tanzania. *Tanzania Journal of Health Research* 19 (3):1- 6.

Oluwatosin O, Aluko J & Onibokun A, 2013. Factors influencing initiation of antenatal care in Ibadan, Nigeria. *African Journal of Midwifery and Women's Health* 5 (4):163- 168.

Onasoga O, Afolayan J & Oladimeji B, 2012. Factors influencing utilization of antenatal care services among pregnant women in Ife Central Lga, Osun state Nigeria. *Advances in Applied Science Research* 3(3):1309-1315.

Openshaw R, Hlwelekazi N & Pretlove S, 2011. An evaluation of the timing and use of healthcare during pregnancy in Birmingham, UK and Pretoria, South Africa. *International Scholarly Research Network Obstetrics and Gynaecology* 2011(364243): 1- 5.

Pathak P, Singh A & Subramanian S, 2010. Economic inequalities in maternal health care: prenatal care and skilled birth attendance in India, 1992- 2006. *PLoS One* 5(10*):* 1- 17.

Polit D & Beck C, 2012. *Nursing research, generating and assessing evidence for nursing practice*. China: Wolters Kluwer Health/Lippincott/Williams & Wilkins.

Ragolane J, 2017. Factors contributing to late antenatal care booking in Mopani District of Limpopo province. Master of Public Health dissertation (Health Studies). University of South Africa. Pretoria.

Roelefse M, 2018. Investigating factors contributing to late initiation of antenatal care in health facility in Cape Town. Master in Nursing (Advanced Midwifery). University of Western Cape. Cape Town.

Rosliza A & Muhamad J, 2011. Knowledge, attitude and practice on antenatal care among Orang Asli women in Jempol, Negeri Sembilan. *Malaysian Journal of Public Health Medicine* 11(2): 13- 21.

Sakala M, 2011. Assessment of barriers to the utilization of antenatal care services in Kazungula district, Zambia. Master of Public Health mini-thesis. University of Western Cape. Cape Town.

Sanda H, 2014. Media awareness and utilization of antenatal of antenatal care services by pregnant women in Kano State-Nigeria. University of Nigeria. *Journal of Social Science Studies* 1(2): 1- 7.

Sellers P, 2010. *Midwifery Volume 1: Textbook and reference book for midwives in Southern Africa*. Cape Town: Juta & co Ltd.

Shirin S, 2011. Knowledge, attitude and practice of maternal health care amongst the married women in a rural area of Bangladesh. *Ibrahim Medical College Journal* 5(1): 13- 16.

Sinyange N, Sitali L & Michelo C, 2016. Factors associated with late antenatal care booking: population-based observations from 2007 Zambia demographic and health survey. *Pan African Medical Journal* 25(109):1-12.

Solarin J & Black V, 2013."They told me not to come back" women's antenatal care booking experiences in inner- city Johannesburg. *Maternal and Child Health Journal* 17(2): 359-367.

Tang X, Ding L, Feng Y, Wang Y & Zhou C, 2019. Antenatal care use and its determinants among migrant women during the first delivery: a nation-wide cross sectional study in China. *BMC Pregnancy and Childbirth* 19(355):1-10.

Tanzania Demographic and Health Survey and Malaria Indicator Survey, 2016. Ministry of Health, Community Development, Gender ,Elderly and Children(Tanzania Mainland),Ministry of Health(Zanzibar), National Bureau of Statistics, Office of the Chief Government Statistician, and ICF Dar es Salaam, Tanzania and Rockville, Maryland, USA.

Tekelab T & Berhanu B, 2014. Factors associated with late antenatal care initiation of antenatal care among pregnant women attending antenatal clinic at public health centers in Kembata Tambaro Zone, Southern Ethiopia. *Science, Technology and Arts Research Journal* 3(1): 108-115.

Teshale A & Tesema G, 2020.Prevalence and associated factors of delayed first antenatal care booking among reproductive age women in Ethiopia: a multilevel analysis of EDHS 2016 data. *PLoS one* 15(7): 1- 13.

Tran T, Nguyen C, Nyuyen H, Eriksson B, Bondjers G, Gottvall K, Ascher H and Petzold M, 2011.Urban-rural disparities in antenatal care utilization: a study of two cohorts of pregnant women in Vietnam. *BMC Health Services Research* 11(120): 1-9.

United Nations International Children's Emergency Fund, 2017. Maternal health data. Available on: https//data.unicef.org (accessed 23 August 2019).

Warri D & George A, 2020.Perceptions of pregnant women of reasons for late initiation of antenatal care: a qualitative interview study. *BMC Pregnancy and Childbirth* 20(70) 1-12.

Wolde F, Mulaw Z, Zena T, Biadgo B and Limenih M, 2018. Determinants of late initiation for antenatal care follow up: the case of northern Ethiopia pregnant women. *BMC Research Notes* 11(837): 1- 7.

Wolde H, Tsegaye A & Sisay M, 2019.Late initiation of antenatal care and associated factors among pregnant women in Addis Zemen primary hospital, South Gondar, Ethiopia*. BMC Reproductive Health* 16(73): 1- 9.

World Health Organization. Declaration of Alma-Ata. Adopted at the International Conference of Primary Health Care, Alma-Ata, USSR, 6-12 September 1978. Available on: https://www.cliffsnotes.com (accessed 16 September 2019).

World Health Organization, 2016. Global Health Observatory (GHO) data. Maternal mortality. Available on: https://www.who.int (accessed 23 August 2019).

World Health Organization, 2016. Recommendations on Antenatal Care for a Positive Pregnancy Experience: Summary. Available on: https://www.who.int (accessed 26 June 2021).

Yamane T, 1967. *Statistics, An Introductory Analysis.* 2nd edition. New York: Harper and Row.

**APPENDICES**

**Appendix A: Questionnaire (English version)**

**Research title**: Prevalence and factors contributing to late antenatal care booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area, Limpopo province.

Facility code……………………………………

Date……………………………………………….

**SECTION A: SOCIO-DEMOGRAPHIC DATA**

1. Age?.........

2. Marital status?

Single □    Married □    Divorced □    Widowed □

Stable relationship □    Other □ Specify……………………………

3. Educational level?

Primary □    Secondary □    Tertiary □    Other □
Specify…………………………

4. Employment status?

Employed □    Unemployed □    House wife □    Student □    Other □
Specify…………………

5. What is the mode of transport you use from your home to the health care facility/ clinic?

Walking □    Use taxi □    Use own car □

**SECTION B: ANTENATAL CARE CLINIC ATTENDANCE**

1. Number of previous pregnancies?...................

2. Have you lost any pregnancy?

Yes □    No

3. Did you attend antenatal care services with previous pregnancy?

Yes  □          No  □

If yes, how many visits did you attend?....................................

4. What was your gestational age at first antenatal care booking with the previous pregnancy?

Less than 05 months      □      More than 05 months      □

5. What was your mode of delivery?

Normal vaginal delivery    □        Caesarean Section □  Vacuum delivery  □

6. What was your gestational age at first antenatal care booking with the current pregnancy?

Less than 05 months  □        More than 05 months  □

7. If this is your first antenatal care booking today, what is your gestational age?

Less than 05 months  □        More than 05 months  □

8. What are the things that made you to present after 05 months for first antenatal care booking?

Lack of information    □

Cultural beliefs      □

Long distance to the clinic    □

Long waiting time in the clinic    □

Clinic operating hours    □


## SECTION C: ANTENATAL CARE SERVICES

1. What type of antenatal care services did you receive today?

Physical examination        □

HIV counselling and testing        □

Iron supplements tablets   □

Other   □   Specify……………………………………………

2. What information did you get about this pregnancy?

Monitoring of foetal kicks   □

Infant feeding          □

Birth plan       □

Danger signs of pregnancy          □

Management of complications       □

No information given             □

3. Are the clinic operation hours convenient to you?   Yes   □        No     □

4. Were the clinic staff friendly?   Yes   □        No     □

5. Did you have to wait for long time before you get attended?

Yes   □              No     □

6. Did you receive the supplements during your antenatal care visit?

Yes   □              No     □

7. Were you satisfied about the services you received in the clinic with the current pregnancy?  Yes   □              No     □

8. What community influence could stop you from attending antenatal care?

Cultural beliefs concerning pregnancy          □

Values attached to attending antenatal care       □

Misconceptions about antenatal care          □

Other   □   Specify…………………………………

**SECTION D: KNOWLEDGE ABOUT ANTENATAL CARE SERVICES**

1. Did you have any antenatal care information before you get pregnant?

Yes    □                No       □

2. Do you know of any danger signs of pregnancy? Yes        □            No    □

If yes, list at least two.………………………………………………………………

3. Do you know of the advantages of booking antenatal care before 05 months?

Yes    □           No    □

If yes, list any.………………………………………………………………………..

4. Do you know of the disadvantages of booking antenatal care after 05 months?

Yes    □           No    □

If yes, list any.………………………………………………………………………

**Appendix B: Lenaneopotšišo (Sepedi version)**

**Hlogo ya nyakishišo**: Boemo le mabaka a o a amanago le go thoma sekala sa boimana morago ga nako magareng ga baimana ka dikliniking tša ka tikologong ya Dikgale-Mamabolo, Profense ya Limpopo.

Khoutu ya kliniki………………………………….

Letšatšikgwedi…………………………………………….

**KAROLO YA A:  DATA YA TAODIšOPHELO YA LEAGO**

1. Mengwaga?.........

2. Seemo sa lenyalo?

Ga ke a nyalwa       □      Ke nyetšwe □     Ke hladile     □    Ke hlokofaletšwe□ Kamana ye e tsepamego        □            Tše dingwe    □ Hlalosa…………………………………….

3. Maemo a tša thuto?

Phoraemari   □     Sekolo se se phagameng □     Thuto ya godimo     □     Tše dingwe       □ Hlalosa……………………………………

4. Seemo sa mošhomo?

Ke a šhoma □     Ga ke šhome       □ Moithuti     □

5. Ke mohuta ofe wa senamelwa wo o o šhomišago go tloga gae go ya lefelo la go aba ditirelo tša maphelo/kliniking?

O ka fihla ka maoto □     Ka pesana    □     Ka koloi ya ka        □


**KAROLO YA B: KETELO YA SEKALA SA BOIMANA**

1. Nomoro ya maumo a go feta?...........

2. O kile waba le leumo la go goma tseleng?

Ee      □            Aowa □

3. O bile le phihlelelo ya ditirelo tša boimana ka leumo la go feta?

Ee     □                    Aowa □

Ge e ba karabo ke ee, o bile le diketelo tše kae?................................................

4. O be o na le dikgwedi tše kae ge o thoma sekala sa boimana ka leumo la go feta?

Ka fase ga dikgwedi tše hlano     □          Ka godimo ga dikgwedi tše hlano □

5. O belege ka tsela efe?

Ngwana o tlile gabotse     □          Karo  □    Thušo ya pelego   □

6. O be o na le dikgwedi tše kae ge o thoma sekala sa boimana ka leumo la bjale?

Ka fase ga dikgwedi tše hlano     □          Ka godimo ga dikgwedi tše hlano □

7. Ge e ba ke ketelo ya mathomo ya sekala sa boimana lehono, o na le dikgwedi tše kae?

Ka fase ga dikgwedi tše hlano     □          Ka godimo ga dikgwedi tše hlano □

8. Ke dilo di fe tše di dirilego gore o thome sekala sa boimana ka morago ga dikgwedi tše hlano ka leumo la bjale?

Go hloka maele     □

Ditumelo tša setšo     □

Monabo o motelele go ya kliniking     □

Go ema sebaka se se telele ka kliniking   □

Diiri tša go šoma ka kliniking     □


**KARALO YA C: DITIRELO TšA SEKALA SA BOIMANA**

1. Ke mohuta ofe wa ditirelo tša sekala sa boimana tše o di amogetšego letšatši la lehono?

Hlahlobo ya mmele          □

Diteko tša HIV     □

 Dipilisi tša boimana          □

Tše dingwe    □   Hlalosa…………………………………………………………………………

2. Ke maele afe a o o filwego ka leumo la bjale?

Go lebedišhišha meragelo ya ngwana    □

Phepo ya ngwana   □

Peakanyo ya pelego         □

Ditšhupo tša dihlohlotlo tša boimana    □

Thušo ka ditlamorago tša boimana    □

A gona maele a o ke filwego ona      □

3. Naa e ka ba dinako tša mošhomo tša kliniki   di a o kgodiša/kgotšofatša?

Ee    □       Aowa □

Ge    e    ba    aowa,    dikakanyo    tša    gago    ke    dife?
………………………………………………………………………………..

4. Naa bašhomi ba be ba na le botho?   Ee      □       Aowa □

5.  Naa e ka ba o eme sebaka se telele pele ga ge o ka humana thušho?

Ee    □          Aowa □

6. Naa o filwe mereana ka letšatši la ketelo ya sekala sa boimana?

Ee    □             Aowa □

7. O kgotsofetše ka ditirelo tše o di filwego ka kliniking ka leumo la bjale?

Ee    □             Aowa □

8. Ke dikhuetšo tše di fe mo setšhabeng tše di ka o šhitišhago go thoma sekala sa boimana?

Ditumelo tša setšo mabapi le boimana    □

Bolemo bo kgokagantšwego le go thoma sekala sa boimana □

Dikgonono mabapi le sekala sa boimana    □

Tše dingwe   □ Hlalosa……………………………………..

**KAROLO YA D: TSEBO KA DITIRELO TšA SEKALA SA BOIMANA**

1. O bile le hlahlo ka tša boimana pele o ima?

Ee     □          Aowa □

2. O tseba ka ditšhupetšo tša dikotsi tša boimana?  Ee          □               Aowa □

Ge e ba karabo ke ee, tšweletša dika tše pedi…………………………………………….

 3. O tseba ka menyetla ya go thoma sekala sa boimana pele ga dikgwedi tše hlano?
Ee     □          Aowa □

Ge e ba karabo ke ee, tšweletša tše pedi……………………………….…………

4. O tseba ka ditlamorago tše dimpe tša go thoma sekala sa boimana ka morago  ga dikgwedi tše hlano? Ee     □          Aowa □

Ge e ba karabo ke ee, tšweletša tše pedi……………………………….…………

**Appendix C: Request for permission to conduct the study: Assistant Manager PHC**

P.O Box 1813
Sovenga
0727
06 October 2020

Assistant Manager PHC

Dikgale-Mamabolo Local Area

Polokwane-East Sub-district

0700

Dear Sir/Madam

**Request for permission to conduct the study in Primary Health Care facilities at Dikgale-Mamabolo local area**

I Raesebe Johanna Molokomme working at J. Mamabolo clinic as a clinical nurse practitioner and currently registered with the University of Limpopo pursuing Master of Public Health hereby request permission to conduct the study in the following clinics: J. Mamabolo clinic, Dikgale clinic and Sebayeng clinic.

The title of my study is prevalence and factors contributing to late antenatal care booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area. The aim of the study is to investigate the prevalence and factors contributing to late antenatal care booking amongst pregnant women in the above selected primary health care facilities. The study has been approved by the provincial Department of Health.

Kindly find a copy of approval letter from the Department of Health.

Should you need any further information, kindly contact me on 078 693 0305 or send an email to jmolokomme29@gmail.com.

Your consideration will be highly appreciated.

Yours faithfully

R.J. Molokomme

………………………

**Appendix D: Information sheet (English version)**

**Title: Prevalence and factors contributing to late Antenatal Care booking amongst pregnant women in Primary Health Care facilities at Dikgale-Mamabolo local area, Limpopo Province**

I am hereby inviting you to participate in a research study on antenatal care services. The purpose of the study is to investigate the prevalence and factors contributing to late antenatal care amongst pregnant women at the Primary Health Care facilities at Dikgale-Mamabolo local area, Limpopo Province. There will be no risks to you in sharing your information. You will be asked closed-ended questions. Your participation in the study means that you will be given 45 minutes to answer the questions.

All information shared will be kept confidential and your name will not be written on the questionnaire. All data collected will be stored in secure place. Only my supervisors and I will have access to data. The results of the study will be used to improve antenatal care services. Your participation in this study is voluntary. You are under no obligation to participate in the study. You have the right to withdraw at any time if you so wish, without penalty, even in the middle of the study.

The University of Limpopo and the Department of Health have approved the study and its procedures.

You may sign the consent form if you accept to participate in the study.

If you have any questions about the study or participation in the study, please feel free to ask me (Raesebe Johanna Molokomme). You can call me on 078 693 0305 or 015 267 2903 (work).

**Appendix E: Letlakala la tshedimošo (Sepedi version)**

**Thaetlele: Boemo le mabaka a o a amanago le go thoma sekala sa boimana morago ga nako magareng ga baimana ka dikliniking tša ka tikologong ya Dikgale-Mamabolo, Profense ya Limpopo.**

Ke go mema go tšea karolo mo dinyakišišong mabapi le ditirelo tša sekala sa boimana. Morero wa dinyakišišo tše ke go nyakišiša ka boemo le mabaka ao a amanago le go thoma sekala sa boimana morago ga nako magareng ga baimana ka dikliniking tša ka tikologong ya Dikgale-Mamabolo, Profense ya Limpopo. Ga gona dikotsi mo go wena ge o abelana ka tshedimošo. O tlo fiwa dipotšišo, wa kgetha dikarabo wa ba wa fahlela. Go tšea karolo mo dinyakišišong tše go e ra gore o tlo fiwa metsotso ye masomenne hlano go araba dipotšišo.

Tshedimošo ka moka ye o abelanang ka yona ke sephiri le leina la gago le ka se ngwalwe mo letlakaleng la dipotšišo. Tshedimošo yeo e tšeerwego e tla begwa lefelong leo le šireleditšwego. Ke fela bafahlosi baka le nna re tlo ba go le phihlelelo ya yona. Dipoelo tša dinyakišio di tlo šomišwa go hlabolla ditirelo tša sekala sa boimana. Go tšea karolo mo dinyakišišong tše ke kgetho ya gago. O na le tokelo ya go se sa tšea karolo mo dinyakišišong nako efe kapa efe ge o se sa nyaka ntle le kotlo le ge dinyakišišo di le gare. Dinyakišišo di dumeletswe ke Yunibesithi ya Limpopo le kgoro ya tša maphelo.

O ka saena foromo ya tumelelano ge eba o dumela go tšea karolo mo dinyakišišong.

Ge ona le dipotšišo mabapi le dinyakišišo goba go tšea karolo mo dinyakišišong, lokologa go ka mpotšiša (Raesebe Johanna Molokomme). O ka nteletša mo nomorong ye 078 693 0305 goba 015 267 2903 (mošomo).

**Appendix F: Consent form (English version)**

**UNIVERSITY OF LIMPOPO ENGLISH (VERSION) CONSENT FORM**

Statement concerning participation in a research project.

**Title of the study: Prevalence and factors contributing to late antenatal care booking amongst pregnant women in primary health care facilities at Dikgale-Mamabolo local area, Limpopo province.**

I have read the information on the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I consent to this provided that my name and clinic number are not revealed.

I understand that participation in this study is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment that holds for my condition neither will it influence the care that I receive from my regular doctor.

I know that this study has been approved by the Turfloop Research Ethics Committee (TREC), University of Limpopo (Turfloop Campus). I am fully aware that the results of this study will be used for scientific purposes and may be published.

I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this study.

.............................................

Name of patient/volunteer

.....................................................................................................

Signature of patient or guardian. Place. Date.

…………………………………

Witness


Statement by the Researcher

I provided verbal and written information regarding this study.

I agree to answer any future questions concerning the study as best as I am able.

I will adhere to the approved protocol.

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

Name of Researcher. Signature. Date. Place

**Appendix G: Foromo ya tumelelano (Sepedi version)**

**UNIVERSITY OF LIMPOPO SEPEDI (VERSION) CONSENT FORM**

Setatamente mabapi le go tšea karolo ka go dinyakišišo.

**Thaetlele ya dinyakišišo: Boemo le mabaka a o a amanago le go thoma sekala sa boimana morago ga nako magareng ga baimana ka dikliniking tša ka tikologong ya Dikgale-Mamabolo, Profense ya Limpopo.**

Ke badile/ke kwele ka ga tshedimošo mabapi le maikemišetšo le morero wa dinyakišišo tšeo di šišintšwego gomme ke ile ka fiwa monyetla wa go botšiša dipotšišo gomme ka fiwa nako yeo e lekanego gore ke naganišiše ka ga taba ye.

Ke tloga ke kwešiša maikemišetšo le morero wa dinyakišišo tše gabotse. Ga se ka gapeletšwa go kgatha tema ka tsela efe goba efe. Ke a kwešiša gore go kgatha tema dinyakišišong tše ke ga boithaopo gomme nka tlogela go kgatha tema nakong efe goba efe ntle le gore ke fe mabaka. Se se ka se be le khuetšo efe goba efe go kalafo yaka ya ka mehla ya maemo a ka gape e ka se huetše le ge e ka ba tlhokomelo yeo ke e humanago go ngaka yaka ya ka mehla.

Ke a tseba gore dinyakišišo tše di dumeletšwe ke Turfloop Research Ethics Committee (TREC), Yunibesithi ya Limpopo (Khamphase ya Turfloop). Ke tseba gabotse gore dipoelo tša dinyakišišo tše di tla dirišetšwa merero ya saense gomme di ka phatlalatšwa. Ke dumelelana le se, ge fela bosephiri bja ka bo ka tiišetšwa.

Mo ke fa tumelelo ya go kgatha tema dinyakišišong.

................................................... .................................................

Leina la molwetši/ moithaopi

.............................. ................................. .............................................

Mosaeno wa molwetši goba mohlokomedi. Lefelo. Letšatšikgwedi.

…………………

Tlhatse

Setatamente ka Monyakišiši

Ke fana ka tshedimošo ka molomo le goba yeo e ngwadilwego mabapi le dinyakišišo. Ke dumela go araba dipotšišo dife goba dife tša ka moso mabapi le dinyakišišo ka moo nka kgonago ka gona. Ke tla latela melao yeo e dumeletšwego.

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

Leina la Monyakišiši. Mosaeno. Letšatšikgwedi. Lefelo

## Appendix H: Ethics clearance certificate

**University of Limpopo**
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

| | |
|---|---|
| **TURFLOOP RESEARCH ETHICS COMMITTEE** | |
| **ETHICS CLEARANCE CERTIFICATE** | |

**MEETING:**            21 October 2020

**PROJECT NUMBER:**            TREC/305/2020: PG

**PROJECT:**

**Title:**            Prevalence and Factors Contributing to Late Antenatal Care Booking Amongst Pregnant Women in Primary Health Care Facilities at Dikgale-Mamabolo Local Area, Limpopo Province

**Researcher:**            RJ Molokomme

**Supervisor:**            Dr TS Ntuli

**Co-Supervisor/s:**            Prof SF Matlala

**School:**            Health Care Sciences

**Degree:**            Master of Public Health

**PROF P MASOKO**
**CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE**
The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: REC-0310111-031

**Note:**
i)      This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.
ii)      Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.
iii)      PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Finding solutions for Africa

## Appendix I: Permission letter from Department of Health

**LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

## Department of Health

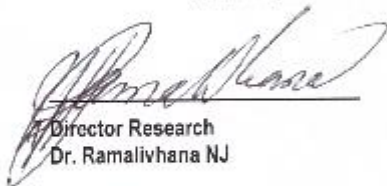| | | |
|---|---|---|
| Ref | : | LP_2020_10_038 |
| Enquires | : | Ms PF Mahlokwane |
| Tel | : | 015-293 6028 |
| Email | : | Kurhula.Hlomane@dhsd.limpopo.gov.za |

Johanna Molokomme

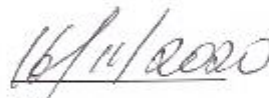<u>PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES</u>

Your Study Topic as indicated below;

PREVALENCE AND FACTORS CONTRIBUTING TO LATE ANTENATAL CARE BOOKING AMONGST PREGNANT WOMEN IN PRIMARY HEALTH CARE FACILITIES AT DIKGALE- MAMABOLO LOCAL AREA, LIMPOPO PROVINCE

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

Your cooperation will be highly appreciated

Director Research
Dr. Ramalivhana NJ

16/11/2020
Date

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

*The heartland of Southern Africa – Development is about people!*

57

# Appendix J: Permission letter from Capricorn District

## LIMPOPO
### PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA
#### DEPARTMENT OF HEALTH
#### CAPRICORN DISTRICT

Ref: 4/2/2
To: Ms Molokomme RJ
Dikgale Mamabolo local area

Dear Ms Molokomme RJ

**RE- Permission to conduct the study titled: Prevalence and Factors contributing to Late Antenatal Care Booking amongst Pregnant Women in Primary Health Care Facilities at Dikgale-Mamabolo Local Area, Limpopo Province**

The above matter refers

1. Following the approval granted by the Provincial Office on the 16th of November 2020, the District Office is granted you an access to enter in the facilities specified in terms of your study to collect data.

2. Terms and conditions in terms of the permission letter granted by the Provincial Research Office must be complied with.

Kind regards

**District Executive Manager**          DATE: 25/11/2020

**Capricorn District**

**Appendix K: Letter from editor**

                                                    P.O BOX 663
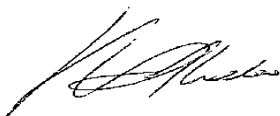
THOLONGWE

0734

25 February 2021

Dear Sir/Madam

This is to certify that mini-dissertation entitled "Prevalence and Factors Contributing to Late Antenatal Care Booking Amongst Pregnant Women in Primary Health Care Facilities at Dikgale-Mamabolo Local Area, Limpopo Province Molokomme Raesebe Johanna (student number 200306029) has been edited and proofread for grammar, spelling, punctuation, overall style and logical flow.

I have suggested few changes, provided the changes I recommended are effected to the text, the language is of an acceptable standard.

Please don't hesitate to contact me for any enquiry.

Kind regards

Dr. Hlaviso Motlhaka (BEDSPF-UL, BA Hons-UL, MA-IUP: USA, PhD-WITS, PGDiP-SUN)

Cell number: 079-721-0620/078-196-4459
Email address: hlavisomhlanga@yahoo.com