

University of Pretoria
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A survey on factors for late antenatal booking amongst pregnant women attending a Community Health Care Centre in Tembisa, Gauteng Province, South Africa

The dissertation is submitted in partial fulfillment of the requirements for the degree Master of Medicine in Department of Family Medicine, Faculty of Health Sciences, University of Pretoria.

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DECLARATION

I declare that the dissertation I am submitting to the University of Pretoria is my work. I have never submitted it for another degree at this university or any other university.

Dr Siphesihle Mlambo _____ Signed at _____ Date _____

The Faculty of Health Sciences Research Ethics Committee approved this research.

Reference number: 613/2021

DEDICATION

I dedicate this work to my husband, Bane Ndlovu, my children, Inami & Inakho Ndlovu, and my helper Mpho Pepenene, who have been my strength throughout my journey.

I also thank my mother, Nokuthula Mlambo, for raising me to be this strong woman, supporting and giving me sound advice whenever I needed a friend.

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Finally, to the Lord who protected me and gave me the wisdom and courage to finish this work.

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LIST OF ABBREVIATIONS

ANC	Antenatal Care
BANC	Basic Antenatal Care
CHC	Community Health Care Centre
EPV	Events Per Variable
FANC	Focused Antenatal Care
HAART	Highly Active Antiretroviral Therapy
HCWS	Healthcare Workers
HIV	Human Immunodeficiency
KZN	KwaZulu Natal
MCT	Mother-to-Child Transmission
MDG	Millennium Developmental Goals
MMR	Maternal Mortality Ratio
MOU	Midwife Obstetric Units
NCCEMD	National Committee for the Confidential Enquires into Maternal Deaths
NDoH	National Department of Health
NDP	National Development Plan
SDG	Sustainable Developmental Goals
WHO	World Health Organization

ABSTRACT

A SURVEY ON FACTORS FOR LATE ANTENATAL BOOKINGS AMONGST PREGNANT WOMEN ATTENDING A COMMUNITY HEALTH CARE CENTRE IN TEMBISA, GAUTENG PROVINCE, SOUTH AFRICA

Introduction

Maternal and perinatal deaths remain a significant issue in South Africa, regardless of various strategies in place. Antenatal care, is given to a pregnant woman during pregnancy and has been identified as vital in reducing maternal and child mortality. Late antenatal care is associated with several maternal and fetal complications, preventable with timely care. Previous studies identified several factors contributing to late antenatal care booking. Hence, the survey identifies and ranks the importance of the factors for late antenatal care booking and also elicits from participants what can be changed to improve and sensitise pregnant women on the importance of early antenatal care booking.

Methods

A cross-sectional survey was conducted amongst pregnant women attending their first antenatal care at Ebony Clinic in Ekurhuleni, Gauteng Province, after 20 weeks of gestation. A questionnaire was used to obtain participants' socio-demographic characteristics, assess factors for late antenatal care, and rank the participants' responses on the factors for late antenatal care booking. Data analysis was done using descriptive statistics.

Results

A total of 150 participants took part in the survey. All participants booked after 20 weeks gestation. The socio-demographic factors of maternal age, marital status, level of education, and occupational status did not show any relationship with late antenatal care booking.

Health care workers' behaviour and negative attitude were ranked as the most critical factors, with participants communicating fear of being hit or humiliated by workers as a leading factor in the delay in seeking antenatal care. The operational management group of factors of waiting in long queues and time spent in clinic was the second ranked group of factors. The participants' socio-economic standing of not having a permanent address ranked third. Furthermore, personal factors, religious beliefs and cultural issues were not acknowledged as factors affecting decision-making to initiate antenatal care. Participants suggested ongoing staff empowerment

in maternal healthcare, staff wellness, and accurate and consistent health educational information could expedite positive outcomes and encourage early antenatal booking.

Conclusion

The survey has highlighted the pivotal role of staff empowerment towards maternal health care, and staff support through wellness services. Clinic operational management could adopt best practices to address prolonged time spent accessing services. Quality and relevant health educational information for change should be provided.

1.1 INTRODUCTION

Late antenatal care booking has had a significant negative impact on maternal and child health outcomes. World Health Organization (WHO) antenatal care guidelines released in 2016 showed that globally, only 64% of women received antenatal care (ANC) four or more times throughout their pregnancy.¹ Saving Mothers report, South Africa (2011-2013) indicated that 16.6% of women who died during pregnancy did not attend the ANC clinic, and 7% attended occasionally.² There is a clear demonstration that there is still a gap in improving the number of encounters between pregnant women and healthcare providers. The sixth report of the National Committee for the Confidential Enquiries into Maternal Deaths (NCCEMD) indicated that 65% of maternal deaths were attributed to avoidable factors such as hypertension, infections, and hemorrhage.³ WHO antenatal care guidelines demonstrated that mother-to-child human immunodeficiency virus (HIV) transmission during pregnancy, labor, delivery, and breastfeeding without intervention ranged from 15-45%. However, it can be reduced to less than 5% with intervention.⁴ Early ANC booking could provide an opportunity for early diagnosis and management of preventable health conditions in pregnancy.

The perinatal period is an essential indicator of the health status of pregnant women, fetuses, and newborns.⁵ Thus, perinatal mortality is vital in providing critical information on outcomes that need to be improved to reduce perinatal and maternal deaths.⁵ Perinatal mortality is also the best marker of the quality of care offered to the pregnant woman during pregnancy and post-partum.⁵ In 2012, South Africa adopted the National Development Plan (NDP) with an outcome of a long and healthy life for all.⁵ The NDP for South Africa acknowledged that reducing infant and maternal mortality is vital in driving a healthy and long life narrative for all. However, while developed countries are winning the fight, South Africa remains one of the developing countries still faced with the catastrophe of high maternal and perinatal mortalities.

The 10th interim report of NCCEMD in 2012 showed Maternal Mortality Ratio (MMR) at 146 per 100,000 live births. The MMR increased two-fold to 310 per 100,000 live births, according to the 2013/2014 annual performance report by the National Department of Health (NDoH).³ The two-fold increase was attributed to poor implementation of the Basic Antenatal Care (BANC) policy and late antenatal care booking persistence.³

These statistics show that regardless of measures such as the BANC policy introduced by the NDoH in 2007, maternal and perinatal mortality remains a concern and is still rising.⁶

The 2016, NDoH Maternal Guidelines state that a woman should visit her healthcare provider when she suspects pregnancy, even as early as the first missed menstrual period.⁷ Several studies⁸⁻¹¹ on factors contributing to late antenatal bookings have been done in South Africa, recommendations put in place, and some even implemented. Despite this, some clinicians, this researcher inclusive, have observed a pattern of late antenatal booking amongst pregnant women attending Tembisa clinics.

1.2 RESEARCH QUESTION

What are the factors for late antenatal booking amongst pregnant women attending antenatal care at Tembisa clinics?

2.1 SOURCES OF REFERENCES

Articles were searched using ancestry, defined as citations from relevant studies to track down earlier research on which the studies were based.¹² Databases searched for existing literature relevant to the study were Medline Ovid, Google Scholar, UpToDate, and CINAHL. The keywords used were antenatal care, associated factors, late booking, and pregnant woman. These keywords were initially typed individually and combined using the Boolean logic (“and”, “or” and “not”) to formulate a search strategy. To limit research to relevance, the researcher used only articles focused on late antenatal booking, human studies, and less than ten years from 2008 to 2020. A literature search was done electronically and manually using the library at the University of Pretoria.

2.2 DEFINITIONS OF KEY CONCEPTS

2.2.1 Antenatal Care

Antenatal care is "care provided by a skilled health care professional to a pregnant woman to ensure the best health outcomes for both mother and baby during pregnancy. Components of ANC include risk identification, prevention and management of pregnancy-related and concurrent diseases, health education, and promotion."¹

2.2.2 Late Antenatal Care

Late antenatal care is the “first hospital or clinic antenatal attendance at 20 weeks or more gestation.”¹

2.2.3 Basic Antenatal Care

Basic Antenatal Care is “an approach used in the public health institutions of South Africa to provide health care services to pregnant women. The approach is one of the priority interventions for reducing maternal and child mortality.”¹

2.2.4 BANC Plus

BANC Plus is a “modified BANC approach. It is a continuation of BANC with reduced, goal-orientated visits up to 32 weeks’ gestation and after that routine visits every two weeks to 36 weeks or 38 weeks followed by weekly checkups.”¹³

2.3 LITERATURE REVIEW

2.3.1 ANTENATAL CARE

2.3.1.1 Antenatal Care in South Africa

ANC is care given to pregnant women during pregnancy and is crucial in reducing maternal and child mortality. Improving ANC and having access to quality ANC timeously is essential to achieving the strategic goals and improving the lives of both mothers and babies. ANC is widely recognised as a driving force in improving pregnancy outcomes. It plays a vital role in the early detection of existing maternal problems or those that will develop during pregnancy and enhances the general health and good habits of the woman during pregnancy.¹ According to the WHO, the three main problems that should be targeted during pregnancy are “complications of pregnancy itself, pre-existing conditions that worsen during pregnancy, and effects of unhealthy lifestyles.”¹

Historically, the traditional ANC approach developed by social reforms in the United States in early 1900, was practiced in South Africa. The model expected a pregnant woman to have up to 14 ANC visits regardless of the risk status.¹³ The model was accepted by the South African Nursing Council (SANC) and was introduced into the scope of practice for midwives.¹⁴ SANC recommended that midwives ensure that pregnant women attend ANC once a month until 32 weeks’ gestation, twice a month till 36 weeks’ gestation and weekly till

delivery.^{13,14} According to this model, a pregnant woman could have been seen multiple times in the clinic before delivery. Consequently, WHO disputed it as it seemed impractical for those with financial constraints.¹⁴

This traditional approach was replaced by a Focused ANC (FANC) model, recommended by researchers in 2001, and adopted by WHO in 2002.¹⁴ The FANC model was perceived to be more goal-orientated and effective. The FANC model focused more on quality care than quantity: the number of visits.¹⁴ South Africa adopted the FANC model in 2007, modifying it to suit the South African circumstances and was referred to as the basic antenatal care (BANC) approach.^{14,15} The BANC approach focused on early ANC attendance by all pregnant women and limited the number of ANC visits to a minimum of four or five per pregnancy for low-risk pregnancies.^{13,14} Subsequently, the NDoH advised that all healthcare facilities providing ANC should implement the BANC approach by the end of 2008.¹⁵

2.3.1.2 BANC Policy

The BANC policy was initiated as a quality improvement strategy, believing that good antenatal care could reduce maternal and perinatal mortalities. BANC policy encouraged four scheduled antenatal care visits at 26-28, 32, and 38 weeks, after the first visit at 20 weeks.⁶ However, data analysis from WHO antenatal care trial confirmed that perinatal mortality increased with the reduced antenatal visit model. These findings were consistent with two cluster randomised trials conducted in Zimbabwe summarized in a Cochrane systematic review.¹⁶ This review showed that few visits resulted in missed opportunities to detect and treat asymptomatic complications.

Several outcomes can be accomplished by adequately implementing the BANC policy, such as improving maternal and fetal health and the baby's survival and addressing negative social habits like smoking and alcohol. Also, pregnant women receive relevant information on warning signs during pregnancy and how to respond to them, family planning and contraception use, screening, testing, and treatment of HIV infection and medication that improve pregnancy outcomes.¹³

2.3.1.3 BANC Plus Policy

On 01 April 2017, the BANC Plus Policy was introduced with a mandate to continue with goal-orientated visits from the BANC model with additional two weekly visits to reduce those missed opportunities and improve the BANC policy outcomes.¹³ BANC Plus policy encourages eight antenatal care visits, with the earliest visit being as early as possible, before 14 weeks of gestational age (GA). The next scheduled visit is at 20 weeks, then 26 weeks (Appendix I). The other adjustments from the BANC model included visits at 30 and 34 weeks, then fortnightly till delivery.¹³ This new policy also aims to reduce infant and maternal mortality in South Africa. The benefits identified were “more and regular blood pressure and urine testing; frequent monitoring of baby's movements and growth measurements; early detection and timely treatment of health problems; and improving quality of care to reduce the number of infant and maternal mortality.”¹³

BANC Plus Policy is supported by the study done by Dorji et al.¹⁷ This study illustrated that by increasing the quality of ANC package in their setting in Bhutan and increasing ANC visits from four to eight, the MMR was markedly reduced from 255 to 86 deaths per 100,000 live births in 2012. The infant mortality rate was also halved from 61 to 30 per 1000 live births in the same year.

2.3.2 ADDITIONAL STRATEGIES TO REDUCE MATERNAL AND INFANT MORTALITY

2.3.2.1 Millennium Developmental Goals

The Millennium Developmental Goals (MDG) were agreed upon by the world's leaders at the Millennium Summit in September 2000 to reduce poverty and improve the lives of the unfortunate.¹⁸ These goals originated from the Millennium Declaration, which stated that everyone has a right to dignity, freedom, equality, and a basic standard of living. MDG had eight quantifiable goals and well-defined deadlines. While MDG 4 aimed to reduce under-five mortality and infant mortality rates by two-thirds, MDG 5 aimed to improve maternal health by reducing MMR by three-quarters between the periods of 1990 and 2015.¹⁸ MDG 5 targeted universal access to contraceptives, adolescent birth rate, antenatal care coverage, and unmet needs for family planning as tools to achieve its mandate.¹⁸

Despite significant advancements in achieving some MDGs, the progress has been uneven between the countries. MMR was reduced from 176.22 in 2008-2010 to 156.06 per 100,000 live births in 2011-2013 in South Africa, but maternal deaths from preventable causes such as hypertension, haemorrhage, and infections were still high.²

2.3.2.2 Sustainable Developmental Goals

After 2015, the United Nations General Assembly developed a collection of 17 global goals known as Sustainable Developmental Goals (SDG) to succeed the MDG.¹⁹ SDG 3 aims to reduce maternal mortality to less than 70 deaths per 100,000 live births.¹⁹ The key strategy to meeting SDG 3 is reducing adolescent pregnancies, providing better education for women and girls, and achieving universal coverage of skilled birth attendants. SDG 3 also aims at ensuring universal access to sexual and reproductive health care services, including family planning information, education, and the integration of reproductive health into national strategies and programs.¹⁹ SDG country report 2019 from Stats SA demonstrated that there has been progress regarding SDG 3 in South Africa. For example, the under-5 mortality rate has steadily declined from 47.7 per 1000 live births in 2010 to 30.2 per 1000 live births in 2015. The target is 25 per 1000 live births by 2030. There was an improvement in maternal mortality noted from 276 in 2007 to 121 per 100,000 live births in 2016.¹⁹

The South African DHIS 2015/2016 also showed a significant decrease in delivery rate among 18-year-olds in most districts;²⁰ however, there are still concerns regarding rural areas. This decrease has been attributed to improved access to educational information and teenage reproductive health services in urban areas compared to rural areas.²⁰ Consequently, the teenage pregnancy rate remains a concern in rural areas.

2.3.3 HEALTH EDUCATION, PREVENTION, AND PROMOTION DURING ANTENATAL CARE

One of the significant components of ANC visits is to provide relevant information and educate pregnant women on preventative measures to be practised during pregnancy. Some of these include nutritional information emphasising the importance of taking supplements such as iron and folate to prevent anaemia and other congenital disorders, and calcium to prevent hypertension in pregnancy. Moreover, red-flag information on early detection of pregnancy-induced hypertension, and signs of labour is provided.¹³ Patients are also advised on measures to prevent mother-to-child transmission (MCT) of Human Immunodeficiency virus (HIV) during

and after pregnancy and the use of barrier methods to prevent infection with HIV and other sexually transmitted diseases.¹³

It is well known that socio-cultural beliefs and cultural practices are part of our society in developing countries. Some of these practices may have adverse outcomes. For example, many pregnant women at Ekurhuleni have admitted to drinking "*isihlambezo*" during pregnancy, a traditional medicine that facilitates quick and painless delivery.⁸ Respecting one's beliefs is essential, but giving information on adverse effects that could result from such practices is a healthcare professional's responsibility..

2.3.4 LATE ANTENATAL CARE BOOKING AND ITS IMPLICATIONS

Late antenatal booking is associated with several maternal and fetal complications. The sixth report of NCCEMD showed that 65% of maternal deaths were due to avoidable factors such as obstetric haemorrhage, hypertension, and pregnancy non-related infections.³ The factors mentioned above can occur at any stage of pregnancy, for example, during the antepartum period, labor, delivery, or post-partum. If the patient is monitored correctly, complications can be managed appropriately in all stages.³ This was supported by a study,²¹ demonstrating that hypertensive disorders were the leading causes of stillbirths. Roberts et al.²² emphasised that late and inadequate utilisation of antenatal care and low proportion of deliveries by well-trained healthcare personnel contribute to high maternal mortality.

According to WHO, the rate of MCT of HIV during pregnancy, labour, delivery, or breastfeeding without intervention ranges from 15% to 45%. However, it can be reduced to less than 5% with interventions such as initiating of highly active antiretroviral therapy (HAART) and appropriate neonatal care post-delivery.¹ Early antenatal care attendance allows a pregnant woman to be tested for HIV and if infected, the mother will be started immediately on HAART to prevent MCT. Preventing MCT from the perspective of better health for mothers and their children is vital to attaining SDG.¹⁹ However, the late antenatal booking will result in missed opportunities to curb the disease and may predispose the mother and child to complications that could lead to morbidity or mortality.

2.3.5 FACTORS CONTRIBUTING TO LATE ANTENATAL CARE FROM PREVIOUS STUDIES

Several studies^{8-11,17,22-32} have shown that several factors can cause late antenatal care first visit. Their research indicated that personal factors such as lack of education and knowledge of recognition of pregnancy symptoms, unplanned or unwanted pregnancies, stigmatisation, socio-economic, cultural, religious, and administrative factors play a significant role in deciding whether to seek antenatal care early or late.

2.3.5.1 Personal factors

Lack of education

Sinyange et al.²³ highlighted that women with higher education are likelier to book for ANC earlier than those without education. Furthermore, the study demonstrated that groups exposed to television and newspapers had a significantly lower probability of delaying ANC first visit. Sakala²⁴ showed that not only the lack of education by a pregnant woman but even the lack of education by the male partner or husband significantly influences the initiation of ANC.

Unplanned and unwanted pregnancies

Ebonwu et al.²⁵ showed that 82% of participants interviewed admitted that their pregnancies were unplanned and some even unwanted, which resulted in a delay in seeking antenatal care. Other studies^{9,33} have affirmed that unplanned pregnancy is associated with late antenatal care. Unplanned pregnancies may also be associated with intimate partner violence, contemplation of pregnancy termination, which can delay seeking medical advice and, thus, late presentations.³⁴ All these studies highlight the benefit of ongoing health education and information sharing at all stages of ANC visits.

Stigmatisation

HIV testing and disclosure are other contributing factors to late antenatal booking. Selala⁹ has shown that patients with HIV delay seeking medical help due to fear of being stigmatised. In addition, literature has shown that they are at high risk for mortality and morbidity during pregnancy.³⁵ This statement was supported by the study done in Limpopo by Mothiba et al.³⁶ Furthermore, the study by Amnesty International Researchers³⁷

showed that pregnant women still die in South Africa due to fear of their HIV status being revealed during antenatal care visits.

2.3.5.2 Socio-economic factors

In July 1994, the then Minister of Health in South Africa, Dr. Nkosazana Dlamini-Zuma, announced free healthcare services for pregnant women and children under the age of five years. Despite this policy, many patients needed help to afford transport fares to their nearest clinic or hospital. Ejeta et al.³⁸ argued that household income was one of the main factors associated with late antenatal care. His study was supported by Sinyange et al.²³, who showed that low monthly household income is associated with underutilisation of antenatal care services because money is needed to pay for transport to get to the clinic, and for some services like opening a file as well as other indirect costs such as food.

2.3.5.3 Cultural factors

Cultural beliefs have a significant influence on deciding whether to attend ANC or not. A study done in Ethiopia showed that 50.9% of pregnant women were involved in traditional practices during their pregnancy, and 29.7% had their deliveries at home.³⁹ A last-born child is delivered at home, and the family must assist a pregnant woman during delivery. Mathole et al.⁴⁰ illustrated that in Zimbabwe, 57% of women believed that pregnancy is vulnerable to witchcraft during the early pregnancy. Hence, no pregnancy disclosure to family or friends in the early stages is allowed. A study by Ngomane and Mulaudzi²⁶ also concurred that fear of bewitchment was one of the causes of delay in antenatal care attendance in Limpopo, South Africa. The studies^{26,40} above implicated that current antenatal care practices disregard pregnant women's cultural beliefs, views, and experiences, which could be critical in bringing about effective change in perinatal care if addressed.

Food selection during pregnancy can be associated with different preferences, such as the taste, smell and texture.¹⁰ However, cultural beliefs also play a huge role. A study by Chakona and Shackleton¹⁰ in the Eastern Cape, South Africa, showed that 45% of pregnant women in Kat River Valley did not eat oranges due to beliefs that they can cause complications for an unborn child, such as jaundice. The same study showed that some Nigerian pregnant women consume zinc-rich seeds in their porridge and leaves from different trees, which are

good sources of vitamins, calcium iron, and zinc. These practices are said to increase milk production, expel intestinal worms and increase weight gain in infants.¹⁰ Encouraging such women through appropriate nutritional education to adopt a healthy diet with protein-rich foods, vegetables, and fruits may be important antenatal care practices for pregnant women. It may yield positive outcomes, hence reducing antenatal and perinatal complications.

2.3.5.4 Religious factors

Religion plays a fundamental role in many Africans' lives; religion's positive advantages could be used to promote maternal health. Solanke et al.²⁷ argued that "religious beliefs can cause African women to ignore very vital maternal health care services, refuse to be attended by male healthcare personnel, and even prefer to use faith instead of quality medicine." The initiative should be sought to mobilise religious organisations to partake in improving maternal health outcomes.

2.3.5.5 Administrative factors

Clinic operating system

Studies have shown that the clinic's operating system is one administrative factor that contributes to late antenatal booking. Some patients do not have identity documents or even permanent residential addresses, which impede patients from opening files, delaying early encounters between the pregnant woman and health care provider. Not conducting ANC on that day and attending "too early"²⁸ were some of the excuses healthcare personnel gave that led to late antenatal bookings. Other shortfalls in the clinic operating systems were short and rushed consultations leading to patients being unable to raise their concerns; healthcare professionals being too slow; mixing and losing their clinic cards which is time-consuming thus influencing the patient's perception of the importance of antenatal care.

Clinic operating hours

Clinic operating hours contributes to late bookings, such as being turned away when the maximum patient number for the day is reached.²⁸ However, Gatsinzi and Maharaj⁴¹ showed that some patients were happy with services rendered but complained about long waiting hours for example more than two hours.

2.3.5.6 Healthcare professionals' behaviour and attitude

The study done by Roberts et al.²² on the patient-provider relationship and antenatal care uptake at two referral hospitals showed that pregnant women delay seeking medical help due to nurses' attitudes and verbal abuse. Besides, emotional, and physical abuse instills fear in patients. In the same study, Roberts et al.²² also indicated that nurses had been implicated in humiliating, verbally abusing, and even physically abusing patients to have control over them and assert authority, resulting in patients delaying seeking medical intervention.

Oosthuizen et al.⁴² conducted a study and introduced a "CLEVER" package. CLEVER, is the acronym for Clinical care, Labor ward management, Eliminating barriers, Verify care, Emergency obstetric simulation training, and Respectful care. The CLEVER package is a multi-component, context-specific intervention package that addresses suboptimal intrapartum care and behavior change. The above study was aimed at evaluating the impact of the CLEVER package. The results obtained from the study showed that the CLEVER package significantly reduced avoidable fresh stillbirths, meconium aspirations, and birth asphyxia in the intervention units just by improving staff attitude towards patient care.⁴² Staff attitude and behavior contributed to delayed antenatal care attendance. By extrapolating the CLEVER package intervention results, similar strategies to improve staff attitude during antenatal visits may enhance early antenatal booking.

2.3.6 CONCLUSION

Based on the literature reviewed, late antenatal booking remained a significant problem in South Africa. The identified contributing factors range from administrative, personal, and healthcare worker related. Several strategies to reduce maternal and perinatal morbidity and mortality have little impact. Many pregnant women still miss the opportunity to have early detection and management of pregnancy-related complications and promote a healthy pregnancy experience.

3.1 INTRODUCTION

This chapter discusses the aim, objectives, study design, study setting, patient selection, sample size, data collection, statistics, and ethical considerations.

3.2 AIM

To determine the factors for late antenatal booking amongst pregnant women attending antenatal care in Tembisa clinics.

3.3 OBJECTIVES

The objectives of this study are:

- i. To ascertain the demographics of women attending antenatal care at Tembisa clinics who book late.
- ii. To determine factors for late antenatal booking amongst women attending antenatal care in Tembisa clinics.
- iii. To describe and rank the factors for late antenatal booking amongst women attending antenatal care in Tembisa clinics.

3.4 STUDY POPULATION

3.4.1 Study design

A descriptive cross-sectional survey was used as the appropriate research design to determine the factors for late antenatal booking.

3.4.2 Study setting

This survey was done at the antenatal care clinic, in Ebony Park Community Health Care Centre (CHC). Ebony Park CHC borders Ekurhuleni Health District and the City of Johannesburg. Due to its location, most patients who utilise its services live within Tembisa township. It started operating as a 24-hour facility in 2020. Reports

from the obstetrics unit that supports its maternal health services indicated that many pregnant women book late for their first antenatal visit. These reasons informed its selection as the study site for this survey.

3.4.3 Patient selection

Inclusion Criteria

This survey included all pregnant women who attended their first antenatal care visit at more than 20 weeks of gestational age (GA) as they were defined as late bookers and those that consented to the study.

Exclusion Criteria

- I. Pregnant women attending antenatal care first visit before 20 weeks gestation because they were categorized as early bookers
- II. Pregnant women attending antenatal care follow-up visits since it was not their first antenatal care visit
- III. Pregnant women who were unwilling to participate in the study or cannot give consent (under 18 years inclusive) since the questionnaire issued had questions that might trigger psychological issues if one was not mentally ready or not willing to consent.

3.5 SAMPLE SIZE & SAMPLING

Since the objectives were simply descriptive, power calculation was not considered. One hundred and fifty (150) pregnant women attending their first antenatal care visit beyond 20 weeks GA were enrolled in the study. A total of 150 participants was obtained by calculating precision around a proportion. Many factors were measured. A generic of 50% or 0.5 using a PASS 2021 sample size software was used.⁴³ A sample size of 150 participants produced a two-sided 95% confidence interval with a width equal to 0.16529 when the sample proportion was 0.5. This meant that $\pm 8\%$ precision was achieved, half the width of the confidence interval, with 150 participants in the descriptive study.⁴³

The researcher used a convenience sampling⁴⁴ method to attain the targeted number of participants. Thus, all patients, both walk-ins and booked, who met the inclusion criteria, and gave their consent on the day of data collection were enrolled in the survey.

3.6 DATA COLLECTION

3.6.1 Data collection instrument

Data was collected using a self-administered questionnaire (Appendix II) designed by the researcher. The questionnaire was drafted in English because it is the common language among the diverse cultural groups in the setting. The researcher administered the questionnaire and provided oral translations where necessary.

The questionnaire had three sections. Section A comprised participants' socio-demographic information. Section B contained twenty-four factors contributing to late antenatal care booking from previous studies.^{8-11,17,22-32,39,42} Participants reflected their level of agreement with these factors using a Likert scale ranking of 1-4, where a scale of one meant the least important, and four was the most crucial factor. Section C included additional factors that could contribute to late antenatal booking, and participant's suggestions on encouraging early ANC booking. About one hundred and fifty (150) questionnaires were given to respondents who met the inclusion criteria. The survey was conducted over three months (6 April to 30 June 2022).

3.6.2 Method of data collection

Information leaflet (Appendix III) explaining the research aim and objectives were available to each participant. It had clear information regarding participating in the study. Respondents were allowed to participate freely and were informed about their right to withdraw at any point if they felt uncomfortable or violated. Those who agreed to participate in this study signed a written informed consent. Informed consent was the primary prerequisite for participation in the study, meaning that only patients who signed consent were recruited. Informed consent was signed voluntarily after reading and understanding the research aim and objectives.

The researcher visited the selected study site. The researcher obtained permission for the survey from the operational manager after introductions, explaining the purpose of the study, and presenting ethical approvals for the study. Data collection commenced from 6 April to 30 June 2022. ANC in Ebony clinic is done daily on week days only. The researcher was available to collect data daily on week days except Tuesdays due to work commitments. Subsequently, in the last month, June 2022, the researcher collected data daily to ensure the determined number of participants was attained.

3.7 DATA ANALYSIS

A total of 150 questionnaires were distributed to patients enrolled in the survey. The response rate was 100%. All 150 questionnaires were fully completed and analyzed. The previously identified contributing factors and socio-demographics were summarized using frequencies and percentages.⁴³ The survey set out to determine the factors for late antenatal care booking and their ranking by participants. Factors were grouped as operational management, personal issues, socio-economic, cultural, religious beliefs, and healthcare professional factors. Participants responded to a total of twenty-four factors. Participants' responses have been hierarchized from highest to lowest using the obtained percentages. The higher the percentage response, the more likely the factor influenced decision to delay antenatal care booking.

3.8 ETHICAL CONSIDERATIONS

3.8.1 Informed consent

Participants were given an informed consent form (Appendix III) explaining the aim and objectives of the research. The document also had information on how the study will be conducted and the duration of the study. The informed consent form had clear information regarding participating in the study. All patients who agreed to participate were asked to sign a written informed consent. Some questions in the Questionnaire may pose an emotional risk to a vulnerable population. Participants were informed about the availability of support in the form of counseling from the researcher. Their decisions would be respected should they need to stop, withdraw, or not answer any of the questions.

3.8.2 Anonymity

Not having participant identifier achieved anonymity. A signed sample is attached (appendix III). Participants' data was collected on an Excel spreadsheet with an allocated number. Only the researcher will have access to the participants' information.

3.8.3 Ethical approvals

The protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria and was approved (Ethics reference number 613/2021) (Appendix IV). Permission to collect data at Ebony Park clinic was granted by the Ekurhuleni Health District Research Committee (NHRD no: GP_202110_010). The researcher adhered to the principles of Helsinki and clinical guidelines.

4.1 INTRODUCTION

One hundred and fifty pregnant women attending their first ANC visit after 20 weeks gestation in Ebony Park clinic participated in the survey.

4.2 PARTICIPANTS' DEMOGRAPHICS

4.2.1 Socio-demographics

The socio-demographic factors of respondents are reflected in Table 1 below. Most participants, 118 (78.7%), were below 35 years, and only a fifth, 32 (21.3%) were above 35 years.

Half of the respondents, 76 (50.7%), were single; a smaller proportion were cohabitating, 42 (28%), and married, 23 (15.3%), and the rest of the participants 9 (6%) were either widowed, divorced or separated.

Almost all respondents, 149 (99.3%), have attained some level of education, while less than one percent, 1 (0.67%), were without formal education. Slightly over half of the participants were unemployed, 86 (57%), less than a fifth were employed, 24 (16%), and less than a third, 40 (27%), lived off-piece jobs, were self-employed, or had other source of income such as government grants.

Over half of the participants, 96 (64%), reside within a walking distance radius; a third, 49 (33%), needed at least one taxi as a means of transport; and a tiny proportion needed more than one bus 4 (2.7%), or one bus, 1 (0.7%), to get to the clinic. Household income ranged from R10,000 to R25,000 per month. Most respondents 130 (86.7%), fell within the low-income household category of below R10,000 per month, while a tenth, 16 (10.7%), are middle-class income households earners between R10,000 and R25,000 per month. Only a minority, 4 (2.6%) were earning above R25,000 per month. Most respondents, 123 (82%), were multiparous, and less than a fifth, 27 (18%), were primigravids.

Table 1. Demographic characteristics of the respondents

Variable	Response	Frequency (n)	Percentage (%)
Age	15-19 years	15	10
	20-24 years	33	22
	25-29 years	45	30
	30-34 years	25	16.7
	40-44 years	26	17.3
	>45 years	6	4
Marital status	Single	76	50.7
	Married	23	15.3
	Widowed	3	2
	Divorced	4	2.7
	Co-habiting	42	28
	Separated	2	1.3
Education	Primary	6	4
	High school	129	86
	Tertiary	14	9.3
	None	1	0.7
Distance to clinic	Walking	96	64
	One taxi	49	33
	One bus	1	0.7
	Two taxis	1	0.7
	Two buses	3	2
	Own car	0	0
Occupation	Unemployed	86	57
	Self-employed	8	5
	Employed	24	16
	Piece-jobs	22	15
	Others (Grant)	10	7
Parity	One	27	18
	Two	45	30
	Three	46	30.7
	Four	30	20
	Five or more	2	1.3
Household income	Low (<R10000)	130	86.7
	Middle (R10000 – R25000)	16	10.7
	High (> R25000)	4	2.6
Total		150	100

4.3 RANKING OF FACTORS CONTRIBUTING TO LATE ANTENATAL BOOKING

Participants responded to factors that could contribute to late antenatal booking on a Likert scale of 1- 4. A Likert scale of one meant the factor was unimportant, and four meant the factor was crucial and might influence the participant's decision to start or delay the first antenatal care visit. The details of participants' responses per group of factors are presented in Table 2.

4.3.1 Healthcare worker's attitude and behaviour

The majority of participants stated that humiliation, 130 (86.4%), and bad attitudes, 129 (86%) by healthcare workers (HCWs) played a significant role in delaying attending ANC. Less than half of the participants, 69 (46%), even feared being physically assaulted by healthcare workers. Only a few were concerned about lack of confidentiality, 15 (10%), or still fear HIV stigmatization, 11 (7.3%).

4.3.2 Clinic operational management factors

About two-thirds of the participants 95 (63.3%), indicated that the main factor for late antenatal care booking was long waiting hours and multiple clinic visits, 94 (62.7%). Half of the respondents, 78 (52%), indicated poor services as decisive for timely ANC visits.

4.3.3 Socio-economic factors

Half of the participants ranked not having a permanent address, 79 (53%), and not having transport fare, 75 (50%), as very important to late antenatal care booking. Less than a fifth did not want to lose their jobs, 20 (13%), nor had the time, 26 (17.3%) to book early for antenatal care.

4.3.4 Personal Issues

A third of respondents cited fear of partner rejection, 58 (38.7%), ambivalence to keep the pregnancy, 50 (33%), and not feeling any pregnancy symptoms, 47 (31.3%), as causes for delay in attending antenatal care. Less than a fifth of participants mentioned fear of parents' reaction, 29 (19.3%), and HIV stigma, 24 (16%) as reasons to delay even revealing their pregnancy status.

Table 2: Participant's responses on factors for late antenatal care booking

		Don't know	Prefer not to say	Not important	Very important
		Frequency (n) Percentage (%)	Frequency (n) Percentage (%)	Frequency (n) Percentage(%)	Frequency (n) Percentage (%)
Operational	I waited in a long queue to be seen by a doctor or nurse	10 (6.7%)	12 (8%)	33 (22%)	95 (63.3%)
	We have to come to the clinic too many times.	22 (14.7%)	7 (4.7%)	27 (18%)	94 (62.7%)
	Services we get in clinics are poor.	14 (9.3%)	17 (11.3%)	41 (27.3%)	78 (52%)
Personal Issues	I am not sure if I want to keep the baby	12 (8%)	9 (6%)	79 (52.7%)	50 (33.3%)
	I am avoiding testing for HIV	2 (1.3%)	1 (0.7%)	123 (82%)	24 (16%)
	I did not see or feel any pregnancy symptoms.	12 (8%)	2 (1.3%)	89 (59.3%)	47 (31.3%)
	I was afraid my partner will leave me.	2 (1.3%)	3 (2%)	87 (58%)	58 (38.7%)
	I was scared of my parents' reaction.	3 (2%)	3 (2%)	115 (76.7%)	29 (19.3%)
Socio-economic	I have no money for transport.	4 (2.7%)	1 (0.7%)	70 (46.7%)	75 (50%)
	I do not want to lose my job.	2 (1.3%)	6 (4%)	122 (81.3%)	20 (13.3%)
	I work from morning to evening, no time for clinic.	3 (2%)	6 (4%)	115 (76.7%)	26 (17.3%)
	I do not have a permanent residential address.	4 (2.7%)	0 (0%)	65 (43.9%)	79 (53.4%)
Cultural Values	A woman should not travel during pregnancy.	128 (85.3%)	0 (0%)	18 (12%)	4 (2.7%)
	A pregnant woman must not eat certain foods such as "oranges because it causes yellow eyes."	136 (90.7%)	0 (0%)	10 (6.7%)	4 (2.7%)
	A pregnant woman must eat certain foods, such as leaves from trees because they contain vitamins.	139 (92.7%)	0 (0%)	10 (6.7%)	1 (0.7%)
	The husband or partner decides whether a woman should go to the clinic or not.	130 (86.7%)	3 (2%)	16 (10.7%)	1 (0.7%)
	The last-born child must be delivered at home	38 (92%)	0 (0%)	11 (7.3%)	1 (0.7%)
Religious beliefs	I believe that prayer may heal everything.	73 (48.7%)	24 (16%)	33 (22%)	20 (13.3%)
	A pregnant woman should not be touched by a male doctor or nurse.	82 (54.7%)	19 (12.7%)	46 (30.7%)	3 (2%)
Healthcare Professionals	Nurses might hit you.	52 (34.7%)	11 (7.3%)	18 (12%)	69 (46%)
	Nurses might shout or scream at you.	9 (7.3%)	2 (0.7%)	10 (6.7%)	129 (86%)
	People will know why you are in the clinic.	5 (3.3%)	7 (4.7%)	123 (82%)	15 (10%)
	Fear of being stigmatized because I have HIV	16 (10.7%)	4 (2.7%)	119 (79.3%)	11 (7.3%)
	Fear to be humiliated by healthcare workers	10 (6%)	1 (1.3%)	9 (6%)	130 (86.4%)

4.3.5 Religious and Cultural values

As shown in Table 2, religious and cultural factors had minimal influence on participants' decision on when to start antenatal care. Participants were mainly ambivalent regarding religious and cultural values contributing to late antenatal care booking.

Table 3: Hierarchy of Very important factors for late antenatal care booking

Factors for late antenatal booking		Very important factors	
		Frequency (n) Percentage (%)	Hierarchy
Healthcare Professionals Behaviour	Fear to be humiliated by health care workers	130 (86.4%)	1
	Nurses might shout or scream at you	129 (86.0%)	2
Operational Management	I waited in a long queue to be seen by a doctor or nurse	95 (63.3%)	3
	We have to come to the clinic too many times	94 (62.7%)	4
Socio-economic status	I do not have a permanent residential address	79 (53.4%)	5

Table 3 highlights that the healthcare professionals' behaviour, clinic operational management systems, and patient's socio-economic status are decisive for seeking early antenatal care.

Table 4: Participant's response on the importance of antenatal care services

		Don't know	Prefer not to say	Not important	Very important
		Frequency (n) Percentage(%)	Frequency (n) Percentage(%)	Frequency (n) Percentage(%)	Frequency (n) Percentage(%)
ANC services	To Attend antenatal care clinic	4 (2.7%)	1 (0.7%)	6 (4%)	139 (92.7%)
	To be taught about breastfeeding and formula feeding while pregnant	1 (0.7%)	0 (0%)	5 (3.3%)	144 (96%)
	To be taught about family planning while pregnant	1 (0.7%)	0 (0%)	8 (5.3%)	141 (94%)
	To be tested for HIV when pregnant	7 (4.7%)	0 (0%)	6 (4%)	137 (91.3%)
	To visit the clinic more than four times when pregnant	65 (43.9%)	0 (0%)	4 (2.7%)	79 (53.4%)

Table 4 below shows the importance of ANC services to participants. The vast majority of respondents felt it was essential to utilize ANC services. However, just over half, 79 (53.4%), acknowledge the importance of frequent ANC visits. Many respondents, 65 (43.9%), do not know how often a pregnant woman should attend ANC.

4.4 STRATEGIES SUGGESTED BY PARTICIPANTS TO ENCOURAGE EARLY ANTENATAL BOOKING

4.4.1 Staff mental assessment and Training

Participants suggested that antenatal care service providers should undergo psychological evaluations or mental health training to be able to deal with pregnant women. They complained that clinic staff shout and scream at them when they ask for information; hence, they are fearful even to ask questions or come to the clinic, especially when they are not sick.

*"I once asked the nurse why I must come every month for checkup, but I didn't get an answer. Instead, she said it is not her problem if I come or not come; she even went as far as saying I was being rude for questioning her follow-up date."
(Participant 74)*

*"I think nurses have their own problems to deal with because they are always angry and should go for counselling."
(Participant 13)*

4.4.2 Lack of information

Among the 150 participants enrolled in the study, 12 participants verbalized that they tried to book early after finding out they were pregnant. Unfortunately, they were turned back from the clinic and were told it was too early to book.

"We were very happy with my husband when we did a home pregnancy test, and it came back positive. It was our first child. I was only one month pregnant, and I went to clinic the following day to confirm and find out what to do. When I arrived in the clinic, they did a test which was positive, and they asked me about my last menstrual period. After checking something like a wheel the nurse said, "it's still very early to start clinic, you must come back after two or three months." I went home and decided to come back when my tummy was showing." (Participant 36)

"I was having stomach cramps and went to the clinic and found out I was pregnant. I think I was only few weeks pregnant since I have not missed a period. After a nurse checked me, she just said congratulations you are pregnant and told me she will only give me panado for stomachache. She didn't tell me when I must come back for follow up so I went home and thought I will only go back to clinic once I am sick again." (Participant 17)

Seven participants needed to be made aware that they were late for booking. One participant believed that antenatal care starts after five months of pregnancy, as she believed the first four months must be kept a secret.

“In my culture, you must not tell people you are pregnant in the first four months, so it’s difficult to start clinic when nobody knows you are pregnant; we only start clinic once stomach is big and showing.” (Participant 78)

Participants suggested that billboards or message conveyors should be mounted in the clinics to emphasize when to start antenatal care.

“Why it is not written in a big board by the gates when to start clinic or even played in those TV, we see in clinics.” (Participant 112)

4.4.3 Extension of services

Some participants raised issues of antenatal bookings being made only during the day from Monday to Friday rather than after hours or on weekends. Participants suggested that antenatal care services including bookings, should be rendered daily as a 24-hour service to cater for those who cannot come during the weekday work hours.

“It will be better if pregnant women can attend clinic any day because some of us are working long hours and we are only free after work and on weekends, and our bosses don’t give us time off.” (Participant 13)

5.1 INTRODUCTION

While South Africa has been struggling with reaching the Millennium Developmental Goals 4 and 5 and Sustainable Developmental Goal 3, significant progress has been noted, and maternal and perinatal deaths have been reduced.¹⁸ Suboptimal intrapartum care and poorly functioning healthcare systems contribute to slow progression to reach the targeted goals¹. ANC is the key component in reducing maternal and child mortality. Improving antenatal care services and having access to quality antenatal care timeously is crucial to achieving strategic goals and improving the lives of both mothers and babies.^{2,4}

5.2 SOCIO-DEMOGRAPHIC FACTORS

The socio-demographic factors of maternal age, marital status, level of education, and occupational status did not show any relationship with late antenatal care booking. This is in keeping with the study done by Ebeighe and Igberase⁴⁵ in Nigeria, which showed that most women booked late, irrespective of their education, social class, parity, and age. Further, the results from another study²³ imply that women who were older and experienced were more likely to delay ANC booking, which is not in keeping with the results obtained from this survey as the majority of participants who booked late were below the age of 30.

The survey has shown that most participants who booked late for antenatal care were unemployed compared to their employed counterparts. This finding might be attributed to more participants living off self-employment and piece jobs, consequently neutralizing the number of employed and presented late. This finding resonates with Ghororo and Igbage's study,⁴⁶ which showed that though antenatal services were rendered for free in clinics, women still need finances to support their daily living and thus are involved in various economic activities that result in limited time to seek antenatal care.

This research showed that most participants who booked late for antenatal care had attained some education. This finding refuted the notion from other studies,³¹⁻³² which stated that women with some education were more likely to initiate ANC earlier than those without education due to exposure and access to educational material.³¹⁻³²

The national standard rate of low-income earners in South Africa is currently at a minimum wage of R7880 per month, while median salary is R27100 per month. Maximum wage is R139000 per month or more, depending on employees' experience, level of education, and others, according to the Time Doctor article released in May 2023.⁴⁷ From the categorization of household income in this survey, most participants who booked late for antenatal care fell within a low socio-economic salary range, meaning they earn below R10,000. This picture is unsurprising because public healthcare services at the local public clinics are free and cater for the underprivileged. Those with higher economic status utilize private health care services. However, there was no link between monthly household income and late antenatal care booking. This could also be explained by the fact that most participants stayed within walking distance from their clinics. Nevertheless, pregnant women still need financial assistance to deal with their day-to-day needs besides pregnancy, such as providing for their families.

5.3 FACTORS RATED TO BE KEY CONTRIBUTORS TO LATE ANTENATAL BOOKING

5.3.1 Healthcare workers' attitudes and behaviour

In this survey, healthcare workers' attitudes and behaviour were rated as one of the decisive factors for late antenatal care booking. This result is supported by findings from a study done in Malawi,²² which showed that patient-provider relationships are crucial in influencing the perception of quality of care. A systematic review by Mannava et al.⁴⁸ showed that the issue of healthcare workers' behavior and attitude is multifaceted. Different factors influence the type of behavior and attitude, such as organizational (lack of staff and resources) or individual factors (professionals' beliefs about maternal age, marital status of a pregnant woman, fatigue and skills deficiencies). Imposing individual beliefs on patients may impact them negatively, violating the fundamental human right to proper health care services, protection, quality care, and positive health outcomes.⁴⁸

A third of participants raised an issue of fear of being physically assaulted by healthcare workers. The study by Roberts et al.²² showed that healthcare workers even resort to physically assaulting patients to gain control or assert authority over them. The result highlights the need for staff welfare programs and ongoing in-serving training to enhance continuous motivation and behavioral change.

In the latest saving mothers report (2014-2016), the committee summarized its recommendations into five key points: the five H's (HIV, Hemorrhage, Hypertension, Healthcare worker training, and Health systems strengthening) as the main focal points to ensure better pregnancy outcomes.⁴⁹ The report purported HIV as the central subject, highlighting the need to, "ensure a non-judgmental approach".⁴⁹ Results obtained in this survey indicates that about 10% of participants still fear being stigmatized for testing HIV positive and complained about subjection to a lack of privacy in clinical settings. Ensuring confidentiality and building a trusting patient-provider relationship could allay patients' fears.

5.3.2 Clinic operational management factors

Clinic operational management factors were other essential factors for late antenatal care booking from this study. The main concerns raised by participants regarding operational management were long waiting hours, multiple clinic visits, and poor services rendered. These issues were similar to the study by Gatsinzi and Maharaj in KwaZulu-Natal (KZN).⁴¹ Although participants in the KZN study complained of long waiting hours, they were happy with the services rendered.

While participants were knowledgeable about the benefits of antenatal care services, this was at odds with some aspects of their beliefs. Responses showed a knowledge gap and a lack of understanding of how few antenatal care visits can negatively impact pregnancy outcomes. The historical shift from the FANC model¹⁴ to the BANC approach¹⁵ and then BANC PLUS approach⁶ emphasizes the evidence for the pregnant mother's quality care at each clinic visit. Participants' concerns regarding multiple clinic visits suggest the need to educate patients on the purpose of antenatal care visits, frequency of antenatal care attendance, and their intended outcomes as an ongoing program. This strategy could empower patients to make better-informed decisions.

5.3.3 Socio-economic factors

Half of the participants expressed not having permanent addresses as their primary deterrent to starting antenatal care. This result confirms the influence of social determinants of health. It also provides some insight into the gross inequality in the health status of the people, particularly between developed and developing countries, as narrated in the Alma-Ata declaration.⁵⁰ The research finding of participants being unable to start timely ANC due to migration and not having permanent addresses was consistent with the study done in Italy,⁵¹ which demonstrated that women of higher social standards or those with established healthy living conditions

are more aware of good health practices during pregnancy. Fear of losing jobs and participants verbalizing that they have no clinic time highlights the need to engage and sensitize other community stakeholders, such as employers, on the importance of proper quality antenatal care and be reminded on the fundamental right for quality antenatal care for the pregnant mother. In addition, having half of the participants fear losing their jobs, reflects how the state of the economy affects all spheres of the life of pregnant women (physical, financial, emotional, and social well-being).

5.4 SUGGESTIONS FROM THE PARTICIPANTS

5.4.1 Staff mental assessment and training

The attitudes and behaviours of maternal healthcare providers are essential for a positive or negative pregnancy experience.²² Over half of the participants agreed that health workers' behaviour and bad attitude would likely delay timely booking. Suggestions for psychological evaluation and mental health training of maternal healthcare professionals may not be not unique to this survey. In 2016, the "CLEVER" study was conducted in Tshwane District. The "CLEVER" package is a multi-component intervention to change the complex interplay between preventable maternal and perinatal mortality, morbidity, and poor clinical governance.⁴² Results showed that the CLEVER package improved perinatal mortality and morbidity rates in Midwife Obstetric Units (MOU).⁴³ The good outcomes were attributed to supportive supervision, coaching during handovers, and capacity building which ensured improved clinical performance and reduced risk in the labour ward.⁴² It could be extrapolated from the CLEVER package intervention that barriers to staff performance could be obviated and best practices enhanced with targeted and continuous staff training and support.

5.4.2 Lack of information

Although some participants verbalized that they were turned away and told it was too early to book, it may seem like a minor issue. This finding agrees with the study done by Solarin and Black²⁸ in the Inner-City of Johannesburg, which showed that 19.2% of women were told they were too early to book and should come back a month later, resulting in a three-month delay in being booked for antenatal care. The NDoH maternal health guidelines states that antenatal care should begin at a woman's first visit to the clinic, even if the first visit were to confirm a pregnancy.¹ Patients also verbalizing that they thought pregnancy should be kept secret

and not consulted in the first four months of pregnancy emphasizes the place for health education information that addresses cultural beliefs and practices.

5.4.3 Extension of services

Some services in the Ebony Park CHC, such as primary health care, mid-wife obstetric unit care, and emergency care, are rendered 24 hours, seven days a week, unlike antenatal care services, provided only during office hours. With the high prevalence of late bookings, and clinic operational hours being a significant mitigating factor, Ebony Park clinic management could consider an extension of ANC services.

5.5 LIMITATIONS OF THE STUDY

The survey was conducted in one of the CHCs in Tembisa, an urban migrant population. The results might have limited application to the rest of the province. A different picture might be obtained if the survey is conducted in rural areas where the unemployment rate is high, and the distance travelled to clinics is outside a walking distance radius. A non-probability sampling method, convenience sampling, was used to attain a desired number of participants. As a results, the research findings night not be generalizable

The objectives of the study were to ascertain the demographics of women attending antenatal care at Tembisa clinics who book late. To determine factors for late antenatal booking amongst women attending antenatal care in Tembisa clinics and to describe and rank the factors for late antenatal booking amongst women attending antenatal care in Tembisa clinics.

The socio-demographic factors of maternal age, marital status, level of education, distance travelled, household income, and parity did not show any relevance for late antenatal care booking. Decisive factors for late antenatal care booking by participants were negative experiences from the healthcare workers' behaviour and attitude, operational management, and socio-economic factors.

Staff empowerment should be prioritised, including mental health awareness, evaluation, and training that prepares them to be cognizant of pregnancy and its socio-economic and relational dynamics. The need for staff to become more supportive of pregnant women is paramount and should be emphasised. Health is physical, mental, emotional, social, and spiritual well-being.¹ This holistic approach is crucial in pregnancy, and healthcare workers must be attentive.

Extending clinic operating hours for maternal health services could make this service more accessible to the population it serves.

Health education that communicates accurate, uniform, and consistent information from staff to patients must be strengthened. Health education information should recognise and address cultural beliefs to enhance healthy pregnancy outcomes.

CHAPTER SEVEN RECOMMENDATIONS

Staff empowerment in maternal health care should be more reflexive and not only technical and knowledge-based. This integrated approach could provide healthcare workers with psychosocial knowledge and skills.

Staff wellness services should be accessible to staff, and staff should be informed of the scope of its services. On-going debriefing of staff working under challenging circumstances, such as mid-wife obstetric unit and antenatal services, could create a platform for prevention, early recognition, and management of mental health conditions.

Clinic operational management could benchmark and adopt best practices to make ANC services accessible to its population..

Health education provided by healthcare workers should aim for accurate, uniform, and consistent information. In addition, billboards and message conveyor systems, community health workers' outreach services, and community forums could effectively transmit health messages.

Extending clinic operating hours for maternal health services could make this service more accessible to the population it serves.

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QUESTIONNAIRE

This study is titled "Factors contributing to late antenatal booking amongst women attending Tembisa clinics, Gauteng Province, South Africa."

The purpose of the study is to determine the factors that contribute to late first antenatal care visits amongst women attending antenatal care at Tembisa Clinics. It is a quantitative study that contains factors contributing to late antenatal care that were identified in previous studies.^{8-11,17,22-32,39,41}

Using a 4-point Likert scale, the participants would be required to indicate their order of importance for each factor where 4 is the most important and 1 is the least important. Should participants identify other factors which do not appear on the tabulated list, they are encouraged to fill them in using the space provided.

It would be appreciated if you can go through pages one to five of this questionnaire.

SECTION A: PATIENT DEMOGRAPHIC INFORMATION

Please fill in each box of information with a tick (✓) in the appropriate space provided or the appropriate response

1. Age in years	
------------------------	--

2. Marital Status	
Single	
Married	
Widowed	
Divorced	
Co-habitation	
Separated	

3. Level of education completed	
Primary	
High school	
Tertiary	
None	

4. What is the distance from home to the clinic?	
Walking distance	
One taxi	
One bus	
Two taxis	
Two buses	
Own car	
Others indicate:	

5. What is your occupation?	
Unemployed	
Self-employed	
Employed	
Piece jobs	
Others indicate:	

6. Total number of pregnancies	
One	
Two	
Three	
Four	
Five or more	

7. Gestational age at first visit	

8. Average monthly household income	
High (Above R25000)	
Middle (Between R10000-R25000)	
Low (Below R10000)	

SECTION B: FACTORS INFLUENCING TIMING OF ANTENATAL(ANC) CARE BOOKING

Here are factors contributing to late antenatal booking which has been identified from previous studies. Based on your experiences, personal values, and preferences please indicate how important these factors are in influencing your time of first antenatal booking. Rate these factors with a tick (✓) according to the order of importance for you, for example;

If the statement is not that important to influence your decision to seek antenatal care you can tick (✓) number 3, if the statement is very important you tick (✓) number 4 however if one does not know what the statement means you tick (✓) number 1 and if one prefers not to answer you tick (✓) number 2

- 1- Don't know**
- 2- Prefer not to say**
- 3- Not important**
- 4- Very important**

9. Relating to operational management of clinics	1	2	3	4
I waited in a long queue to be seen by a doctor or nurse				
We have to come to the clinic too many times				
Services we get in clinics are poor				
Other reasons:				

10. Relating to personal issues	1	2	3	4
I am not sure if I want to keep the baby				
I am avoiding testing for HIV				
I did not see or feel any pregnancy symptoms				
I was afraid my partner will leave me				

I was scared of my parents' reaction				
Other reasons:				

11. Relating to socio-economic status	1	2	3	4
I have no money for transport				
I do not want to lose my job				
I work from morning to evening, no time for clinic				
I do not have a permanent residential address				
Other reasons:				

12. Relating to cultural values	1	2	3	4
A woman should not travel during pregnancy				
A pregnant woman must not eat certain foods such as "oranges because it causes yellow eyes"				
A pregnant woman must eat certain foods such as leaves from trees because they contain vitamins				
The husband or partner decides whether a woman should go to the clinic or not				
The last born child must be delivered at home				

13. Relating to religious beliefs	1	2	3	4
I Believe that prayer may heal everything				
A pregnant woman should not be touched by a male doctor or nurse				

14. Relating to ANC services	1	2	3	4
Do you think it is important:				
To Attend antenatal care clinic				
To be taught about breastfeeding and formula feeding while pregnant				
To be taught about family planning while pregnant				
To be tested for HIV when pregnant				
To visit the clinic more than four times when pregnant				

15. Health care “professionals” behavior and attitude	1	2	3	4
Nurses might hit you				
Nurses might shout or scream at you				
People will know why you are in the clinic				
Fear of being stigmatized because I have HIV				
Fear to be humiliated by health care workers				

Please list other factors not mentioned above, that are important to you as a patient, that prevents you from attending antenatal care visit early (before five months of pregnancy). Please rate each one of them where 4 is the most important and 1 is the least important.

INFORMATION TO PARTICIPANTS & CONSENT

Study title: A study on factors associated with late antenatal booking amongst women attending Tembisa clinics, Gauteng Province, South Africa

Principal Investigator: Dr. SP Mlambo

Supervisor: Dr. O J Ibeziako

Institution: University of Pretoria

Daytime telephone number: 0847576902

DATE AND TIME OF INFORMED CONSENT DISCUSSION:

dd	Month	year

:
Time

Dear Prospective Research Participant,

1) INTRODUCTION

You are invited to volunteer for a research study. I am doing this research as part of the fulfillment of the Family Medicine University of Pretoria specialization degree. The information in this document is provided to help you to decide if you would like to participate. Before you agree to take part in this study, you should fully understand what is involved. If you have any questions which are not fully explained in this document, do not hesitate to ask the researcher. You should not agree to take part unless you are completely happy with the kind of questions that will be asked.

2) THE NATURE AND PURPOSE OF THIS STUDY

This study aims to determine factors associated with late antenatal booking amongst pregnant women attending antenatal care in Tembisa clinics by doing so the results obtained from the study would add to the body of knowledge that could improve maternal and infant morbidity and mortality. Further, results obtained could offer information content that matters to patients regarding health education, prevention, and promotion for women of childbearing age.

3) EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM PARTICIPANTS

This study involves answering some questions regarding your personal experiences, values, and preferences. We would like you to complete a questionnaire. It will take approximately 5 minutes. We will collect the questionnaire from you before you leave the clinic. We will be available to help you with the questionnaire. The researcher will keep the completed questionnaires in a safe place to make sure that only people working on the study will have access to it. Please do not write your name on the questionnaire. This will ensure that your answers are kept confidential (so nobody will know what you have answered).

The questionnaire will be drafted in English language and will have three sections.

Section A: will be on the participant's demographic information which involves answering some questions about your age, marital status, where you live, etc.

Section B: will be a Likert scale type of question meaning that a scale from 1-4 will be used to represent people's attitudes to a topic on the factors which were identified in the literature review causing a delay in seeking ANC.

Section C: will be participants' views on what could be done to encourage early ANC booking.

4) RISK AND DISCOMFORT INVOLVED

There is no foreseeable physical discomfort but the emotional risk may be posed by some of the questions. In such cases where the questions seem to be too sensitive for you to respond to such as HIV status and partner relationship, you are not obliged to do so. Also, the researcher can refer you for counseling if these questions upset you.

5) POSSIBLE BENEFITS OF THIS STUDY

The benefit of this research is that you will be helping to identify which factors are the most important contributors to delaying early attendance of antenatal care. Those factors will then be integrated into health promotion and prevention. This would contribute to ensuring a good outcome for the mother and the baby.

6) ETHICS APPROVAL

This Protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, Medical Campus, Tswelopele Building, Level 4-59, Telephone numbers 012 356 3084 / 012 356 3085, and written approval has been granted by that committee. The study has been structured per the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding doctors in biomedical research involving humans. A copy of the Declaration may be obtained from the investigator should you wish to review it.

7) INFORMATION

If you have any questions concerning this study, you may contact: Dr. SP Mlambo at 0847576902 email leanoluciano@gmail.com (Primary investigator), or the Secretary of FHS REC at 0123563084 or 0123563085

8) CONFIDENTIALITY

All records from this study will be regarded as confidential. All results will be published or presented in such a way that it is not possible to identify the participants.

9) COMPENSATION

You will not be paid to take part in the study. There are no costs involved for you to be part of the study.

10) CONSENT TO PARTICIPATE IN THIS STUDY

- I confirm that the person requesting my consent to take part in this study has told me about the nature and process, any risks or discomforts, and the benefits of the study.
- I have also received, read, and understood the above-written information about the study.
- I have had adequate time to ask questions and I have no objections to participating in this study.
- I am aware that the information obtained in the study, including personal details, will be anonymously processed and presented in the reporting of results.
- I understand that I will not be penalized in any way should I wish to discontinue the study and my withdrawal will not affect my employment or student status.
- I am participating willingly.
- I have received a signed copy of this informed consent agreement.

Participant's name (Please print)

Date

Participant's signature

Date

Researcher's name (Please print)

Date

Researcher's signature

Date

AFFIRMATION OF INFORMED CONSENT BY AN ILLITERATE PARTICIPANT

I, the undersigned, _____ have read and have explained fully to the participant, named _____, the participant informed consent document, which describes the nature and purpose of the study in which I have asked the participant to participate. The explanation I have given has mentioned both the possible risks and benefits of the study. The participant indicated that she understands that she will be free to withdraw from the study at any time for any reason and without jeopardizing her standard care.

I hereby certify that the participant has agreed to participate in this study.

Participant's name (Please print)

Date

Participant's Signature or Mark

Date

Investigator's Name (Please print)

Date

Investigator's Signature

Date

Name of the person who witnessed the
informed consent(Please print)

Date

Signature of the Witness

Date

STUDY TITLE: A study on factors associated with late antenatal booking amongst women attending Tembisa clinics, Gauteng Province, South Africa

Principal Investigator: Dr. SP Mlambo

Supervisor: Dr O J Ibeziako

Institution: University of Pretoria

Daytime telephone number: 0847576902

DATE AND TIME OF INFORMED CONSENT DISCUSSION:

13	04	2022
dd	Month	year

09: 15
Time

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Page 2 of 6

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- I am aware that the information obtained in the study, including personal details, will be anonymously processed and presented in the reporting of results.
- I understand that I will not be penalized in any way should I wish to discontinue the study and my withdrawal will not affect my employment or student status.
- I am participating willingly.
- I have received a signed copy of this informed consent agreement.

Participant's name (Please print)

Participant's signature

Date

13 04 2022

Date

STUDY IDENTIFICATION NUMBER	136
PARTICIPANT IDENTIFICATION NUMBER	

PERMISSION & APPROVAL LETTERS



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences

Faculty of Health Sciences

Department Internal Medicine
Kalafong Hospital
Klinikala Building 2-1
Tel 27-12-373 1075
e-mail: danie.vanzyl@up.ac.za

LETTER OF MMed COMMITTEE APPROVAL

This letter is to confirm that the protocol of student, **Dr S Mlambo**, titled **“A survey on factors associated with late antenatal booking amongst pregnant women attending Tembisa clinics, Gauteng Province, South Africa”** has served at the MMed Committee and was found to be academically acceptable.

Prof DG van Zyl 
Chairman: MMed Protocol Committee

Date: 8/31/2021

Please Note that you may now apply to the Ethics Committee for approval.
See http://www.up.ac.za/academic/healthsciences_old/ethics/ for requirements.



EKURHULENI HEALTH DISTRICT RESEARCH PERMISSION

Research Project Title: A Survey on factors associated with late antenatal booking amongst pregnant women attending Tembisa clinics, Gauteng Province, South Africa

NHRD No: GP_202110_010

Research Project Number: 05/11/2021-03

Name of Researcher(s): Dr Siphesihle Mlambo

Division/Institution/Company: University of Pretoria

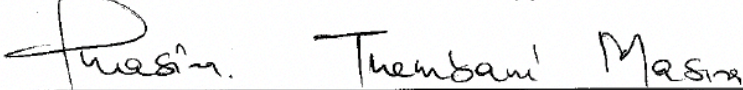
Date of review by the EHDRC: 05 November 2021

DECISION TAKEN BY THE EKURHULENI HEALTH DISTRICT RESEARCH COMMITTEE (EHDRC)

- This document certifies that the above research project has been reviewed by the EHDRC and permission is granted for the researcher(s) to commence with the intended research project.
- Facilities approved for the research: All Ekurhuleni District clinics.
- Participants' rights and confidentiality must be maintained throughout the study period and when disseminating the findings.
- No resources (financial, material and human resources) from the health facilities will be used for the study. Neither the district nor the health facilities will incur any additional cost for the study.
- The study will comply with Publicly Financed Research and Development Act 2008 (Act 51 of 2008) and its related regulations.

Title: A Survey on factors associated with late antenatal booking amongst pregnant women attending Tembisa clinics, Gauteng Province, South Africa

- The EHDRC must be informed in writing before publication or presentation of research findings and a copy of the report/publications/presentation must be submitted to the EHDRC
- The district must be acknowledged in all the reports/publications generated from the research.
- The researcher will be expected to provide the EHDRC with
 - Six monthly progress updates including any adverse events
 - The final study report in electronic format
 - Present the final research findings at the annual Ekurhuleni research conference if possible.
- The EDHRC reserves the right to withdraw the approval, if any of the conditions mentioned above have being breached
- The research committee wishes the researcher(s) the best of success.


DEPUTY CHAIRPERSON: CITY OF EKURHULENI

Dated: 08/11/2021

CHAIRPERSON: GAUTENG DEPARTMENT OF HEALTH (EKURHULENI HEALTH DISTRICT)

Dated:



Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 22 May 2002 and Expires 03/20/2022.
- IORG #: IORG0001762 OMB No. 0990-0279 Approved for use through February 28, 2022 and Expires: 03/04/2023.

Faculty of Health Sciences Research Ethics Committee

11 February 2022

Approval Certificate New Application

Dear Dr SP Mlambo

Ethics Reference No.: 613/2021

Title: A survey on factors associated with late antenatal booking amongst pregnant women attending Tembisa clinics, Gauteng Province, South Africa

The **New Application** as supported by documents received between 2021-12-01 and 2022-02-09 for your research, was approved by the Faculty of Health Sciences Research Ethics Committee on 2022-02-09 as resolved by its quorate meeting.

Please note the following about your ethics approval:

- Ethics Approval is valid for 1 year and needs to be renewed annually by 2023-02-11.
- Please remember to use your protocol number (613/2021) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, monitor the conduct of your research, or suspend or withdraw ethics approval.

Ethics approval is subject to the following:

- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

On behalf of the FHS REC, Dr R Sommers

MBChB, MMed (Int), MPharmMed, PhD

Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

¹The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)