

**UTILIZATION OF ANTENATAL CARE (ANC) AND PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV (PMTCT) SERVICES IN EAST EKURHULENI SUB-DISTRICT, GAUTENG PROVINCE, SOUTH AFRICA.**

by

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Submitted in accordance with the requirements  
for the degree of

**MASTER OF PUBLIC HEALTH**

Department of Health Studies

at the

University of South Africa

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February 2012

## **DEDICATION**

This study is dedicated to my sweetheart, my lover, my man, my husband Trevor Chengeno Sambara Tshabalala. Your unconditional love, encouragement, patience and perseverance have contributed to my successes. You are my source of energy and wisdom; you have been my inspiration in my life.

**Student number: 43377017**

**DECLARATION**

I declare that a study titled **“UTILIZATION OF ANTENATAL CARE (ANC) AND PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV (PMTCT) SERVICES IN EAST EKURHULENI SUB-DISTRICT, GAUTENG PROVINCE, SOUTH AFRICA”** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution



**Maureen Fatsani Tshabalala (Mrs)**

**Date: 01<sup>st</sup> February 2012**

## **ACKNOWLEDGEMENTS**

I would like to express my sincere thanks to the following people and organisations for their support and respective contributions during the period of this study.

A special thank you goes to my supervisor, Dr M Mokgatlhe-Nthabu, for her endless guidance, support and encouragement. Your contribution is greatly appreciated.

Thanks to my dear husband Trevor, for his unconditional love, support and encouragement.

Thanks to my two children, Trevor Junior and Astrida Rachel, for their support, love, patience and understanding.

Thanks to my friends, Joyce Mphaya, Emmanuel Anyachebelu and Marriam Mangochi for their unconditional support and words of encouragement. Special recognition goes to Fadzai Chikwava and Adonia Simango for their support during data entry and analysis of the results.

Thanks to my field workers, Mpho Makhubo and Nhlanhla Masomane for your dedication and hard work.

Thanks to the management of Ekurhuleni district for giving me permission to conduct the study.

Thanks to the staff of all the six facilities and all the pregnant women who were part of this study.

The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) provided tuition fees for the entire programme and I am grateful.

Above all, I would like to thank His Majesty, the ALMIGHTY GOD for his undying love, grace and mercy upon my life.

**UTILIZATION OF ANTENATAL CARE SERVICES FOCUSING ON PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV (PMTCT) SERVICES IN EAST EKURHULENI SUB-DISTRICT, GAUTENG PROVINCE, SOUTH AFRICA.**

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**ABSTRACT**

This study sought to determine if ANC and PMTCT services are utilized within the first trimester of pregnancy by the women in East Ekurhuleni sub-district.

Quantitative descriptive research was conducted on 390 eligible pregnant women and data collection was done using structured questionnaires. The results indicated that women start ANC late despite their knowledge of first trimester as the best time to start ANC. Actions that would motivate them to start ANC early were explored and barriers were identified.

**Key terms:**

ANC; PMTCT; pregnant women; first trimester; actions for motivation; awareness and barriers to services; perceptions on HCW; mother-to-child transmission.

## **ABBREVIATIONS**

ANC	Antenatal Care
ART	Antiretroviral Therapy
ARV	Antiretroviral
BANC	Basic Antenatal Care
CHC	Community Health Centre
CI	Confidence Interval
DHIS	District Health Information Systems
DOH	Department of Health
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
EPI	Expanded Program on Immunisation
HBM	Health Belief Model
HCT	HIV Counselling and Testing
HCW	Health Care Worker
HIC	High Income Countries
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
KZN	Kwa-Zulu Natal
LIC	Low Income Countries
MCWH	Maternal, Child and Women's' Health
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
MTCT	Mother-to-child Transmission of HIV
MTCT	Mother-to-Child Transmission of HIV
NGO	Non-Governmental Organisation
NIMART	Nurse Initiated Management of Antiretroviral Therapy
NSP	National Strategic Plan
PCR	Polymerase Chain Reaction
PLWHA	People Living with HIV and AIDS
PMTCT	Prevention of Mother-to-child Transmission of HIV
S&RH	Sexual and Reproductive Health

SA	South Africa
SAG	South African Government
SANAC	South African National AIDS Council
STI	Sexually Transmitted Illnesses
TAC	Treatment Action Campaign
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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## **CHAPTER 1**

### **INTRODUCTION AND BACKGROUND INFORMATION**

#### **1.1. INTRODUCTION**

Antenatal care (ANC) refers to care before birth, and includes education, counselling, screening and treatment to monitor and promote the well-being of the mother and foetus (WHO 2003). Early utilization of ANC services is the cornerstone for the effective implementation of the Prevention of Mother-to-Child Transmission of HIV (PMTCT) programme. PMTCT is a programme to prevent HIV infection from a mother living with HIV to her child during pregnancy, labour, delivery or breastfeeding.

In South Africa, the Department of Health (DOH) introduced the PMTCT programme in 2001, where single dose nevirapine was given as antiretroviral (ARV) prophylaxis during labour. In 2008, the guidelines were amended based on global guidance from World Health Organization (WHO). This resulted in the offering of dual therapy prophylaxis at 28 weeks of gestation and those eligible for lifelong antiretroviral therapy (ART) were initiated at any stage of gestation (DOH 2008). However, new information on optimal timing for ARV prophylaxis emerged and in November 2009 WHO issued another set of PMTCT guidelines globally. South Africa eventually adopted and implemented these guidelines from March 2010 in all facilities offering PMTCT services (DOH 2009). The new guidelines recommend that women living with HIV should be initiated on ARV prophylaxis at 14 weeks of gestation and must be fast tracked if they are eligible for ART. This guidance requires early antenatal booking.

This study, therefore, investigated the utilization of ANC and PMTCT services in East Ekurhuleni sub-district, Gauteng province, South Africa. A descriptive survey using a quantitative approach was used to collect information from pregnant women to find out whether the new PMTCT guidelines are feasible in this setting.

## **1.2. BACKGROUND INFORMATION**

### **1.2.1. Antenatal Care Services Globally**

Provision of early ANC is regarded as the cornerstone for improving maternal and perinatal outcomes; and it includes improving women's knowledge on PMTCT services. The WHO recommends a minimum of four antenatal visits, which ideally should be initiated the first 12 weeks of gestation (UNAIDS 2008). This recommendation is based on a review of the effectiveness of different models of ANC. The recommended care includes: blood pressure measurement, urine testing for bacteriuria and proteinuria; blood testing to detect syphilis and anaemia; weight/height measurement (optional), and also HIV counselling and testing (HCT) which was included at a later stage (UNAIDS 2008). Globally 70% of women access ANC at least once in pregnancy, thus making it an opportunity to provide a broad range of health activities (WHO 2003).

Average regional ANC access ranges from a low of 70% in South Asia, to a high of 95% in Central and Eastern Europe/Commonwealth of Independent States (CEE/CIS) and Latin America and the Caribbean. Coverage is also high in East Asia and the Pacific, where 90% of pregnant women receive care from a skilled provider at least once (UNICEF 2009).

A study conducted in Brazil in 2004 on socio-economic and ethnic group inequities in ANC quality in the public and private sector revealed that 98% of the 4, 244 women studied attended ANC (mean number of visits 8.3). However, the number of consultations was higher among better-off and white women, who were also more likely to start ANC in the first trimester (Victora, Matijasevich, Silveira, Santos, Barros & Barros<sup>2</sup> 2004).

ANC is common across low income countries. According to the latest estimates, 79% of women in low income countries receive ANC from a skilled health provider at least once during pregnancy, and 45% have attended four times (UNICEF 2009). Although ANC is something most people in the high income countries take for granted; many in low income countries have challenges like social and economic factors, and the lack of accessible facilities. This means that for many women, ANC is seen as too difficult or

expensive to access. In Nigeria, a study conducted in Lagos identified that only 27% of women booked before 14 weeks of gestation (Adegbola 2006).

The Future Health Systems Research Program Consortium (RPC) conducted a qualitative study in Uganda in 2009 where 62% of women had four ANC visits. The main factors that affected uptake and utilization of ANC services were transport costs, informal fees, demands for requirements such as gloves, fear of being tested for HIV and the poor attitude of the providers (Uganda Daily Monitor 2009). These findings were similar to Kenya's Western Nyanza province (Linda 2010).

### **1.2.2 Antenatal Care Services in South Africa**

The South African basic antenatal care (BANC) guidelines stipulate five visits with the first visit occurring in the first 12 weeks. Follow-up visits are then required at 20, 26, 32 and 38 weeks respectively (DOH 2005). The first visit includes HCT, and if the mother is a high-risk case, the visits would be increased accordingly. Although the guidelines stipulate this, women in South Africa generally start ANC very late.

In South Africa, the saving mothers' report of 2002-2004 indicated that 18.1% of the women who died did not have ANC, and 26.8% delayed in seeking care (DOH 2007). However, according to a South African study by the Human Sciences Research Council (HSRC 2008), 97% of pregnant women have had access to ANC during their pregnancies, with 71.4% receiving antenatal services five times during their pregnancy. It was further documented that during labour, the majority of mothers have had access to a trained birth attendant (Khumalo 2010). Despite these good results; it should be noted that the majority of these women accessed ANC services in late pregnancy. It is worth mentioning that 42.5% of all maternal deaths in South Africa are AIDS related because of the high HIV prevalence rate (DOH 2009).

In a qualitative study conducted in Hlabisa district in Kwa-Zulu Natal (KZN) Province, the findings indicated that most women in this setting do not perceive significant health threats during pregnancy, and in turn, view more than one ANC visit as unnecessary (Myer & Harrison 2003). In contrast, women perceive labour and delivery as a time of significant health risks that require biomedical attention. Furthermore, most women's

primary reason for seeking ANC was to receive an ANC attendance card that is required to deliver at a health facility (Myer *et al.* 2003).

According to the DOH annual report of 2009/10, only 164 of the 549 identified maternity facilities implemented the BANC programme to improve ANC (DOH 2010). In spite of free access to health care services, very few women attend clinics during their first trimester of pregnancy (1-13 weeks or 1-3 months). According to the district health information system (DHIS), less than 30% of the women attended ANC services before 20 weeks of gestation in 2009 (DOH 2009) and similar results were documented in 2010 nationally (DOH 2010).

### **1.2.3 Prevention of Mother to Child Transmission of HIV Programme in South Africa**

There are over one million babies born in South Africa every year with an estimated 300,000 of these babies exposed to HIV. A comprehensive PMTCT intervention has the capacity to reduce the proportion of neonatal infections to less than 5% (DOH 2009). According to the 21<sup>st</sup> antenatal women HIV and syphilis sero-prevalence survey, the national HIV sero-prevalence is 30.2% (DOH 2011). As of March 2009, mother-to-child transmission (MTCT) proportions varied widely across the country, averaging at 12% nationally. However, some districts reported MTCT proportions of above 20% (DOH 2009). This was higher than the transmission proportion of less than 5% expected from a well-functioning PMTCT programme and the target in the National Strategic Plan (NSP) for HIV and AIDS and Sexually Transmitted Illnesses (STI) 2007-2011 (DOH 2007). Despite the fact that the PMTCT programme was initiated in 2001, it had not delivered according to expectations and there is need for improvement. As stipulated in the introduction, the successful implementation of the current guidelines depends on early antenatal booking.

It is anticipated that a significant number of HIV exposed babies who eventually test HIV positive with the Polymerase Chain Reaction (PCR) test at six weeks of age, are likely to be children born to mothers who did not receive adequate ARV prophylaxis due to late ANC booking. Furthermore, babies born at home to mothers living with HIV are probably more likely to have not received any PMTCT services. A complete lack of or

the late initiation of PMTCT prophylaxis to mother and child has serious implications for maternal and child mortality proportions.

Starting ANC early is imperative for the successful implementation of PMTCT programme. Besides reducing infant mortality in the context of a generalized HIV epidemic, a PMTCT programme also provides an entry point for strengthening health systems to improve maternal and child health outcomes. If successfully implemented, a national PMTCT programme would assist South Africa to meet the health-related Millennium Development Goals (MDG) 4, 5 and 6. Thus, MDG 4 focuses on reduction of child mortality, MDG 5 focuses on improving maternal health and MDG 6 focuses on combating HIV/AIDS, malaria and other diseases (UNAIDS 2008).

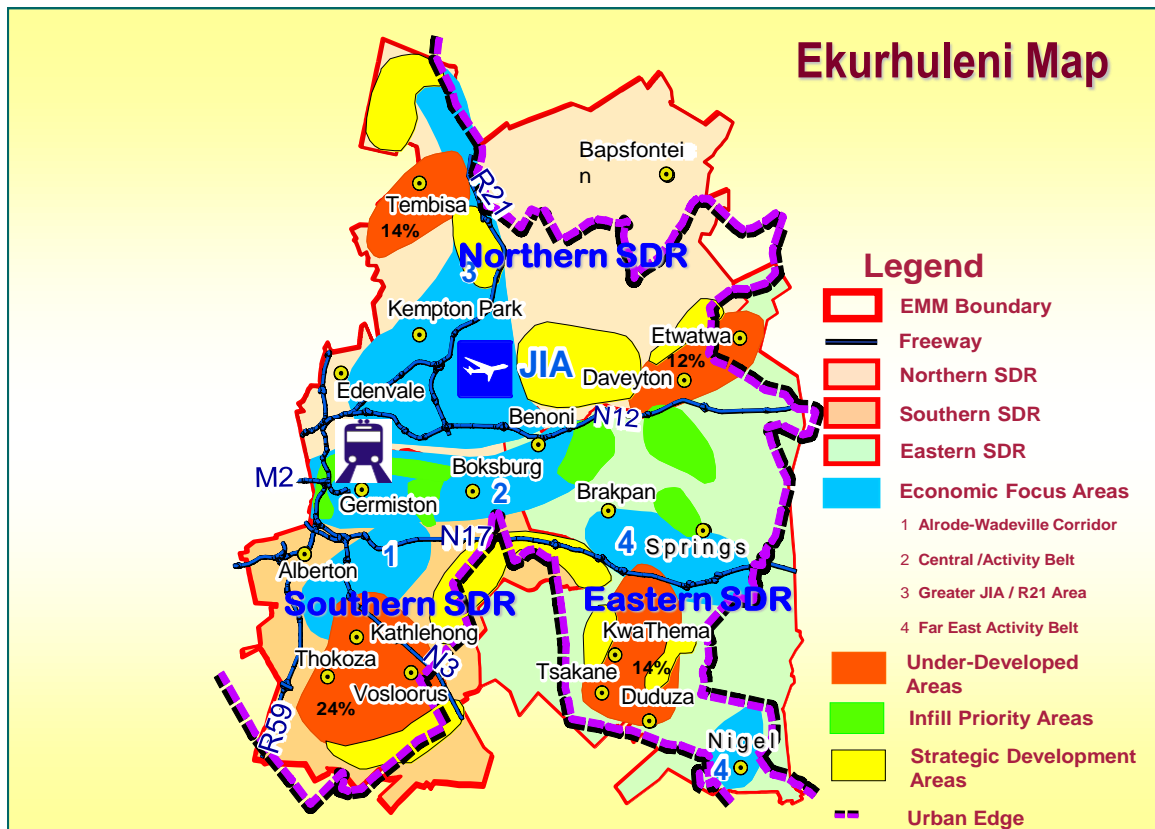
#### **1.2.4 Prevention of Mother to Child Transmission of HIV Situation in Ekurhuleni**

Ekurhuleni district is one of the six districts in Gauteng province. It has three sub-districts namely; East, South and North. The HIV sero-prevalence rate for pregnant women in the province is 30.4%, with Ekurhuleni district leading with 33.8% (DOH 2011). The 2010 PMTCT uptake in this district was 87%, of which 84% accessed ARV prophylaxis during pregnancy, but mostly in late gestation. In spite of this, the MTCT rate was 13% despite the national target of less than 5% (DOH 2010; EGPAF 2010). According to DHIS, only 47% of the women attended ANC before 20 weeks gestation in 2010 in East Ekurhuleni sub – district, of which the majority were beyond 12 weeks of gestation. It is against this background that the researcher proposed a study to investigate the utilization of ANC and PMTCT services in this sub-district.

#### **1.2.5 Study Setting**

Ekurhuleni is an urban and semi-urban district in Gauteng province. It has an unemployment rate of 40%, and a population of 2 530 207 people, of which 861 717 are in the Eastern sub-district (SA Census 2001). The population consists of 76% blacks, 3% coloured, 2% Indian/Asian and 19% whites. The study was conducted in East Ekurhuleni sub-district, which consists of the following towns: Benoni, Brakpan, Springs and Nigel. This sub-district has two hospitals, three community health centres, 29 fixed clinics and five mobile clinics. Six clinics with a high number of ANC attendees were

chosen; two clinics were chosen in Benoni because they cater for 45% of the Eastern population and one clinic in the remaining towns and one clinic in Tsakane Township. Thus Benoni: Daveyton main clinic and Phillip Moyo Community Health Centre (CHC); Brakpan: First Avenue clinic; Springs: Kwa Thema CHC; Nigel: Nokuthela Ngwenya CHC and Tsakane township: Tsakane clinic (see figure 1.1 below)



**Figure 1.1: Map of Ekurhuleni District**

*Adopted from Ekurhuleni Health District Office, Gauteng, 2011*

### 1.3. PROBLEM STATEMENT

Although the HSRC study findings in 2008 recorded that 97% of women access ANC services during their pregnancies, this is usually in late gestation. There was need to identify strategies that would encourage pregnant women to utilize ANC services early to effectively implement current PMTCT guidelines which stipulate ARV prophylaxis from 14 weeks of gestation and early initiation of long life ART. In addition, BANC recommends pregnant women to start ANC at 12 weeks of gestation which is in line with the current recommendation for PMTCT.

In South Africa women commence antenatal care late, a problem common in Ekurhuleni district. In 2010 53% of pregnant women utilised ANC services when they were beyond 20 weeks of gestation and the MTCT proportion in this district was 13%.

Furthermore, little information exists on strategies that would motivate pregnant women to utilize ANC services at the recommended time. Although the new PMTCT guidelines were adopted and implemented, there is limited information on its feasibility. There was need to generate information about pregnant women's awareness of ANC and PMTCT services. Therefore, information from the pregnant women would provide guidance to improve the PMTCT programme in the country.

It is against this background that the researcher proposed a study to investigate the utilization of ANC and PMTCT services in the East Ekurhuleni sub-district in South Africa. The results of this study would assist in ANC and PMTCT programmes' improvement in Ekurhuleni district.

## **1.4 AIMS OF THE STUDY**

### **1.4.1 Purpose of the Study**

The purpose of this study was to determine if ANC and PMTCT services were utilized within the first trimester of pregnancy by the women in East Ekurhuleni sub-district in Gauteng province, South Africa. The study also explored factors that would motivate women to start ANC within the first trimester of pregnancy and furthermore, how issues of knowledge or awareness affected their decision to utilize ANC and PMTCT services. The purpose of this study was in line with BANC and PMTCT guidelines which recommend that ANC should commence in the first trimester of pregnancy.



### **1.4.2 Research Question**

This study aimed at answering the following question:

- In line with BANC and PMTCT guideline; were ANC and PMTCT services utilized within the first trimester of pregnancy by the women in East Ekurhuleni sub-district in South Africa?

### **1.4.3 Objectives of the Study**

The research objectives guiding this study, aimed to:

- Determine factors that motivated pregnant women to utilize ANC and PMTCT services within the first trimester of pregnancy.
- Generate information about pregnant women's awareness of ANC and PMTCT services.
- Identify possible barriers to early utilization of ANC and PMTCT services in the chosen sub-district.

The research question and objectives will be answered in relation to the Health Belief Model's (HBM's) concepts of individual perceptions of susceptibility, perceived benefits, perceived barriers and cues to action (RECAP 2005:2). The HBM will be discussed in chapter 2.

## **1.5 SIGNIFICANCE OF THE STUDY**

This study determined whether ANC and PMTCT services were being utilized within the first trimester of pregnancy in this sub-district. It also determined actions that would promote early utilization of ANC and PMTCT services. Success to effective PMTCT services is dependent on an effective ANC system where women utilize services as early as possible. Rolling out of the new PMTCT guidelines was based on the assumption that pregnant women would utilize ANC services by at least 14 weeks. Therefore the study was important for the following reasons:

- Programme managers and implementers would gain knowledge on how to successfully develop strategies to promote early utilization of ANC and PMTCT services.
- Findings from this study would also assist the Health Care Workers (HCW) to improve service provision to pregnant women within their facilities and at community level.
- It would also provide information to policy makers on feasibility of the implementation of the new PMTCT guidelines in South Africa.
- The insights that emerged from this study would be used to make recommendations that could be utilised to improve the ANC and PMTCT programmes.

## **1.6 ASSUMPTIONS**

Assumptions are statements taken for granted or considered true, even though they have not been scientifically tested (Burns & Grove 2005: 728). This study was based on the assumption that pregnant women do not understand the need to start ANC at the recommended time of 12 weeks which translates to women living with HIV accessing PMTCT services on time, thus ARV prophylaxis at 14 weeks of gestation.

## **1.7 DEFINITIONS OF TERMS USED IN THE RESEARCH REPORT**

**Antenatal Care (ANC):** means care before birth and includes education, counselling, screening and treatment to monitor and to promote the well-being of the mother and foetus (WHO 2003).

**Antiretroviral (ARV) Prophylaxis:** refers to drugs given to newly diagnosed pregnant women living with HIV and not yet eligible for lifelong ART to prevent them from transmitting the HIV virus to their child.

**Antiretroviral Therapy (ART):** consists of the combination of at least three antiretroviral (ARV) drugs to maximally suppress the HIV virus and stop the progression of HIV disease.

**Early ANC** refers to accessing ANC services during the first trimester of pregnancy thus 1-13 weeks' gestation or 1-3 months.

**HIV Counselling and Testing (HCT):** previously known as voluntary counselling and testing (VCT) is a process whereby an individual or a couple undergo counselling to enable them to make an informed choice about being tested for HIV.

**Infant Mortality Rate (IMR)** refers to the probability of dying between birth and exactly one year of age expressed per 1,000 live births (Joubert & Ehrlich 2007))

**Maternal Mortality Ratio (MMR)** refers to the number of women who die as a result of childbearing, during pregnancy or within 42 days of delivery or termination of pregnancy in one year, per 100 000 live births during that year (WHO 2010)

**Prevention of Mother-to-child Transmission of HIV (PMTCT):** is a programme to prevent HIV infection from an HIV-positive mother to her child during pregnancy, labour, delivery or breastfeeding.

**Utilization:** refers to use of the available services through knowledge that those services are available.

## 1.8 FOUNDATIONS OF THE STUDY

### 1.8.1 Theoretical Framework

The Health Belief Model (HBM) which was developed during the 1950s by Hochbaum, Rosenstock and Kegels formed the basis for this study. HBM is one of the most widely used conceptual frameworks for understanding health behaviour. The HBM is a psychological model that attempts to explain and predict health behaviours (ReCAPP 2005:2). It has been used to explore a variety of long and short term health behaviours,

including sexual risk behaviours and prevention of HIV, which includes PMTCT. This framework will be described in chapter 2.

## **1.9 RESEARCH DESIGN AND METHOD**

This was a health systems research and an observational descriptive and cross-sectional study design was employed because it allowed the researcher to collect data without introducing any new treatments or changes to the subjects (Polit & Beck 2008:175-178). The purpose was to describe situations and events (Babbie 2007:89).

A quantitative study paradigm was used which involved the systematic collection of numerical information, often under conditions of considerable control. The analysis of that information was done using statistical procedures (Polit & Beck 2008:24). The approach was chosen as it focused on a relatively small number of specific concepts. A full description of the design will be discussed in detail in chapter 3.

## **1.10 SCOPE AND LIMITATION OF THE STUDY**

This study was conducted in the six targeted fixed health facilities in East Ekurhuleni sub-district in Gauteng province. These facilities were purposively selected due to high number of ANC attendees. Each town had a minimum of one facility chosen. It was not possible for the researcher to conduct the study in all the 29 fixed clinics due to time and financial constraints. As a result, the results of this study cannot be generalised in the entire province or region. However, they could be locally generalised for the Eastern Ekurhuleni sub-district. Another limitation was the fact that the respondents were pregnant women and the subject matter included HIV which is a sensitive subject. Hence participants could have provided less detailed information.

## **1.11 STRUCTURE OF THE DISSERTATION**

This report consists of five chapters as explained below:

In chapter 1, the researcher has introduced the research topic. The introduction has given an overview of the research topic, has outlined the background of the research

and has introduced the setting where the study was conducted. It also includes the research statement, the aims of the study/purpose of the study, the research question and the objectives of the study. It also provides the significance of the study, the assumption, the definition of key concepts, brief description of the foundation, design and method as well as the limitations of this particular study.

Chapter 2 will describe the literature review undertaken. The researcher presents the literature that relates to the utilization of ANC and PMTCT services in other countries as well as South Africa.

Chapter 3 outlines the research methodology.

Chapter 4 presents the analysis of data according to the questions and items in the research questionnaire.

Chapter 5 discusses the results.

Chapter 6 concludes the report and provides recommendations based on the findings. It also captures the limitations on this particular study.

## **1.12 CONCLUSION**

This chapter has set a stage for the study. It is clear that ANC and PMTCT services should be accessed early to meet the recommendations from the guidelines in South Africa. It is also clear that HIV and AIDS is a public health challenge in the country and more especially the MTCT. Ensuring early access to ANC and PMTCT services will prevent MTCT and provide early recognition of any complications. Other ANC services will also be offered in time resulting in healthy mothers and babies.

The next chapter will discuss the literature review on the chosen topic and information will be from different countries as well as South Africa and Ekurhuleni as a district.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

A literature review is an organised written presentation of what has been published on a topic by scholars with the purpose of conveying to the reader what is currently known regarding the topic of interest (Burns & Grove:93). Cooper (1984) and Marshall and Rossman (2006) as cited by Creswell (2009:25), state that a literature review shares with the reader the results of other studies that are closely related to the current study and it relates the study to a larger on-going dialogue in the literature about a topic. The literature review also gives academic viewpoints regarding the topic under examination.

This chapter provides an outline of the literature reviewed for the purpose of deriving the propositions against which the study was undertaken and also provides a contextual background to the topic under discussion. The chapter therefore begins with the HBM as its conceptual framework of this study, followed by the section that provides insights into ANC and PMTCT services as it relates to the HBM assumptions and constructs which include HIV prevalence in South Africa, Gauteng province and Ekurhuleni district, the maternal and infant mortality situation in South Africa in comparison to other countries as well as Ekurhuleni district and then it explains the government response to the HIV epidemic especially on PMTCT programme. It also looks at the factors influencing ANC and PMTCT services utilization e.g. knowledge or awareness of ANC and PMTCT services, perceived benefits of accessing these services early, perceived barriers to accessing these services and accessibility and availability of these services. The main purpose of this chapter is to enhance the understanding of the results of related or similar studies.

#### **2.2 THE HEALTH BELIEF MODEL**

The HBM explains why people fail to practise recommended desirable health behaviour. The HBM explains that the probability that one will engage in a particular health undesirable behaviour is related to ones belief about the seriousness or severity of the potential illness. The HBM has been used to explore variety of long term and short term

health behaviours including sexual risk behaviours and prevention of HIV which includes PMTCT.

The HBM integrates psychological theories of goal setting, decision making and social learning and postulates that health seeking behaviour is influenced by a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat (ReCAPP 2005:2)

### **2.2.1 Assumptions of the Health Belief Model**

According to Campus (2005:1), the HBM is based on the three assumptions:

- It assumes that a person will take a health related action if that person feels that a negative health condition can be avoided.
- It also assumes that a person will take action if that person has a positive expectation that by taking a recommended action they will avoid a negative health condition.
- It further assumes that a person takes a health related action if the person believes that she can successfully take the recommended action.

There is a strong relationship between the above assumptions and this study whose required action is utilizing ANC and PMTCT services earlier in pregnancy. It is assumed that those who utilize ANC and PMTCT services earlier (i) feels that HIV transmission to their babies can be avoided (ii) believe that knowing their HIV status will be effective in preventing HIV infection to their unborn babies (iii) believe that by taking ARV prophylaxis they can prevent HIV infection to their babies and have health children.

The HBM has spelt out constructs representing the perceived threat, net benefits and cues to action. According to Campus (2005:1) these include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy.

### **2.2.1.1 Perceived Susceptibility**

This explains one's chances of getting a condition. A person's perception that a health problem is personally relevant will contribute to the taking of the required action by the individual. One requires understanding how the health problem or issue will affect them and that they should acknowledge that they are at risk of getting the problem. This requires that there should be activities that increase individual perception of their own vulnerability to a condition.

In this study, it was established that pregnant women perceived themselves and their unborn children at risk of contracting HIV infection. This has helped the researcher to establish whether pregnant women take action because they perceive their susceptibility. Hence, the researcher was able to develop strategies that strengthen that component.

### **2.2.1.2 Perceived Severity**

This is one's own opinion of how serious a condition is and what its consequences are. When one recognises that they are susceptible to getting a certain problem or condition, it does not really motivate them to take the necessary action until they appreciate that getting the condition would have serious physical, psychological and social implications. It is when one realises the magnitude of the negative consequences of a condition that they would take the necessary action to avoid it.

This study established if pregnant women realised the consequences of attending ANC late, not knowing their status and not taking prevention measures especially during pregnancy. This will facilitate the development of strategies that would educate on the implications of transmitting HIV to unborn babies, the HIV disease itself and pregnancy.

### **2.2.1.3 Perceived Benefits**

This includes one's beliefs in the efficacy of the advised action to reduce the risk or seriousness of impact. The person needs to believe that by taking a certain action, it will



help them avoid or prevent a problem from occurring. It is this belief that gives them confidence to take the action because they are sure of the outcomes.

It was established in this study whether pregnant women believed that going for ANC early and knowing their HIV status would promote their health and protect their unborn babies from contracting HIV. This would facilitate the development of strategies that clearly present the desired action.

#### **2.2.1.4 Perceived Barriers**

This is one's belief in the tangible and psychological costs of the advised behaviour. There could be several barriers that can affect people's decision making to take a particular action. These include costs, duration, complexity of the desired behaviour and accessibility to services that would support the action taking. It is only when one realises that they have the capacity to deal with these barriers, that they would be able to take the necessary action.

In this study, barriers that affect the timely utilization of ANC and PMTCT services were identified. Ways to reduce these barriers were explored and such barriers would be situational, individual and infrastructural or environmental.

#### **2.2.1.5 Cues to Action (Motivation)**

These are strategies to activate readiness. This is when an individual feels the desire to take the necessary action after believing that they have the capacity to do so. The required action will benefit them and knowing how to deal with the expected barriers. Firstly, it requires motivation on the part of the person to have the desire to comply with a prescribed action or treatment. Secondly, the individual should have the concern about health matters and lastly, to be willing to seek and accept health care and engage in positive health activities.

In this study, the level of awareness and knowledge was established. The relationship was determined to indicate whether they took the necessary actions like utilizing ANC services in the first trimester of pregnancy due to their level of knowledge. Those

interviewed also provided information on their feelings and observations on strategies that would motivate pregnant women to utilize ANC and PMTCT services earlier.

#### **2.2.1.6 Self-Efficacy (Modifying Factors)**

Self-efficacy refers to the strength of an individual's belief in his own ability to respond to novel or difficult situations and to deal with any associated obstacles or setbacks (Peltzer 2000:39). This is confidence in one's ability to take action. One should feel that they are capable of taking the necessary action correctly because it is that confidence that would motivate them to take the action.

It was further established in this study if pregnant women go for HIV testing because of awareness and confidence or merely because it was offered. Some of the factors that could build their confidence were having adequate knowledge and skills on HIV prevention, being actively involved in HIV activities or having knowledge on the availability of support and treatment.

### **2.3 LITERATURE ON ANTENATAL CARE AND PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV SERVICES AS IT RELATES TO THE HEALTH BELIEF MODEL'S ASSUMPTIONS AND CONSTRUCTS**

Literature on this topic shows that there is a relationship between the available data and the discussed assumptions of the HBM. There is evidence from existing research in South Africa, Africa and Asia that some of the areas of the HBM have been explored in relation to ANC and PMTCT services.

#### **2.3.1 HIV Prevalence for Pregnant Women in South Africa**

South Africa has an estimated population of 47.8 million. It is one of the Sub-Saharan countries worst hit by the HIV and AIDS epidemic and one of the top five most affected countries. It is estimated that 5.7 million people are infected with HIV (UNAIDS 2010). According to DOH 2011, the 2010 national antenatal sentinel HIV and syphilis prevalence survey revealed an estimated overall national HIV prevalence among antenatal women aged 15 - 49 years of 30.2% (95% CI: 29.4% - 30.9%). This is very close

to the 2009 estimate which was 29.4% (95% CI: 28.7% - 30.2%). Statistics have shown that MTCT of HIV ranks second as a mode of transmission for HIV. Antenatal HIV and syphilis prevalence surveys estimates for 1990 – 1995 ranged from 0.7% to 10.4%. Since then there was a steady increase till 2004 when it reached 30% (DOH 2011). For the past five years the prevalence as shown by the AIDS epidemic curve has reached a plateau in this population (DOH 2011).

### **2.3.2 Maternal and Infant Mortality Situation in South Africa and Other Countries**

Reduction of maternal and under five mortality is one of the key goals of the Millennium Declaration (UNAIDS 2008). Maternal mortality ratio (MMR) for high income countries was 14 per 100,000 live births in 2009; 290 in low income countries in 2009, 640 in sub-Saharan African countries in 2009 and 410 per 100,000 live births in South Africa in 2009 of which 43% were HIV associated deaths (WHO 2010). The MMR for countries with a similar income to South Africa such as Mexico and Brazil were 85 and 58 per 100 000 live births in 2009 respectively. The infant mortality rate (IMR) in South Africa in 2009 was estimated at 44 per 1000 live births compared to Mexico where it was 18 and Brazil 23 per 1000 live births respectively (WHO 2010).

### **2.3.3 Maternal and Infant Mortality Situation in Ekurhuleni**

The MMR in the district was 131 per 100,000 live births in 2009, and IMR was 46 per 1000 live births in 2009 (DOH 2009). To combat this situation, Ekurhuleni district developed goals of intervention to improved quality of the mother's health and prevent mortality; some of which were through early identification of HIV-positive pregnant women and ensuring enrolment onto the PMTCT programme early, provision of ART prophylaxis from 14 weeks of pregnancy and lifelong ART to those eligible. To achieve these goals, utilization of ANC services in the first trimester of pregnancy is recommended.

### **2.3.4 Government Response to the HIV and AIDS Crisis**

On World AIDS Day on December 1, 2009, the South African government took a bold step and entered a new era in the fight against HIV and AIDS. On this day, President

Jacob Zuma announced a radical plan to boost the protection of affected individuals and prevent further infections through fast-tracking the distribution of ARV drugs in the country. This move was praised by the Treatment Action Campaign (TAC) lobby group and the South African National AIDS Council (SANAC), who make recommendations to government on HIV and AIDS policy (SAG 2009). Under the new plan, the new PMTCT guidelines were included where pregnant women should access ARV prophylaxis from 14 weeks.

Previously, the White Paper on Social Welfare (1997) emphasized on the needs and concerns of the people living with HIV and AIDS (PLWHA). The plans for the Department of Social Development on this matter included the development of a plan which would serve as a framework for five years for all welfare constituencies to enable them to develop strategies to address HIV and AIDS according to their specific needs (SAG 1997). This plan didn't cater much for the PMTCT programme as it was non-existent at the time until its inception in 2001.

Further to this, a National Strategic Plan (NSP) for HIV/AIDS and Sexually Transmitted Illnesses (STI) 2000-2005 was also developed and it addressed four major components namely: prevention, care and support, research, monitoring and evaluation; as well as human and legal rights (DOH 2000). This was later replaced by the current revised NSP for HIV/AIDS and STI 2007-2011 which addresses the same key priority areas but with greater specification in each area (DOH 2007).

#### **2.3.4.1 *The National Strategic Plan***

The NSP stipulates incremental target rates for pregnant women testing for HIV and that facilities should have 100% testing rate by 2011. The DOH was criticized by the TAC for not having included ARV in its prevention strategy for MTCT of HIV in the 2002-2005 NSP. Therefore, in the NSP for 2007-2011 ARV treatment for prevention was included and was in line with the current PMTCT guidelines. A new 2012-2016 NSP has been drafted and includes all the four pillars as in the above paragraph. This document is on a consultation process before it can be finalised (DOH 2011).

#### **2.3.4.2. Overview of the Prevention of Mother-to-Child Transmission of HIV Programme**

It is a common misconception that pregnant women who are living with HIV will automatically pass the disease to the unborn child and that children born to these women will be infected with the disease. In other words, two out of every three babies born to women living with HIV will be positive if there is no intervention. With effective PMTCT programme, this risk is substantially reduced.

It is recommended that all pregnant women living with HIV should be registered on the PMTCT programme and all pregnant women who do not know their status should have an HIV test early in their pregnancy. This is only possible when they commence ANC services early. The current PMTCT guidelines recommend that all pregnant women should test at the initial ANC visit. For those who test negative they should retest at 32 weeks gestation and information should be provided on how they can remain negative by practicing safe sex at all times. For those who test positive they should be enrolled onto the programme and should be supported to practice safer sex at all times. This is recommended in order to prevent re-infections as well as to protect the partner if he is HIV-negative. For those that refused testing at the initial visit, counselling sessions continue until they accept HIV testing.

#### **2.3.4.3 The Prevention of Mother-to-Child Transmission of HIV Policy**

A national PMTCT programme was initiated in 2001 using a single dose nevirapine regimen which was taken when the women went into labour. This policy was updated in 2008 to include a dual ARV therapy protocol. Thus AZT drug is administered from 28 weeks of gestation and nevirapine during labour. The 2008 guidelines highlighted that all women attending antenatal care (first attendees and women attending follow-up visits) should be given routine information about the PMTCT programme (DOH 2008). Infant feeding guidelines were also updated according to the latest evidence from WHO and exclusive breast feeding or exclusive formula feeding was recommended for six months. Aspects of this programme were implemented in all hospitals and over 90% of primary health care facilities across the country.

Despite these efforts, the PMTCT programme had not delivered according to expectations and there was need to strengthen it. As of March 2009, MTCT proportions varied widely across the country, averaging at 12% nationally but with some districts reporting MTCT proportions of above 20% (DOH 2009). This was higher than the transmission rate of less than 5% expected from a well-functioning PMTCT programme and the stipulated target in the NSP for HIV and AIDS and STIs 2007-2011. To address this problem a plan to accelerate the PMTCT programme was initiated.

#### ***2.3.4.4 Prevention of Mother-to-Child Transmission of HIV Accelerated Plan***

The PMTCT Accelerated Plan was initiated in 2009 as a focused plan of implementation and was part of the National PMTCT programme operational plan. It was based on a bottleneck analysis conducted in a review of the PMTCT programme and aimed to fast track strengthening of the programme with an initial focus on 18 health districts that were doing poorly. The main aim was to scale up access and improve quality of PMTCT services to reduce MTCT to less than 5% by 2011 as per the NSP for HIV/AIDS and STIs 2007-2011; and to integrate PMTCT programme into the existing maternal and child health interventions such as BANC, integrated management of childhood illnesses (IMCI), expanded programme on immunisation (EPI) and sexual and reproductive Health(S&RH); and to ensure that mothers living with HIV and babies are appropriately referred to HIV and AIDS services for continued treatment, care and support (DOH 2009).

With the HIV epidemic being responsible for a major component of the morbidity and mortality in South Africa, the Department of Health sought to showcase a concerted effort in addressing the epidemic through the use of the PMTCT programme to be used as a catalyst for both kick-starting improvements in the health system but also to demonstrate that a culture of success can be created in the public sector.

In brief, the accelerated PMTCT plan was seen as a means to revitalise the national response to HIV and to improve outcomes like reduced IMR and Under 5 mortality as well as MMR. It was also a means to invigorate and improve the public health sector. All the 18 districts identified implemented the plan. It is worth noting that some gains have been seen in the priority districts where the accelerated plan had been implemented.

Furthermore, to improve the PMTCT programme, WHO recommended new strategies to reduce MTCT rates in November 2009.

#### ***2.3.4.5 New Implemented Prevention of Mother-to-Child Transmission of HIV Guidelines as of March 2010***

Due to the availability of a significant amount of new evidence on ARV prophylaxis to prevent MTCT, as well as new information on optimal timing for ART initiation (treatment eligibility), new guidance was issued globally in November 2009 by WHO. Particularly important was the evidence indicating the benefits of starting ARV prophylaxis for PMTCT earlier during pregnancy (WHO 2009).

South Africa is one of the countries which adopted the new guidelines and started implementation from March 2010 to all health facilities offering PMTCT services. The new guidelines recommend that women living with HIV should be initiated on ARV prophylaxis from 14 weeks of gestation until one week post-delivery, and those eligible for long life ART should be immediately initiated on ART. The successful implementation of these guidelines depends on, amongst other issues, early antenatal booking. If successfully implemented, these recommendations can reduce MTCT risk to less than 5% even in breastfeeding populations (from a background risk of 35%) and in non-breastfeeding populations (from a background risk of 25%) and will help promote improved maternal and child health and survival. More effective interventions in resource-limited settings make it possible for low and middle income countries to target the virtual elimination of MTCT and paediatric HIV/AIDS, which has already been achieved in many countries (WHO 2009).

The National DOH PMTCT steering committee met on the 29<sup>th</sup> & 30<sup>th</sup> June 2011 and committed to the global agenda of elimination of MTCT and paediatric HIV/AIDS by 2015 with a new theme of “Moving towards No child born with HIV by 2015 in South Africa and keeping mothers alive and healthy”(DOH 2011). The new guidelines and the elimination agenda require pregnant women to utilize ANC and PMTCT services early.

## **2.4 FACTORS INFLUENCING ANTENATAL CARE AND PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV SERVICES' UTILIZATION**

### **2.4.1 Knowledge or Awareness of Antenatal Care and Prevention of Mother-to-Child Transmission of HIV Services**

Knowledge is power and enables decision-making. This same notion applies to ANC and PMTCT services. Basic knowledge about the disease and how it is transmitted seems to be increasing in most communities. In addition, studies on knowledge, attitudes and practices have revealed a proportion of 94-98%.

A study conducted in India by Rogers, Meundi, Amma, Rao, Shetty, Antony, Sebastian & Shetty<sup>2</sup> (2006) revealed that at least 94% of the 202 women who participated in the survey had heard about HIV and AIDS and 60% of them had relatively good knowledge regarding risk factors for HIV transmission. However, almost half of the women (48%) had no knowledge or rather did not know that there were means to prevent MTCT. A study in Nigeria by Fasubaa (2001) revealed that there was a high acceptance rate of HIV testing among pregnant women who were knowledgeable about the HIV disease.

A study by Bajunirwe and Muzoora (2005) in Uganda revealed that women had relatively high knowledge of PMTCT. However, women in rural areas had a tendency to think that they should consult their husbands before accepting an HIV test during pregnancy. This could be attributed to the status of women in this particular community as men are the decision-makers. The findings of this study reflect similar findings with a study conducted in Northern Nigeria (Iliyasu, Abubakar, Kabir & Aliyu 2006). Even where knowledge of HIV and AIDS was adequate among the mothers, misconceptions, fear, gaps in knowledge and limited access to quality counselling remained prevalent, which ultimately affected early ANC and PMTCT services utilization among pregnant women. The study in Northern Nigeria confirms that the decision not to test is not due to lack of knowledge or information. This implies that education and communication does not always appear to be the issue.

In a study conducted in Rwanda by Lindan, Allen, Carael, Nsengumuremyi, van der Perr, Selufilira, Tice, Black, Coates & Hulley (1991) at least 96-98% of women correctly



identified the three primary routes of infection. However, the study further indicated challenges with the attitude and actions taken. Only 16% of the women reported taking any action to avoid infection in the previous year, and most of them about 11%, had done so merely by asking their male partners to change their behaviour. While at least 7% had tried to use condoms, more than half of the women (68%) thought the condoms could be dangerous to use, revealing a lack of basic knowledge of condom and condom use. The same study also showed that women who perceived themselves as being at high risk of HIV were more likely to change their behaviour. More than half of them (57%) were in this category and they were also more likely to be infected by HIV.

The literature makes reference to the lack of knowledge as one of the factors in mothers not to utilize these services. In this study, the researcher generated information about pregnant women's awareness of ANC and PMTCT services in this sub-district and how it related to utilization.

#### **2.4.2 Perceived Benefits to Utilization of Antenatal Care and Prevention of Mother to Child Transmission of HIV Services**

Apart from pregnancy confirmation, early detection of complications, provision of vitamins and supplements, foetal growth monitoring, vaccinations and provision of information on caring for the baby, there are crucial benefits linked to PMTCT services.

The link between knowledge of HIV status and effective prevention, care and treatment has always been critical, but it has become more so with the changing face of the epidemic in the communities hardest hit by the epidemic. This is where increasing numbers of HIV-positive people are now becoming ill with AIDS-related disorders and now need more care and treatment. The same has greatly affected women and children. The new PMTCT guidelines have provided a stage for the importance to utilize these services early.

For improved maternal and child health; all pregnant women should be offered HIV testing as early as possible. This makes it possible for women who test positive to initiate preventive intervention early and substantially reduce the risk of transmitting the

infection to their new born babies. Before 1994, HIV testing in South Africa was only offered to pregnant women who were considered to be at risk of HIV or at the request of the patient herself, implying that only very few mothers would have tested by the time their babies were born (Mulekya 2006).

Testing early for HIV would also benefit the women. HIV-positive pregnant women need special care and support during pregnancy to keep them healthy, and knowing their HIV status helps them to be better prepared for their pregnancy, to explore feeding options for their unborn babies, motivates them to change behaviour and prevent transmission and to seek available care support and treatment (Strode, van Rooyen & Heywood 2005).

There are also benefits to communities. When more pregnant women learn about their status, it will reduce denial, stigma and discrimination that tend to surround HIV and AIDS. Furthermore, it will be easier to mobilize support for appropriate responses within communities (UNAIDS 2004). An evaluation of UNICEF-funded PMTCT programmes in 11 developing countries in 2002 involving review of progress reports, interviews with PMTCT programme managers, rapid assessments in Rwanda and Zambia and site visits in Honduras and India found that PMTCT programmes did not discourage the use of ANC, but helped women to disclose their HIV testing experience and sero-status to their partners and family, thus fostering discussions and normalizing HIV testing and HIV care (UNICEF 2003).

In this study, the researcher explored what pregnant women perceived as the benefits of utilizing ANC and PMTCT services early as well as determined factors that would motivate them to utilize these services.

#### **2.4.3 Perceived Barriers to Utilization of Antenatal Care and Prevention of Mother-to-Child Transmission of HIV Services**

Despite the stipulated benefits, there are barriers to utilizing ANC and PMTCT services. The Future Health Systems RPC conducted a study to examine women's perceptions of ANC and delivery care services in Uganda where 62% of women had four ANC visits in 2009. The study found that the main factors that affect uptake of antenatal services and

utilization of formal delivery care are transport costs, informal fees, demands for requirements such as gloves, and the poor attitude of the providers (Uganda Daily Monitor 2009). Another factor affecting the utilization of services was fear of being tested for HIV. Hence a number of Ugandan mothers found it safer to keep away from ANC clinics in a move to avoid what they feel as compulsory HIV testing.

According to a PlusNews 2010 report, Kenya faces the same hurdle. It said: "HIV testing is routine for PMTCT programme and most hospitals offer it as part of ANC but many women in Kenya's western Nyanza Province say pre-natal HIV tests are a direct threat to their marriages" (Linda 2010).

In a study to seek reasons why rural women start ANC late in a rural setting of Hlabisa district in KZN Province, the findings indicated that most women in this setting do not perceive significant health threats during pregnancy, and in turn view more than one ANC visit as unnecessary (Myer *et al.* 2003). In contrast, women perceive labour and delivery as a time of significant health risks that require biomedical attention and most women prefer to give birth in a health facility. This paradox in which health care is important for childbirth but not during pregnancy, is embodied in most women's primary reason for seeking antenatal care in this setting; to receive an antenatal attendance card that is required to deliver at a health facility (Myer *et al.* 2003).

Women are more likely than men to experience stigma associated with HIV. According to Gruskin, Ahmed & Ferguson(2008) stigma and discrimination remain two of the most challenging barriers to implementation of HIV programmes generally. This is especially pertinent for pregnancy-related services given the widespread reporting of judgmental attitudes on the part of the service providers with regard to HIV-positive women in general and with respect to their desire to have children. According to Rogers *et al.* (2006) there are a number of socio-cultural barriers that confront pregnant women when they decide to opt for HIV testing. These were more evident if the pregnant woman opted not to breast-feed her baby. In this group of women, although over three-quarters of them (85%) expressed willingness to test, most were concerned about confidentiality and disclosing HIV status because of fear of negative reactions from their partners, parents, other family members and the community.

In this study, the researcher identified possible barriers to early utilization of ANC and PMTCT services in the chosen sub-district.

#### **2.4.4 Accessibility and Availability of Antenatal Care and Prevention of Mother-to-Child Transmission of HIV Services**

In SA, the apartheid system created patterns of inequality in terms of race, gender and geographical disparities which still exist to a large extent today. However, on May 24, 1994, the then South African president, Mr Nelson Mandela, declared that all health care for children under the age of six years and pregnant women would be free. This included ANC services (Kirigia, Lambo & Sambo 2000). The cluster maternal, child and women's health (MCWH) and nutrition was then mandated to co-ordinate programmes and develop policy guidelines but unfortunately the PMTCT programme was only initiated in 2001.

In Ekurhuleni East, all clinics, CHCs and hospitals provide ANC and PMTCT services. Access and availability of ANC and PMTCT services are critical factors especially in low and middle income countries. People could be willing to access these services but in most instances services are not available due to logistical challenges like transport, shortage of testing kits or shortage of staff to offer these services.

The UNAIDS report on universal access (WHO 2009) highlights the gains made in providing access to HIV services for women and children in Eastern and Southern Africa, where at least 58% of HIV-positive pregnant women received ART to prevent HIV transmission to their children in 2008 as compared to 46% in 2007. This has been attributed to strong political will and innovative approaches to service delivery in the region.

In 2004, a study was conducted by de Paoli, Manongi and Klepp (2006) to explore factors associated with the expressed willingness of pregnant women to accept PMTCT services. The study revealed that perceived high personal susceptibility to HIV and AIDS, barriers related to confidentiality and partner involvement, self-efficacy regarding alternative feeding methods and religion were all related to willingness to accept these services.

Acceptance of PMTCT services by women appeared to depend on their perception that it would provide clear benefits for the child. Sharing the diagnosis with a partner may not have the intended effect if there is a lack of sensitivity to the woman's fear of blame and rejection.

In another study in Kenya by Moth, Ayayo & Kaseje (2005), one of the reasons women dropped-out from the PMTCT programme was failure to pay for the service. This highlights the importance of ensuring that HIV programmes and in particular PMTCT programme is provided for free.

In a study conducted in three antenatal clinics in the inner city of Johannesburg, South Africa, by Woolman, Sprague & Black (2009) there was a strong correlation between government failure to provide adequate remuneration and secure employment of lay counsellors for the provision of HCT, and the failure of many women and children to receive timely medical interventions. The study revealed that late payment of HIV lay counsellors who provide the biggest component of PMTCT services had a serious impact on the programme in the three clinics. Consequently, the counsellors would not report for work if they had not been paid, explaining that they had no money to pay for transport. This meant that patients needing PMTCT services especially HCT could not be assisted. The study results highlight a big challenge in the context of accessibility and availability of services to pregnant women. The lay counsellors, through no fault of their own, are often unable to make these timely interventions and thus affect the provision of critical services to pregnant women. This strategy of using HIV lay counsellors is implemented in the entire province of Gauteng and similar challenges are faced.

In this study the researcher examined the factors that contributed to the accessibility and availability of ANC and PMTCT services in this sub-district as narrated by the pregnant women.

## **2.5 CONCLUSION**

The literature review has set the stage for understanding the utilization of ANC and PMTCT services in general. This chapter covered a broader review of literature on ANC and PMTCT programmes, factors affecting the decision of pregnant women to utilize ANC and PMTCT services. It is clear that low and middle income countries still experience late ANC booking and there is low uptake of these services even though this is crucial for survival of both the pregnant woman and her unborn child. The literature also suggests that inaccessibility and unavailability of services, poor attitude of service providers, stigma, and discrimination are some of the known factors affecting pregnant women to utilize ANC and PMTCT services early.

While the literature is limited, especially with regard to the South African context, a number of studies have been conducted in comparable countries in Africa and Asia. The next chapter will focus on research methodology.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter outlines the research methodology used. It starts by explaining the research design and methods used which include the study population and its eligibility criteria, sample size, sampling technique used, recruitment process, the method of data collection used, data analysis methods, validity and reliability of the research instrument and ethical considerations. This was a health systems research.

#### **3.2 RESEARCH DESIGN**

The research design used was a blue print or outline for conducting the study in such a way that maximum control was exercised over factors that could interfere with the validity of the research results (Polit & Beck 2008:24). A good design would help the researcher to avoid bias while collecting the data. The purpose of the study was to determine if ANC and PMTCT services were utilised within the first trimester of pregnancy by women in East Ekurhuleni sub-district. The study therefore used a non-experimental or observational descriptive research design.

##### **3.2.1 Observational Descriptive Research Design**

A non-experimental or observational descriptive research design was used because it allowed the researcher to collect data without introducing any new treatments or changes to the subjects (Polit & Beck 2008:175 -178). The purpose was to describe situations and events (Babbie 2007:89), and it provided an accurate portrayal or account of the characteristics of this group (Babbie 2007:244; Burns & Grove 2005: 26). It also generated questions and hypotheses for future experimental studies and objectively documented the aspects of the situation (Burns & Grove 2005: 26; Babbie 2001:93). Descriptive studies do not focus much on relationships among variables; and in this study, the purpose was to enquire, describe and document aspects of a situation as it naturally occurred; that was conditions that existed, practices that prevailed,

beliefs, attitudes and on-going processes (Babbie 2001:93). Therefore the non-experimental design was used because the study was descriptive.

### **3.2.2 Quantitative Research Paradigm**

This study used a quantitative approach which involves the systematic collection of numeric and categorical quantitative data. Data collection in non-experimental/observational studies is very difficult to control unlike as in experimental study designed studies. The analysis of the data was done using statistical procedures (Polit & Beck 2008:24). Data entry for this study was done using Epi Info version 3.5.3, while data was analysed using STATA Version 11.0 which is a data analysis and statistical software. This approach was chosen because the study aimed at quantifying factors associated with the utilization of ANC and PMTCT services in the chosen sub-district.

## **3.3 RESEARCH METHODS**

### **3.3.1 Sampling**

Sampling involves selecting a group of people, events, behaviours, or other elements with which to conduct a study. The sampling theory was developed to determine mathematically the most effective way to acquire a sample that would accurately reflect the population under study. Its concepts include elements, populations, sampling criteria, representativeness, sampling errors, randomization, sampling frames and sampling plans (Burns & Grove 2005: 341).

The sampling frame used in this study was the 29 fixed clinics. The clinics were stratified according to the towns in the sub-district and later judgemental sampling technique was used to choose at least one facility with high number of ANC attendees in each strata. A consecutive sample of pregnant women from each selected clinic was used.



### **3.3.1.1 Study Population**

The study population comprised of pregnant women who attended ANC in publicly funded clinics in East Ekurhuleni sub-district. The study population was the entire set of individuals having some common characteristics (Burns & Grove 2005:342). The target population was pregnant women who were attending ANC on a subsequent basis in the targeted clinics in East Ekurhuleni sub-district who were aged between 18 to 49 years. The accessible population was the portion of the target population which comprised of the individuals who conformed to the eligibility criteria and were available for this particular study (Burns & Grove 2005: 342). Eligibility criteria is the criteria that specified the population characteristics used by the researcher that designated the specific attributes of the target population, and which subjects were selected for participation in this study (Burns & Grove 2005:342; Polit & Beck 2008:338). The eligibility criteria were as listed below.

#### **Inclusion Criteria**

- Being pregnant at the time of recruitment and aged between 18-49 years
- Being a subsequent attendee (not first visit) of ANC in the targeted public clinics in the sub-district
- Being able to give informed consent (verbal or written)

#### **Exclusion Criteria**

- Pregnant women aged below 18 years
- If attending the ANC clinic for the first time
- Eligible participants unable to give informed consent
- Eligible participants unwilling to give consent.

### **3.3.1.2 Sampling Technique**

Subsequent ANC visits were attended by at least 7 to 20 pregnant women on each specified day in these targeted clinics. Since the number seen per day

was small, all eligible pregnant women were included in the study. This non-probability sampling technique could be considered as the best of all non-probability samples because it includes all subjects that are available. Hence, it makes the sample a better representation of the entire population (Castillo 2009). This method was recommended because it was not possible to randomize the smaller numbers seen during the individual subsequent visits.

In this case, all the eligible pregnant women attending ANC on any subsequent visit were asked to participate in the study. This method eliminated a high chance of bias in the selection of respondents as each eligible individual attending ANC had an equal chance of participating in the study.

This design was practical, every eligible participant was asked to participate. Hence the researcher's judgement was not used to select individual participants. However, the disadvantage was that some elements of the population might have been systematically over or under represented (Polit & Beck 2008: 339). Having said the above, the entire exercise was expensive because the identified sites were far apart. This required the researcher and the data collection team to travel distances for data collection.

### ***3.3.1.3 Recruitment of Participants and Ethical Issues related to Sampling***

The recruitment took place in the targeted clinics during regular subsequent ANC appointments of eligible participants. Information about the study was given by the research team after the nurses facilitated the process. The women were informed that the study was not part of their routine ANC, their participation was voluntary, and no one should force them or threaten them that they might not receive care as before if they refuse to participate. They were also informed that they could withdraw at any time even during interviews if they did not want to continue. They were further notified that all of them who were above 18 years of age were eligible to participate. Informed consent was obtained, thus the decision to participate in this study remained the sole responsibility of the eligible pregnant women. The women were also informed that the study would be used for scientific purposes and might be published. However, information would be kept confidential and no one in the team would expose information

received to people who should not see it. They were informed that the questionnaire would be administered in privacy by using a separate room/area within the targeted facilities.

#### **3.3.1.4 Sample Size**

According to DHIS data for 2010, 19 926 pregnant women accessed ANC and PMTCT services in this sub-district from January to December, of which 5981 women accessed ANC services at the targeted sites. The planned sample size in this study was 360 pregnant women, thus at least 60 participants were targeted per clinic. However, because all eligible pregnant women were included in each visited day, the number of participants interviewed was 390.

**Table 3.1: Respondents**

<b>Facility Number</b>	<b>Name of Facility</b>	<b>Number of respondents</b>
01	Nokuthela Ngwenya CHC	75
02	Kwa Thema CHC	64
03	First Avenue Clinic	63
04	Phillip Moyo CHC	60
05	Daveyton Main Clinic	65
06	Tsakane Main Clinic	63
<b>Total number of respondents</b>		<b>390</b>

#### **3.3.2 Data Collection**

A structured questionnaire was used to collect the data (see Annexure G & H). The development of a formal questionnaire ensured that similar data were collected from all participants and it also ensured objectivity during the data collection process.

According to Babbie (2001:268), the use of structured questionnaires or instruments can lead to information that is relatively superficial since interviewers rarely probe deeply into such complexities as contradictions of human behaviour and feelings.

However, in this study, some open ended questions were included in order to obtain some responses in the participants' own words and thoughts (Babbie 2007:246), attempting to address gaps in the closed ended questions( Babbie 2007:246). Conducting these interviews was demanding especially on personal time and other resources.

### ***3.3.2.1 Data Collection Approach and Method***

The data collection approach used in this study was in the form of a survey. A survey is where information is gathered by mail or in person or personal interviews about an identified population (Burns & Grove 2005: 239). The advantages of a survey include the following; being flexible and broad in sense, applicable to many populations, focuses on a wide range of topics and its information can be used for many purposes. It ensures uniformity on the data collected from all the participants and objectivity hence reducing bias.

The data was collected using two methods. The first was through personal interviews conducted by the interviewers using the questionnaire. This method was chosen because it is the most powerful method of securing survey information since the interviewer met with the individual face to face and secured information from them (Polit & Beck 2008:369; Babbie 2007:257). The second method was self-administration of the questionnaire where respondents requested to complete the questionnaires on their own and were under supervision of the interviewers. These were submitted during the data collection sessions (Babbie 2007:257). The questionnaires were checked before the participants left the clinic to make sure that all questions were answered. This method was encouraged in two facilities due to lack of available private space or area to be used for the personal interviews. However, questions were clarified to individual participants by the interviewers. The advantage of both methods was that the response rate was high, confusing questions were clarified and there was control and order (Babbie 2007:260).

### **3.3.2.2. Development and Testing of the Data Collection Instrument**

The researcher developed the research questionnaire. It was later reviewed by nurses involved in the provision of ANC and PMTCT services, programme officers, programme managers and coordinators who provide technical support to the MCWH department. It was later reviewed by the University of South Africa's (UNISA) health studies department. However, the final review was from the district research ethics committee. Their feedback was used to make alterations to some of the questions before piloting it.

A pilot study of the questionnaire was conducted. Twenty questionnaires were administered at one clinic not selected for the study but in the same sub-district. Participants' feelings and thoughts about questionnaire items were captured and feedback from the interviewers was also captured. The feedback was then integrated in the final version of the instrument. The Pilot study was conducted on a small scale in preparation for the main study (Burns & Grove 2005:42). The first and most efficient way to find out how good a questionnaire is; is to pre-test it with a group of respondents who have the same characteristics as those involved in the study as it was done.

### **3.3.2.3 Characteristics of the Data Collection Instrument**

The structured questionnaire contained 28 items and was in both English and *isiZulu* languages because the majority of the Ekurhuleni community are conversant with *isiZulu* including those that speak other African languages. The first section obtained information related to participants' biographic data or demographic variables (e.g. age, marital status, education level and number of pregnancies). The second section had questions related to ANC clinic attendance (e.g. timing of attendance, reasons for attendance, if any ANC information was sourced prior to ANC attendance, benefits for early booking, and barriers to attendance and motivation for early booking). The third section had questions on ANC services (e.g. information received, services received, and likert scale questions on health care workers). The final section had questions on PMTCT (e.g. knowledge/awareness of the programme and its services, HCT, ARV prophylaxis timing and barriers to ARVs adherence).

Both open and closed questions were used in the questionnaire (see Annexure G & H). Open ended questions did not restrict the respondents' answers to pre-established alternatives. Conversely, closed ended questions offered the respondents a set of mutually exclusive and jointly exhaustive alternative replies, from which the one that closely approximates the applicable answer, must be chosen (Polit & Beck 2008:369). Closed ended questions were used when there were a fixed number of alternative responses presented to the participants.

#### **3.3.2.4. Data Collection Process**

Permission to conduct this research was granted by UNISA's health studies ethics committee in September 2011 and the Ekurhuleni district ethics committee in November 2011; then the data collection process began. The data was collected between November 2011 and January 2012 by the main investigator and two trained field workers. The team was introduced to the clinics by district management and all necessary protocol was observed.

The clinics were visited either in the morning or in the afternoon depending on the ANC clinic times of the facility and visits were done on stipulated ANC clinic days. The sisters doing ANC in the selected clinics facilitated the process by informing all pregnant women attending ANC on a particular day about the study, the investigation team then explained more details to those eligible and questions were answered appropriately. These interviews were conducted early while the participants were still waiting on the line/queue to be consulted or seen by the nurse. This was done to avoid keeping them longer at the clinic. Individual interviews or self-administration of the questionnaires were done in privacy.

#### **3.3.2.5. Ethical Considerations Related to Data Collection**

Voluntary participation was encouraged and informed consent was obtained to protect the rights of the participants. The data was then collected in a separate room or area and no names or identification numbers were used on the questionnaires to assure anonymity, privacy and confidentiality. The participants who did not know their HIV status were referred to the nurse for provision of on-going HCT and further

management as requested by the district. The participants were thanked after the interview and provided their comments (if any) at the end of the session. Questionnaires were all collected and kept safe.

### **3.3.3 Statistical Methods Used**

Data analysis is the systematic organisation and synthesis of research data, to give meaning to the data (Burns & Grove 2005:43). The analysis was based on the completed questionnaires from the six clinics. Epi Info version 3.5.3 was used to enter data. Descriptive statistics were used to summarise data through use of measures of central tendency and dispersion. Analytic statistics were also used to display the data by using appropriate bivariate and multivariate analyses using STATA Version 11.0 data analysis and statistical software.

## **3.4 VALIDITY AND RELIABILITY OF RESEARCH INSTRUMENT**

### **3.4.1 Reliability of the Research Instrument**

Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring, and whether a particular technique applied repeatedly to the same object yields the same result each time (Babbie 2001:140). An instrument can be said to be reliable if its measures accurately reflect the true scores of attribute under investigation. Reliability of an instrument refers to its accuracy and precision (Babbie 2001:140).

To ensure the reliability of the study, the following applied:

- The use of a clearly worded structured questionnaire. All participants were asked the same questions and were required to choose among the same alternative answers. However if it was an open ended question, an option to include another answer was provided and it was required to specify or describe the response.

- The two field workers/interviewers were chosen based on their education levels as well as their sensitivity, awareness and knowledge on the topic under study.
- The interviewers were well informed about the study and trained on the instrument before the pilot and main study were conducted. Uniform wording of items and alternative answers ensured reproducibility of the study findings. Further Probing was discouraged to prevent interviewer bias and ensure consistency.
- A pilot study of the questionnaire was conducted to ensure the precision of the questionnaire. Participants' and interviewer feedback was used to improve the instrument.

### **3.4.2 Validity of the Research Instrument**

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. It is the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration (Babbie 2001:142). Aspects of validity that can be measured are criterion-related validity, construct validity and content validity.

For this study, content validity was applied. The issue of concern under content validity is whether the items of the research instrument are representative of the content domain that the researcher intends to investigate. The questionnaire in this research was submitted to those whose work involves the provision of ANC and PMTCT services and/or technical support to MCWH department. These experts included nursing sisters, programme officers, programme managers, coordinators and research ethics committees. The experts were asked on the relevance of the questions in the instrument and their feedback was used to make alterations to the questionnaire before piloting it.

### **3.4.3 External Validity**

External validity refers to generalisability of the research findings to other settings or samples (Burns & Grove 2005:219; Polit & Beck 2008:287). This was not possible



because the sample size was small compared to the number of facilities in the sub-district therefore results could not be generalised.

### **3.5 ETHICAL CONSIDERATIONS**

Ethics refers to a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants (Polit & Beck 2008:753). To ensure that ethical issues were taken into consideration, various steps were followed by the researcher:

- To protect the rights of the institution; ethical clearance was obtained from the research ethics committees of UNISA (see Annexure A) and Ekurhuleni health district (see Annexure D). A letter to the district was written (see Annexure B) with an attachment of the research proposal to request the department to authorize the researcher to carry out the study (Polit & Beck 2008:184). Another letter was written and distributed amongst clinic supervisors and managers to notify them about the study and the proposed process to be used (see Annexure C). This was done to ensure that the study met all the ethical standards.
- The protection of the rights of the participants was a priority in this study. They were clearly informed about the purpose of the study, its risks and benefits, and that their responses would remain totally anonymous (see Annexure E & F). In addition, respondents were asked to voluntarily participate or to drop out at any point if they wished to do so (Streubert, Speziale & Carpenter 2007:62). This ensured that their rights to self-determination and full disclosure remained protected. The participants were not subjected to any harmful effects.
- The respondents were given all the details of the study and were asked to sign an informed consent form as a confirmation that they were provided with relevant information and that they were participating voluntarily (see Annexure E & F).
- They were re-assured of their anonymity, privacy and confidentiality of the data collected. The information collected was accessible to the researcher only.

Questionnaires and consent forms were kept separately, thus making it impossible to link the questionnaire to any respondent.

- To ensure scientific honesty on the part of the researcher, no plagiarism was committed, and any source of information be it human or literature has been acknowledged. In addition, objectivity was applied during data collection, analysis and discussion as the researcher currently works in a Non-Governmental Organisation (NGO) that supports the DOH in implementation of the HIV programme which includes PMTCT programme and expanding access to ART. With the nature of the work, the researcher handled the study as objectively as possible.

### **3.6 CONCLUSION**

This chapter discussed the research methodology used in this research which included research design, sampling, data collection, data analysis, validity and ethical considerations. Chapter 4 presents, analyses and describes of the research findings.

## **CHAPTER 4**

### **PRESENTATION OF RESULTS**

#### **4.1 INTRODUCTION**

In this chapter the results of the study are presented. The purpose of this study was to determine if ANC and PMTCT services were utilized within the first trimester of pregnancy by the women in East Ekurhuleni sub-district in Gauteng province, South Africa. The study further explored on factors that would motivate women to start ANC within the first trimester of pregnancy, and also how issues of knowledge or awareness affected their decision to utilize ANC and PMTCT services. The purpose of this study was in line with BANC and PMTCT guidelines which recommend ANC to start in the first trimester of pregnancy. The objectives of the study were to:

- Determine the factors that motivated pregnant women to utilize ANC and PMTCT services within the first trimester of pregnancy;
- Generate information about pregnant women's awareness of ANC and PMTCT services; and
- Identify possible barriers to the early utilization of ANC and PMTCT services in the chosen sub-district.

The researcher planned to collect data from 360 participants. However, 390 participants took part in the study. This was because all eligible pregnant women were included in a particular day, and on the last day of data collection a similar process was used on each facility hence the extra 30 participants. The data collected from these 390 participants was processed and analysed, and the results will be discussed in the subsequent chapter. The first section will present demographic data, followed by ANC attendance, ANC services, and ultimately PMTCT programme and its services.

#### **4.2 DEMOGRAPHIC DATA**

This section will describe the participants age, marital status, educational levels and number of previous pregnancies.

#### 4.2.1 Age Distribution

The mean age of the participants was 26 years (SD 5.6) and median was 25 years suggesting the age distribution of the participants was not normally distributed. Two thirds of the participants were between 20 and 29 years of age but 57 (15%) were pregnant teenagers (table 4.1).

**Table 4.1: Age distribution of pregnant women attending subsequent antenatal care visits in Ekurhuleni sub-district between November 2011 and January 2012 (n=390)**

Age		Frequency	Percentage
	18-19	57	14.6
	20-24	118	30.3
	25-29	118	30.3
	30-34	62	15.9
	35+	35	9.0
	Total	390	100

#### 4.2.2 Marital Status

Marital status of the participants was collected to see whether it was associated with early attendance of ANC. Most (56%; n=220) of the participants were single, 161 (41%) were in partnership and the rest were living alone for various reasons (see table 4.2).

**Table 4.2: Marital status distribution of pregnant women attending subsequent antenatal care visits in East Ekurhuleni sub-district between November 2011 to January 2012 (n=390)**

Marital status		Frequency	Percentage
	Single	220	56.4
	Married/life partner	71	18.2
	Living in with partner/boyfriend	90	23.1
	Widowed	4	1.0
	Divorced	1	0.3
	Separated	4	1.0
	Total	390	100

### 4.2.3 Educational Level

Educational level of the participants was obtained to see whether it was associated with early attendance at ANC. Most participants had attained some level of education and the majority (63%; n=244) had attained senior high school (Matric) (see table 4.3).

**Table 4.3: Distribution of participants by education level in East Ekurhuleni sub-district between November 2011 to January 2012 (n=389)**

<b>Educational Level</b>	<b>Frequency</b>	<b>Percentage</b>
Tertiary	81	20.8
Senior High school	244	62.7
Junior High school	36	9.3
Primary	15	3.9
None	13	3.3
Total	389	100

### 4.2.4 Number of Previous Pregnancies

The participants were asked to indicate the number of pregnancies they had previously excluding the current pregnancy. This was collected to determine whether there was an association between number of pregnancies and early utilization of ANC services. The majority had zero previous pregnancy, meaning that they were primigravidas and the current pregnancy was their first one. The results indicated that 41% (n=160) had zero pregnancy (no previous pregnancy); 36% (n=141) had had one pregnancy; 15% (n=57) had had two other pregnancies; 6% (n=22) had had other three pregnancies and 3% (n=10) had had four or more pregnancies.

## 4.3 ANTENATAL CARE ATTENDANCE

This section will indicate the gestational age at the time of booking for current pregnancy and last previous pregnancy. It will describe their primary reasons for starting ANC at a stated trimester, their perceived reasons for attending ANC, perceived best time to start ANC and the reasons for such. It will determine if any information was

accessed before falling pregnant, its sources and the content of the information, perceived benefits for utilizing ANC services in the first trimester, barriers to utilization of ANC services and actions that would motivate women to start ANC within the first trimester of pregnancy.

#### **4.3.1 Antenatal Care Booking**

##### **4.3.1.1 Gestational Age at Time of Antenatal Care Booking for Current Pregnancy**

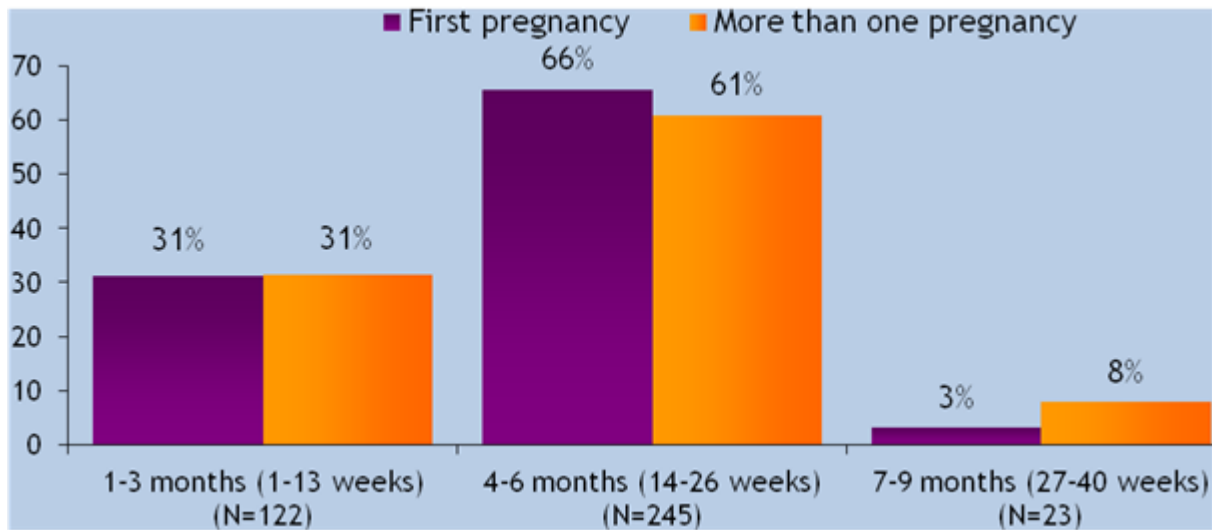
Gestational age at time of ANC booking was collected to determine whether the pregnant women started ANC within the first trimester of pregnancy according to guidelines and recommendations. This study has shown that only 31% (n=122) started ANC in their first trimester (see table 4.4)

**Table 4.4: Distribution of participants by gestational age at time of antenatal care booking in East Ekurhuleni sub-district between November 2011 and January 2012 (n=390)**

<b>Gestational age</b>	<b>Frequency</b>	<b>Percentage</b>
1-3 months (1-13 weeks)	122	31.3
4-6 months (14-26 weeks)	245	62.8
7-9 months (27-40 weeks)	23	5.9
Total	390	100

##### **4.3.1.2 Gestational Age at Time of Antenatal Care Booking for Multigravidas and Primigravidas**

Out of the 390 respondents; 230 (59%) were multi-paravidas (had more than one pregnancy) and 160 (41%) were primigravidas (first pregnancy). Gestational age was enquired to compare differences in ANC booking between those with multiple pregnancies and those with first pregnancy (see fig 4.1).



**Figure 4.1: Gestational age distribution between primigravidas and multigravidas at time of antenatal care booking in East Ekurhuleni sub-district between November 2011 to January 2012(n=390)**

#### 4.3.2 Primary Reasons for Starting Antenatal Care at a Stated Trimester

A closed question with a possibility of multiple responses was asked to identify the primary reasons why the pregnant women started ANC. The findings of this study suggested several reasons why these participants started ANC, however, the most common reason was to get an antenatal card for delivery usage, thus 29% (n=114) of all participants. Other various reasons were also given (see table 4.5).

**Table 4.5: Distribution of participants' primary reasons for starting antenatal care in East Ekurhuleni sub-district between November 2011 and January 2012 at a stated trimester (n=390)**

Reasons	Frequency	Percentage
To get an Antenatal Card for delivery use	114	29.2
Encouraged by family and/or friends	101	25.9
To have an HIV test	96	24.6
To confirm pregnancy	84	21.5
Illness	75	19.2
To get Vaccines and Vitamins	74	19.0
To check gestational age	30	7.7
Routine check-ups	10	2.6
Voluntary decision	7	1.8
Work obligations	4	1.0
Doctors' Advice	3	0.8

### 4.3.3 Perceived General Reasons for Antenatal Care Attendance

Although the participants were asked about their individual reasons for starting ANC, a question on generalised reasons was asked to determine their knowledge on other reasons for ANC. It was a closed question but had possibility of multiple responses. On the perceived reasons for ANC attendance, 65% of the respondents indicated HCT, 51% indicated foetal growth monitoring; 42% indicated identification and prevention of complications; 29% indicated vaccination and supplements; 19% were for other diagnostic tests, 16% indicated nutrition education while 9% included ARV prophylaxis.

**Table 4.6: Distribution of participants' perceived reasons for antenatal care attendance against age in East Ekurhuleni Sub-district between November 2011 and January 2012**

Reasons	18-19 (n=57)	20-24 (n=118)	25-29 (n=118)	30-34 (n=62)	35+ (n=35)	P values
To be counselled & tested for HIV (N=255)	30	75	82	47	21	0.073
%	52.6	63.6	69.5	75.8	60	65.4
To monitor foetal growth (N=197)	34	54	52	36	21	0.107
%	59.7	45.8	44.1	58.1	60	50.5
To identify and prevent complications (N=163)	19	54	40	39	11	<0.05
%	33.3	45.8	33.9	62.9	31.4	41.8
To be given Vaccines & Vitamins (N=113)	12	32	39	24	6	0.087
%	21.1	27.1	33.1	38.7	17.1	29
Other diagnostic tests (urine, BP etc.) (N=73)	6	27	18	14	8	0.215
%	10.5	22.9	15.3	22.6	22.9	18.7
Nutrition education (N=62)	5	21	19	14	3	0.202
%	8.8	17.8	16.1	22.6	8.6	15.9
To get Antiretroviral prophylaxis (N=35)	1	12	8	11	3	<0.05
%	1.8	10.2	6.8	17.7	8.6	9



#### **4.3.4 Perception of the Best Time to Start Antenatal Care**

A closed question to determine the participants perceived best time to start ANC was asked to determine their level of awareness on the recommended time to start ANC. Majority (n=329; 84%) of the respondents indicated first trimester as the best time to start ANC; 15% (n=59) indicated second trimester and only 1% (n=2) indicated third trimester.

#### **4.3.5 Reasons for Antenatal Care during the Perceived Best Time**

This closed question with possibility of multiple responses was asked to determine whether there is an association with their previous responses. 58% (n=225) indicated prevention of complications; 55% (n=213) indicated early HIV diagnosis 33% (n=130) indicated confirmation of pregnancy; 27% (n=104) indicated ART therapy, 23% (n=91) indicated vaccinations and supplements; getting antenatal card for delivery use was at 20% (n=76) and 16% (n=63) was indicated for other diagnostic tests.

#### **4.3.6 Antenatal Care Information Accessed Before Pregnancy**

This close ended question was asked to find out if information on pregnancy was readily available before falling pregnant. The results indicated that just above half of the women accessed ANC information before pregnancy (56%, n=219) and 44% (n=171) did not. Facilities were disaggregated to determine which ones are promoting availability of information as 54% received IEC material from the clinics with ANC information before they got pregnant. The distribution was as follows: 76% of respondents from Tsakane; 69% from Daveyton Main; 63% from Nokuthela Ngwenya; 48% from Phillip Moyo, 45% from Kwa Thema and 33% from First Avenue.

##### ***4.3.6.1 Sources of the Antenatal Care Information Accessed before Pregnancy***

This close ended question with a possibility of multiple responses was asked to determine the common sources of this readily available ANC information. Most of the women accessed IEC material from the clinic/hospital (54%; n=118), 32% (n=71)

accessed it from their families and friends, 22% (n=49) through television, 21% (n=45) through magazines and newspapers, 18% (n=39) through the radio, 9% (n=19) through community mobilization, 6% (n=14) from ANC attendance during previous pregnancy and 1% (n=2) through traditional health practitioners.

#### **4.3.6.2 Content of the Antenatal Care Information Accessed before Pregnancy**

A close ended question with possibility of multiple responses was asked to determine the kind of information that was commonly accessed. The most common content was on HIV screening and treatment (n=150; 39%). (See table 4.7).

**Table 4.7: Distribution of the content of the antenatal care information provided to pregnant women in East Ekurhuleni sub-district between November 2011 and January 2012**

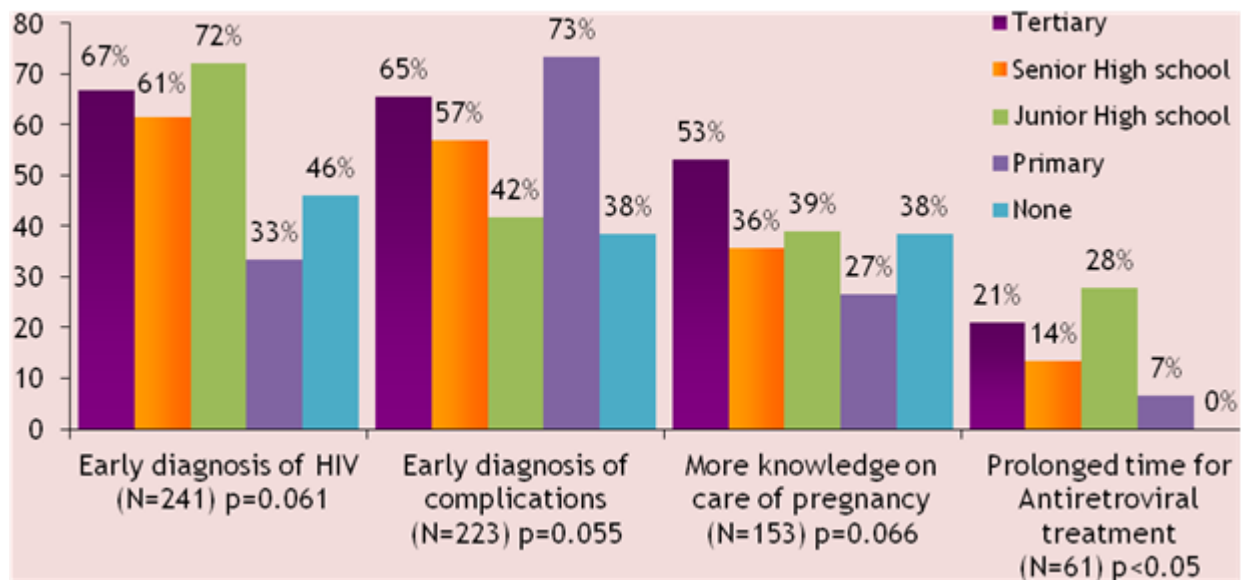
<b>Content</b>	<b>Frequency</b>	<b>Percentage</b>
HIV screening and treatment	150	38.5
Prevention of complications	96	24.6
Baby feeding options	86	22.1
Signs of complications	68	17.4
Nutrition in pregnancy	65	16.7
Signs of hypertension	29	7.4

#### **4.3.7 Perceived Benefits to Utilization of Antenatal Services within the First Trimester of Pregnancy**

It was important to enquire on the perceived benefits for early utilization of ANC hence a closed ended question with possibility of multiple responses was asked. This determined their level of awareness and prioritisation. The following were prioritized as more beneficial, 62% (n=242) indicated that early HIV diagnosis is very crucial, 57% (n=224) saw early diagnosis of complications beneficial and 39% (n=153) indicated acquiring more knowledge on care of pregnancy as beneficial (see table 4.8)

**Table 4.8: Distribution of perceived benefits to early utilization of antenatal care services by pregnant women in East Ekurhuleni sub-district between November 2011 and January 2012**

Benefits	Frequency	Percentage
Early diagnosis of HIV	242	62.1
Early diagnosis of complications	224	57.4
More knowledge on care of pregnancy	153	39.2
Prevention of complications	147	37.7
Prolonged time for Antiretroviral treatment	61	15.6



**Figure 4.2: Distribution of participants' perceived benefits to early utilization of ANC services against education in East Ekurhuleni sub-district between November 2011 and December 2012**

There was a statistical significance  $p < 0.05$  on one independent variable. More participants with junior, senior and tertiary education saw prolonged time for ARV treatment as beneficial compared to those with primary or no education (see figure 4.2).

#### **4.3.8 Perceived Barriers to Utilization of Antenatal Care and Prevention of Mother-to-Child Transmission of HIV Services**

A close ended question with possible multiple responses was asked in order to identify possible barriers to early utilisation of ANC. In this setting, the findings have revealed that 66% (n=257) are fearful of HIV positive results, 31% (n=122) perceived long waiting time as a barrier and 31% (n=119) perceived nurses' attitude as a barrier. The other various reasons have been included (see table 4.9).

**Table 4.9: Distribution of perceived barriers to utilization of antenatal care and prevention of mother-to-child transmission of HIV services in East Ekurhuleni sub-district as reported by pregnant women between November 2011 and January 2012**

Barriers	Frequency	Percentage
Fear of HIV positive result	257	65.9
Long waiting time	122	31.3
Nurses attitudes	119	30.5
Poor quality of care	43	11.0
Distance	42	10.8
Transport problems (accessibility)	42	10.8
Lack of money	34	8.7
Clinic availability hours (open times)	20	5.1
Limited resources	14	3.6
Fear of disclosure of pregnancy	14	3.6
laziness	6	1.5

An association between fear of disclosure of pregnancy and age ( $p < 0.05$ ) was established; mostly teenagers were fearful. For the rest of the other independent variables and age, there was no difference ( $p > 0.05$ ).

There was no association between all the three main barriers and education ( $p > 0.05$ ). Education level was not a determinant of these perceived barriers (no statistical significance).

Facilities were disaggregated to determine those who are highly affected with long waiting time as a barrier, First Avenue clinic (60%), Kwa Thema CHC (38%) whereas Phillip Moyo and Nokuthela Ngwenya had less than 15%. Cross tabulation was also done to determine if there was an association between long waiting time and facilities.

There was a statistical significance ( $p < 0.05$ ). There was no statistical significance/difference ( $p > 0.05$ ) between facilities and nurses attitudes as a barrier.

#### **4.3.9 Perceived Factors to Motivate and Encourage Early Utilization of Antenatal Care Services**

To improve ANC and PMTCT services, there was need to know what factors would motivate pregnant women to start ANC early. A close ended question with possibility of multiple responses was asked.

The findings suggested that 69% ( $n=268$ ) perceived health education to clinic attendees on the importance of starting ANC early as very crucial, 35% ( $n=136$ ) suggested improved attitude of health care workers, 31% ( $n=119$ ) suggested male involvement as they are decision makers and providers of resources, 19% ( $n=72$ ) recommended community mobilization campaigns on the subject matter, 17% ( $n=66$ ) recommended outreach clinics to cater for long distance communities and 7% ( $n=27$ ) suggested the provision of Information, Education and Communication materials.

Age was not an important determinant of perceived actions to motivate early utilization of ANC services as  $p$  values were  $> 0.05$ .

There was an association between improved attitude of HCW and the level of education. Those with junior, senior and tertiary education perceived improved attitude of HCW as a motivation compared to those with primary or no education ( $p < 0.05$ ).

#### **4.4 ANTENATAL CARE SERVICES**

This section will specify the ANC information that they received during this pregnancy; it will point out the ANC services obtained; it will indicate how they perceived the HCWs.

##### **4.4.1 Antenatal Care Information Received at Facility with Current Pregnancy**

A close ended question with possibility of multiple answers was asked to determine whether facilities are providing required ANC information to pregnant women during

ANC. The results indicated that 70% (n=274) received information on PMTCT, 53% (n=205) on infant feeding, 36% (n=139) on nutrition and supplements, 30% (n=116) on family planning and the rest as stipulated below (see table 4.10). During interviews some indicated they did not remember what they were taught.

**Table 4.10: Distribution of information received by pregnant women at facilities in East Ekurhuleni sub-district between November 2011 and January 2012**

<b>Information received</b>	<b>Frequency</b>	<b>Percentage</b>
PMTCT	274	70.3
Infant feeding	205	52.6
Nutrition and supplements	139	35.6
Family planning	116	29.7
Signs and management of complications	110	28.2
Birth plan	81	20.8
Kangaroo care	6	1.5

ANC information that was received was further distributed according to facilities to determine whether there are differences among facilities in terms of the intensity and nature of information they provide (see table 4.11)

**Table 4.11: Distribution of participants' who received antenatal care information in the facility in East Ekurhuleni sub-district between November 2011 and January 2012 (n=390)**

ANC information received	Tsakane Main clinic	Daveyton Main Clinic	Nokuthela Ngwenya CHC	Phillip Moyo CHC	Kwa Thema CHC	First Avenue Clinic	P value
PMTCT (N=274)	48	50	39	49	46	42	0.089
%	64.0	78.1	61.9	81.7	70.8	66.7	70.3
Infant feeding (N=205)	32	31	47	55	21	19	<0.05
%	42.7	48.4	74.6	91.7	32.3	30.2	52.6
Nutrition and supplements (N=139)	30	34	19	14	13	29	<0.05
%	40.0	53.1	30.2	23.3	20.0	46.0	35.6
Family planning (N=116)	24	25	18	13	16	20	<0.05
%	32.0	39.1	28.6	21.7	24.6	31.8	29.7
Signs and management of complications (N=110)	30	24	15	7	17	17	<0.05
%	40.0	37.5	23.8	11.7	26.2	27.0	28.2
Birth plan (N=81)	25	23	7	2	11	13	<0.05
%	33.3	35.9	11.1	3.3	16.9	20.6	20.8
Kangaroo care (N=6)	0	0	2	4	0	0	<0.05
%	0.0	0.0	3.2	6.7	0.0	0.0	1.5

#### 4.4.2 Antenatal Care Services Obtained with Current Pregnancy

All clinics offer a range of ANC services. An open ended question with possible multiple responses was asked to determine the known nature of services. The study's findings were that 89% (n=347) pointed out that they were offered HCT, 82% (n=319) were screened and the rest of the other services were provided as below (see table 4.12).

**Table 4.12: Distribution of antenatal care services obtained by participants in East Ekurhuleni sub-district between November 2011 to January 2012 (n=390)**

Services	Frequency	Percentage
HIV counselling and testing	347	89.0
Screening (BP, urine, HB, weight etc.)	319	81.8
Supplements	88	22.6
Vaccines	82	21.0
Physical exam	74	19.0
Tuberculosis (TB) screening	53	13.6
ARV prophylaxis/ ART	29	7.4
Unsure	3	0.8

Participants obtained similar ANC services but in different levels within the clinics, p value <0.05 on all listed dependent variables (see table 4.13)

**Table 4.13: Distribution of participants' who obtained antenatal care services in the facility in East Ekurhuleni sub-district between November 2011 and January 2012**

ANC services	Tsakan e Main clinic	Daveyton Main Clinic	Nokuthela Ngwenya CHC	Phillip Moyo CHC	Kwa Thema CHC	First Avenue Clinic	P value
HIV counselling and testing (N=347)	66	59	56	59	59	48	<0.05
%	88.0	92.2	88.9	98.3	90.8	76.2	89.0
Screening (BP, urine, HB, weight etc.) (N=319)	59	61	57	60	39	43	<0.05
%	78.7	95.3	90.5	100.0	60.0	68.3	81.8
Supplement (N=88)	29	27	10	1	3	18	<0.05
%	38.7	42.2	15.9	1.7	4.6	28.6	22.6
Vaccines (N=82)	20	25	10	0	14	13	<0.05
%	26.7	39.1	15.9	0.0	21.5	20.6	21.0
Physical exam (N=74)	26	28	4	1	7	8	<0.05
%	34.7	43.8	6.4	1.7	10.8	12.7	19.0
TB screening (N=53)	12	18	2	0	9	12	<0.05
%	16.0	28.1	3.2	0.0	13.9	19.1	13.6
ARV prophylaxis/ ART (N=29)	8	11	1	0	3	6	<0.05
%	10.7	17.2	1.6	0.0	4.6	9.5	7.4
Unsure (N=3)	1	0	2	0	0	0	<0.05
%	1.3	0.0	3.2	0.0	0.0	0.0	0.8



#### 4.4.3 Perceptions on Health Care Workers

Participants were asked a number of questions to determine how they perceive HCW in order to determine whether *Batho Pele* Principles were being achieved. The results of the combined categories are stipulated in table 4.14 and table 4.15 with individual categories. Measures of central tendency have also been included in table 4.16.

**Table 4.14: Participants' combined categories for agree and disagree on the perceptions on health care workers in East Ekurhuleni sub-district**

	<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Total</b>
a	Good attitude _ <b>AGREE</b>	262	83.4	314
b	Provided enough information about HIV and AIDS _ <b>AGREE</b>	321	89.4	359
c	Being judgemental _ <b>DISAGREE</b>	251	78.9	318
d	Make you feel comfortable _ <b>AGREE</b>	302	88.6	341
e	Ask you questions _ <b>AGREE</b>	359	95.0	378
f	Respect you _ <b>AGREE</b>	343	95.3	360
g	Assured of confidentiality _ <b>AGREE</b>	290	91.8	316
h	Privacy is maintained _ <b>AGREE</b>	219	74.7	293
i	Referred for other services _ <b>AGREE</b>	197	85.7	230
j	Assured of confidentiality _ <b>AGREE</b>	265	81.8	324
k	They know what they are doing _ <b>AGREE</b>	345	97.7	353

**Table 4.15: Participants' perceptions on health care workers in East Ekurhuleni Sub-district**

	<b>Variables (N=390)</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Undecided</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Total</b>
a	Good attitude	89	173	76	40	12	390
	%	22.8	44.4	19.5	10.3	3.1	
b	Provided enough information about HIV and AIDS	127	194	31	36	2	390
	%	32.6	49.7	8.0	9.2	0.5	
c	Being judgemental	21	46	72	194	57	390
	%	5.4	11.8	18.5	49.7	14.6	
d	Make you feel comfortable	86	216	49	33	6	390
	%	22.1	55.4	12.6	8.5	1.5	
e	Ask you questions	104	255	12	13	6	390
	%	26.7	65.4	3.1	3.3	1.5	
f	Allow you to ask questions	118	225	30	11	6	390
	%	30.3	57.7	7.7	2.8	1.5	
g	Respect you	94	196	74	21	5	390
	%	24.1	50.3	19.0	5.4	1.3	
h	Assured of confidentiality	71	148	97	65	9	390
	%	18.2	38.0	24.9	16.7	2.3	
i	Privacy is maintained	77	120	160	23	10	390
	%	19.7	30.8	41.0	5.9	2.6	
j	Referred for other services	56	209	66	48	11	390
	%	14.4	53.6	16.9	12.3	2.8	
k	They know what they are doing	117	228	37	7	1	390
	%	30	58.46	9.49	1.79	0.26	

**Table 4.16: Measures of central tendency on the perceptions on health care workers in East Ekurhuleni sub-district**

	<b>Variable (N=390 for all)</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>
a	Good attitude	2.26	1.02	2	5	1
b	Provided enough information about HIV and AIDS	1.95	0.91	2	5	1
c	Being judgemental	3.56	1.05	4	5	1
d	Make you feel comfortable	2.12	0.90	2	5	1
e	Ask you questions	1.88	0.75	2	5	1
f	Respect you	1.88	0.79	2	5	1
g	Assured of confidentiality	2.09	0.87	2	5	1
h	Privacy is maintained	2.47	1.04	2	5	1
i	Referred for other services	2.41	0.95	2	5	1
j	Assured of confidentiality	2.36	0.97	2	5	1
k	Know what they are doing	1.84	0.68	2	5	1

#### **4.5 PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV SERVICES**

This section will provide findings on PMTCT programme awareness, level of knowledge, HCT services and timing, PMTCT services awareness, knowledge on timing of ARV prophylaxis and perceived barriers to ARVs' adherence.

##### **4.5.1 Prevention of Mother-to-Child Transmission of HIV Programme Awareness**

A closed question with one response was asked to determine their knowledge of the existence of the PMTCT program. The findings from this study showed that 94%

(n=365) of the respondents were aware of the PMTCT programme and 6% (n=24) were not.

#### **4.5.2 Knowledge on Prevention of Mother-to-Child Transmission of HIV Programme**

A close ended question with possible multiple responses was asked to determine their level of knowledge on PMTCT. The results from this study showed that 88% (n=321) knew that transmission of HIV to the baby could be prevented, 60% (n=217) had knowledge on ART for PMTCT programme, 52% (n=189) knew of the feeding options, 27% (n=98) knew that HIV exposed babies needed special care, 25% (n=90) knew about nutrition and supplements for the programme and 20% (n=72) knew that partner involvement is important for implementation of the programme.

#### **4.5.3 HIV Counselling and Testing during this Pregnancy**

A close ended question with one response was asked to determine the percentage of those who were offered HCT to determine coverage. The results showed that all pregnant women (100%, n=390) were offered HCT, 98% (n=382) knew their HIV status and 2% (n=8) did not know. Those that didn't know were referred to the nurses at their facilities for further counselling, as this was a request from district management.

#### **4.5.4 Gestational age at time of HIV Counselling and Testing**

A close ended question on the gestational age at time of HCT was asked to determine if it was offered early during pregnancy. The results revealed that 60% (n=234) of the respondents were offered HCT in their second trimester, 35% (n=135) were offered in their first trimester while 5% (n=21) were offered in their third trimester.

#### **4.5.5 Awareness of Prevention of Mother-to-Child Transmission of HIV services**

This close ended question with possible multiple answers was asked to determine the level of their knowledge on PMTCT services. The findings revealed that 68% (n=266)

were aware of the PMTCT services in the facilities and 32% (n=123) were not aware of these services. Participants level of awareness of PMTCT services were different amongst facilities ( $p < 0.05$ ).

#### **4.5.6 Knowledge on Prevention of Mother-to-Child Transmission of HIV Services Offered at the Facility**

Knowledge on PMTCT services was enquired and an open ended question with possible multiple responses was used and the results were as follows (table 4.17).

**Table 4.17: Distribution of participants' prevention of mother-to-child transmission of HIV services knowledge in East Ekurhuleni sub-district (n=266)**

<b>PMTCT services</b>	<b>Frequency</b>	<b>Percentage</b>
Antiretroviral treatment to mother	192	72.2
HIV screening	160	60.2
CD4 and viral load testing	123	46.2
Antiretroviral prophylaxis to baby	81	30.5
Nutritional supplements	72	27.1

#### **4.5.7 Knowledge on Gestational Age for Initiation of Antiretroviral Prophylaxis to Pregnant Women Living with HIV**

The findings revealed that only 15 % (n=57) knew the correct time to start prophylaxis which is at 14 weeks of gestation, 36% (n=140) did not know and 4% (n=15) indicated 28 weeks.

#### **4.5.8 Perceived Barriers to Antiretroviral Drugs Adherence**

A question with possibility of multiple responses was asked to identify possible barriers to ARV drug adherence, 46% (n=181) of the respondents indicated fear of partners and family members as a barrier to ARV drugs adherence, which is part of the PMTCT/HIV programme; 34% (n=134) perceived side effects as a barrier, 31% (n=119) indicated lack of knowledge and the rest of the reasons are stipulated below (table 4.18).

**Table 4.18: Distribution of participants' by perceived barriers to antiretroviral drugs adherence in East Ekurhuleni sub-district between November 2011 and January 2012**

<b>Barriers to ARV drugs adherence</b>	<b>Frequency</b>	<b>Percentage</b>
Fear of partners and family members	181	46.4
Side effects	134	34.4
Lack of knowledge	119	30.5
Disclosure	78	20.0
Change of body	58	14.9
Fear that it might deform the baby	54	13.9
Not sure	45	11.5
Unaware of benefits	42	10.8
Stock outs in clinics	29	7.4
Stigma	19	4.9

#### **4.6 CONCLUSION**

It has been highlighted in this chapter that majority of pregnant women utilize ANC services in the second trimester. It was also noted that one of the main primary reasons to start ANC for the majority of them was to get an antenatal card which would be used for delivery purposes. They were knowledgeable of the fact that ANC services should be accessed in the first trimester. Benefits, barriers and factors that could motivate pregnant women to start ANC early were explored. PMTCT program was highlighted and HCT was offered to all the women; however, knowledge on PMTCT was limited. Some were aware of the ANC and PMTCT services being offered and perceptions on HCW were also presented.

This chapter presented the data and the next chapter will discuss the research findings.

## **CHAPTER 5**

### **DISCUSSION OF RESULTS**

#### **5.1 INTRODUCTION**

This chapter will discuss the research findings and attach meaning to them. Evidence from previous research will be examined and compared with findings of this study; conclusions will be drawn regarding the significance of the study.

#### **5.2 DATA ANALYSIS AND INTERPRETATION**

The analysis was based on the completed questionnaires from the six clinics. Epi Info version 3.5.3 was used to enter data. Descriptive statistics were used to summarise data through use of measures of central tendency and dispersion. Analytic statistics were also used to display the data by using appropriate bivariate and multivariate analyses using STATA Version 11.0 data analysis and statistical software. Most of the information obtained is presented in frequency and contingency tables. Additionally, cross tabulation was performed on some variables to determine if there was an association between the predictor variables and the response (independent and dependent) variables. The Pearson Chi-square tests were applied to contingency tables to test the significance of different proportions. Statistical significance was set at  $p < 0.05$  with a 95% confidence interval (CI).

#### **5.3 DEMOGRAPHIC DATA**

Age, marital status, educational level and number of previous pregnancies was used to determine any associations with the other variables in the discussion.

#### **5.4 ANTENATAL CARE ATTENDANCE**

##### **5.4.1 Gestational Age at Time of Antenatal Care booking for Current Pregnancy**

Women are recommended to start ANC in their first trimester of pregnancy according to both BANC and PMTCT guidelines. Despite that these services are free, women start

ANC late in pregnancy. DHIS data for 2009 and 2010 indicated that less than 30% of pregnant women attended ANC services before 20 weeks of gestation in East Ekurhuleni district, and similar results are documented nationally. In this study, most pregnant women (63%) started ANC in second trimester of gestation and only 31% started in the first trimester. The findings of this study support earlier findings and prior knowledge that women start ANC late. Those who started ANC in third trimester (6%) did not benefit much from both ANC and PMTCT programmes. Those diagnosed with HIV would receive ARV prophylaxis for a few weeks or days and if in advanced disease their chances of transmitting the virus to the unborn baby were much higher. Comparison between multigravidas and primigravidas on the time they started ANC showed no difference as the same trend was prevalent in primigravidas. There is an assumption that women would attend ANC early in their first pregnancy because they are less knowledgeable on how to manage the pregnancy. To determine if there was an association between gestational age at time of antenatal booking and number of pregnancies; the p values were  $>0.05$  indicating that there was no association. Most women are not decision makers as they depend on their partners, parents and in laws on when to start ANC.

#### **5.4.2 Primary Reasons for Starting Antenatal Care at Stated Trimester**

A qualitative study done in Hlabisa district in KZN indicated that most women's primary reason for seeking ANC was to receive an ANC attendance card that is required to deliver at a health facility (Myer *et al.* 2003). In this study most of the women attended ANC to get an antenatal card for delivery usage (29%; n=114). These findings correspond with the earlier study as women do not perceive significant health threats during pregnancy but perceive labour and delivery as time of significant health risk that require biomedical attention (Myer *et al.* 2003). The family structure also played a major role as 25% (n=96) were encouraged by family members and friends to start ANC. The system has to develop awareness campaigns to sensitise and educate the community at large as they form part of the decision making.

The results of those who started ANC in their third trimester revealed that 48% (n=11) out of (n=23) wanted an antenatal card for delivery usage. Cross tabulation was done for this group to determine the relationship between gestational age and getting an



antenatal card for delivery usage. There was a significant association between these two variables ( $p < 0.05$ ); meaning that most women who start ANC very late just want an antenatal card as it is a prerequisite to deliver at a health facility. For those who started in the first trimester ( $n=122$ ) 38 of them (31%) wanted to confirm pregnancy and on cross tabulation, there was an association ( $p < 0.05$ ) meaning that confirmation of pregnancy is most apparent in first trimester.

#### **5.4.3 Perceived General Reasons for Antenatal Care Attendance**

On the generalised reasons for ANC attendance, 65% of the respondents indicated HCT as one of the main reasons for pregnant women to start ANC early. This was noble as it is a key component to the PMTCT programme implementation, however the use of ARV prophylaxis was not perceived to be very important as it was only specified by 9% of the participants. This indicates that their level of knowledge on the PMTCT programme is limited and they couldn't link the two variables.

Cross tabulation was done to all variables to determine the relationships. There was an association between identification and prevention of complications and age; as well as getting ARV prophylaxis and age as  $p$  values were  $< 0.05$ . This means that all women despite their age group found these two variables relevant for ANC attendance. However, parity may be a confounding factor (see table 4.6).

#### **5.4.4 Perception of the Best Time to Start Antenatal Care**

Majority ( $n=329;84\%$ ) of the respondents indicated first trimester as the best time to start ANC which is in line with the BANC and PMTCT guidelines. The prioritisation of their reasons for ANC during the perceived best time is different from the reasons why they started ANC with their current pregnancies, as well as different from the generalised reasons for ANC. This means that their knowledge and behaviour are different. This might be linked to some of the barriers to early utilisation of ANC services which were explored in this study and will be discussed later in this chapter. Getting antenatal card for delivery use, which has been a priority for most pregnant women for their current attendance, was at 20% ( $n=76$ ) and 55% ( $n=213$ ) indicated early HIV diagnosis presumably because of the information they have acquired from ANC.

#### **5.4.5 Antenatal Care Information Accessed before Pregnancy**

Just above half of the women accessed ANC information before pregnancy (56%; n=219) and 44% (n=171) did not. One of the major sources was IEC material (54%) hence facilities were disaggregated to determine their distribution levels and Tsakane clinic was leading with 76%. There might be lessons to be learnt. Family members and friends played a major role as they provided ANC information to 32% of the participants. The most common content was on HIV screening and treatment (n=150; 39%). This result supports the HCT campaigns which have been mandated in all facilities in East Ekurhuleni sub-district which incorporates PMTCT IEC materials.

#### **5.4.6 Perceived Benefits to Utilization of Antenatal Services within the First Trimester of Pregnancy**

Apart from other ANC services like confirmation of pregnancy, early detection of complications, provision of supplements and vitamins, foetal growth monitoring, vaccination; literature has revealed crucial benefits linked to PMTCT services. Mulekya (2006) indicated that the improvement of maternal and child health is dependent on early HIV testing for pregnant women. Strode *et al.* (2005) indicated that early testing is crucial as HIV positive women need special care and support during pregnancy. It also benefits the communities as it reduces denial, stigma and discrimination because it encourages women to disclose their HIV testing experience and sero-status (UNICEF 2003). The following were prioritized as more beneficial; 62% (n=242) indicated that early HIV diagnosis is very crucial and it was in line with recommended guideline; 57% (n=224) saw early diagnosis of complications beneficial and 39% (n=153) indicated acquiring more knowledge on care of pregnancy as beneficial (see table 4.8). The findings from this study support the literature above. However there is limited knowledge around use of ARV drugs as it was seen as less important. This is due to limited PMTCT knowledge.

Cross tabulation was done to determine any association between all dependent variables and age. Age was not a determinant variable on all dependent variables (p values >0.05) hence no statistical significance. However, there was an association

between education and use of ARVs as those with secondary and tertiary education envisioning prolonged time for ARV treatment as beneficial compared to those with primary or no education; statistical significance  $p < 0.05$  (see figure 4.2). This means that those who are educated understand the importance of prolonged use of ARVs during pregnancy than those less educated or without education.

#### **5.4.7 Perceived Barriers to Utilization of Antenatal Care and Prevention of Mother-to-Child Transmission of HIV Services**

Despite the perceived benefits; literature has revealed barriers to utilization of ANC and PMTCT services. Ugandan Daily Monitor (2009) reported that a study done by Future Health Systems RPC found that 62% of Ugandan women attended four ANC visits, but the main factors affecting utilization were transport costs, informal fees, demands for requirements such as gloves and poor attitude of the providers. Linda (2010) reported that many women in Kenya's Western Nyanza province said that pre-natal HIV testing was a direct threat to their marriages; and more than one ANC visit was found unnecessary in Hlabisa district of KZN province (Myer *et al.* 2003). Stigma and discrimination remain two of the most challenging barriers to implementation of HIV programmes, especially for women (Gruskin *et al.* 2008). A study done by Rogers *et al.* (2006) revealed that although 85% expressed willingness to HCT, more were concerned about confidentiality and disclosing their HIV status because of fear of negative reactions from their partners, parents, family members and their community.

In this setting, the findings have revealed that 66% (n=257) are fearful of HIV positive results which supports earlier findings, 31% (n=122) perceived long waiting time as a barrier and 31% (n=119) perceived nurses' attitude as a barrier supporting Ugandan Daily Monitor (2009) report. Both HCW's attitudes and waiting times are amongst the six priority areas that are being fast tracked for quality in the country. They fall under the first national core standards' domain one; namely patient rights. These two elements, including four others have been identified as the most pressing concerns regarding service delivery, especially in the public sector (DOH 2011). Other barriers include poor quality of care, distance, transport problems, lack of money, clinic availability hours, limited resources, fear of disclosure of pregnancy and laziness (see table 4.9). These results support the findings of earlier studies in other settings as described above.

Cross tabulation was done and an association between fear of disclosure of pregnancy and age was established ( $p < 0.05$ ); most teenagers were fearful of parents, family and friends as they are still in school whereas the older women did not have reasons not to disclose their pregnancy. For the rest of the other independent variables and age; there was no difference ( $p > 0.05$ ). There was also no association between all the three main barriers and education ( $p > 0.05$ ) (see table 4.9). Education level was not a determinant of these perceived barriers (no statistical significance).

Facilities were disaggregated to determine those who are highly affected with long waiting time as a barrier, First Avenue clinic (60%), Kwa Thema CHC (38%) whereas Phillip Moyo and Nokuthela Ngwenya had less than 15%. Cross tabulation was also done to determine if there is an association between long waiting time and facilities. There was a statistical significance ( $p < 0.05$ ) meaning there are differences from one facility to the other on how participants envision this as a barrier. Although there was no statistical significance/ difference ( $P > 0.05$ ) between facilities and nurses attitudes as a barrier, it is worth noting that 45% of participants from Daveyton main clinic indicated nurses' attitudes as a barrier.

#### **5.4.8 Perceived Factors to Motivate and Encourage Early Utilization of Antenatal Care Services**

The findings from this study support DHIS data as 69% started ANC late. However; this study has also revealed that 84% ( $n=329$ ) of the respondents perceived first trimester of pregnancy to be the best time to start ANC. Despite this knowledge, their practice is different as only 31% ( $n=122$ ) started in the first trimester.

The findings on motivating factors revealed that 69% ( $n=268$ ) perceived health education to clinic attendees as very crucial. This would address different categories of people from the community which would include the decision makers; 35% ( $n=136$ ) suggested improved attitude of health care workers as it was stipulated as a barrier; 31% ( $n=119$ ) suggested male involvement as they are decision makers and providers of resources; 19% ( $n=72$ ) recommended community mobilization campaigns on the subject matter; 17% ( $n=66$ ) recommended outreach clinics to cater for long distance communities and reduce waiting times; and 7% ( $n=27$ ) suggested the provision of IEC

materials. Although majority accessed IEC material before pregnancy they did not find it as a motivation to start ANC early. These factors are achievable at facility level as all these form part of the DOH primary health care package.

Cross tabulation was done and age was not an important determinant of perceived factors to motivate early utilization of ANC and PMTCT services as p values were  $>0.05$ . However, there was an association between improved attitude of HCW and the level of education. Those with junior, senior and tertiary education perceived improved attitude of HCW as a motivation compared to those with primary or no education. There were also differences between facilities on improved HCW's attitudes, male involvement, community mobilisation and IEC material as motivations for early utilization of ANC and PMTCT services ( $p<0.05$ ). This means that participants from different clinics prioritised these variables differently according to their circumstances.

## **5.5 ANTENATAL CARE SERVICES**

### **5.5.1 ANC Information Received at Facility with Current Pregnancy**

Every clinic offers ANC information to pregnant women through health education, counselling and IEC material. The results indicated that 70% (n=274) received information on PMTCT; 53% (n=205) on infant feeding; 36% (n=139) on nutrition and supplements, 30% (n=116) on family planning and the rest as stipulated (see table 4.10). During interviews some indicated they did not remember what they were taught. Perhaps the facilities should engage patients in health education by promoting active participation and one on one session where questions could be asked to determine the level of knowledge. However this is a challenge due to HCW high workload.

Statistical differences were established between the above variables and facilities ( $p<0.05$ ), except PMTCT; meaning facilities are engaged with their clients at different levels except PMTCT where there are similarities ( $p>0.05$ ). For example, on educating pregnant women on infant feeding; Phillip Moyo CHC did well (92%), Nokuthela Ngwenya CHC (74.6%) and First Avenue clinic with less than 30%. It is imperative that these activities should be well coordinated in all clinics. The good news is that PMTCT

is a priority education programme for all facilities and they are doing well however improvement is required on educating mothers on the importance of ARV drug usage.

### **5.5.2 Antenatal Care Services Obtained with Current Pregnancy**

All clinics are offering services as stipulated in table 4.12. On cross tabulation there were differences between facilities and all the listed dependent variables. Participants obtained similar ANC services but in different levels within the clinics (table 4.13). Statistical significance was at p value <0.05. It is however alarming to note that only 19% indicated that they had a physical exam.

### **5.5.3 Perceptions on Health Care Workers**

With government emphasis on the implementation of the National Core Standards, it is important to know that the principles of *Batho Pele* or “people first” have encapsulated the values of public service. The patient Rights Charter stipulates the responsibilities of health facilities in delivering care to meet the principles. Patient rights is the first domain, and it includes respect and dignity, information to patients, physical access, continuity of care, reducing delays in care, emergency care, access to package of services and complaints management. The results of the combined categories showed that the HCW are meeting the *Batho Pele* principles (tables 4.14; 4.15). Although the results were good; it must be noted that some respondents were undecided on some key variables. This might indicate a negative notion since privacy had 41% (n=160); confidentiality 25% (n=97); referral for other services 17% (n=77); respect 19% (n=74); being judgemental 19% (n=72) and good attitude 20% (n=76) who were undecided (see table 4.15).

## **5.6 PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV SERVICES**

### **5.6.1 Prevention of Mother-to-Child Transmission of HIV Programme Awareness**

A study conducted in India by Rogers *et al.* (2006) revealed that at least 94% of the 202 women who participated in the survey had heard about HIV and AIDS, and 60% of them had relatively good knowledge regarding risk factors for HIV transmission. However,

almost half of the women (48%) had no knowledge, or rather did not know that there were means to prevent MTCT. In this study, the good news is that 94% (n=365) of the respondents were aware of the PMTCT programme and 6% (n=24) were not. This means that the women are informed at the clinics and are made aware of PMTCT services.

### **5.6.2 Knowledge on Prevention of Mother-to-Child Transmission of HIV Programme**

A study by Bajunirwe *et al.* (2005) in Uganda revealed that women had relatively high knowledge of PMTCT. However, women in rural areas had a tendency to think that they should consult their husbands before accepting an HIV test during pregnancy. The results of this study reflect similar findings with a study conducted in Northern Nigeria (Iliyasu *et al.* 2006) where knowledge of HIV and AIDS was adequate among the mothers but misconceptions, fear, gaps in knowledge and limited access to quality counselling remained prevalent, which ultimately affected early ANC and PMTCT services utilization among pregnant women. The results in this study indicate that the women are aware of the programme but still have limited knowledge.

### **5.6.3 HIV Counselling and Testing during this Pregnancy**

The PMTCT guidelines recommend that all pregnant women should be offered HCT, and they should know their status within the first trimester of pregnancy. This is imperative as HIV positive women would be initiated on ARV prophylaxis earlier in pregnancy. The guidelines stipulate that prophylaxis should commence at 14 weeks of gestation (thus the first week of the second trimester). Those eligible for long life ART should be initiated immediately (DOH 2010). The study findings support the guidelines as all pregnant women were offered HCT.

### **5.6.4 Gestational Age at Time of HIV Counselling and Testing**

The results in this study support the gestational age when these respondents started ANC. This means that the HCW followed the guidelines by offering HCT on the first day of the ANC visit. The minor difference observed would be the fact that some

respondents were offered HCT by their private doctors before starting ANC. These results have also suggested that acceptance of HIV testing by the women depended on their perception that it would provide clear benefits to their unborn children. It also suggested that the quality of counselling was good; it might also suggest that HIV testing is a routine (compulsory) procedure for PMTCT programme as narrated by women from Kenya's Western Nyanza province (Linda 2010).

#### **5.6.5 Awareness of Prevention of Mother-to-Child Transmission of HIV Services**

The majority of the respondents (98%) accepted HCT and knew their HIV status; however, it is crucial to establish if they are aware of the services that are offered to HIV positive pregnant women within the facilities. There is a gap on knowledge of PMTCT services.

#### **5.6.6 Knowledge on Prevention of Mother-to-Child Transmission of HIV Services Offered at the Facility**

A study in Nigeria by Fasubaa (2001) revealed that there was high acceptance rate of HIV testing among pregnant women who were knowledgeable about the HIV disease. This element was looking at their knowledge on the available PMTCT services. The results revealed that 72% (n=192) knew about ART given to the mother; 60% (n=160) knew about HCT; 46% (n=123) knew about CD4 and viral load testing; 31% (n=81) knew about ARV prophylaxis given to baby; 27% (n=72) knew about nutritional supplements (see table 4.43). The findings have concluded that the respondents have limited knowledge on PMTCT services as higher percentages were expected. On cross tabulation, the facilities were segregated and participants' level of awareness of PMTCT services were different amongst facilities ( $p < 0.05$ ) meaning they were given information at different levels.

#### **5.6.7 Knowledge on Gestational Age for Initiation of Antiretroviral Prophylaxis to Pregnant Women Living with HIV**

According to the PMTCT guidelines, HIV pregnant women should start ARV prophylaxis at 14 weeks gestation, and this information should be well known to pregnant women



attending ANC. The findings revealed that only 15% (n=57) knew the correct time to start prophylaxis which is at 14 weeks of gestation, 36% (n=140) did not know and 4% (n=15) indicated 28 weeks. Twenty eight weeks was appropriate for the old PMTCT guidelines of 2008. It is worthy noticing that majority stipulated ARV prophylaxis to be initiated during first or second trimester although they didn't clearly knew that it was at 14 weeks gestation. This means that they are aware that these drugs should be initiated early. Those who specified the correct response which is 14 weeks of gestation; most were from Daveyton main (25 respondents), 23 from Tsakane, 6 from Nokuthela Ngwenya, and the rest of the facilities had 1 respondent each.

### **5.6.8 Perceived Barriers to Antiretroviral Drugs Adherence**

A study conducted by Rogers *et al.*(2006) revealed that over 85% expressed willingness to HIV testing but most were concerned about confidentiality and disclosing their HIV status. They stated fear of negative reactions from their partners, parents, family members and the community, as reasons for their concerns. Gruskin *et al.* (2008) indicated that women are more likely to experience stigma and discrimination, and these remain two of the most challenging barriers to implement HIV programmes. The results of this study support the findings of the earlier studies as 46% (n=181) of the respondents indicated fear of partners and family members as a barrier to ARV drugs adherence which is part of the PMTCT/HIV programme; 34% (n=134) perceived side effects as a barrier and 31% (n=119) indicated lack of knowledge (see table 4.18).

## **5.7 CONCLUSION**

The discussions in this chapter were centred on the crucial findings. Majority of pregnant women utilize ANC services in the second trimester which is late for successful implementation of both BANC and PMTCT guidelines. It was also noted that one of the main primary reasons to start ANC for the majority of them was to get an antenatal card which would be used for delivery purposes. They were knowledgeable of the fact that ANC services should be accessed in the first trimester; however, their practice was different. Benefits, barriers and actions for motivation were discussed. PMTCT programme was highlighted and HCT was offered to all the women; however,

knowledge on PMTCT was limited. Some were aware of the ANC and PMTCT services being offered. Perceptions on HCW were discussed.

The next chapter will present the conclusions, limitations and recommendations of this study, as well as proposed areas for future studies.

## **CHAPTER 6**

### **CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS**

#### **6.1 INTRODUCTION**

This chapter discusses the conclusions, limitations and recommendations for this study. The study sample consisted of 390 pregnant women. The mean age of the participants was 26 years (SD 5.6). The median was 25 years suggesting the age distribution of the participants was not normally distributed. Majority had attained some education and most of them started ANC in their second trimester of gestation.

The main purpose of this study was to determine if ANC and PMTCT services were utilized within the first trimester of pregnancy by the women in East Ekurhuleni sub-district in Gauteng province, South Africa. The study also explored on actions that would motivate women to start ANC within the first trimester of pregnancy, and how issues of knowledge or awareness affect their decision to utilize ANC and PMTCT services. The conclusions, based on the research results discussed in chapter 5 of this dissertation, will be used to answer the research question which was formulated in chapter 1 as follows:

- Are ANC and PMTCT services utilized within the first trimester of pregnancy by the women in East Ekurhuleni sub-district in South Africa?

The study results have revealed that the majority of the women start ANC in their second trimester (63%; n=245) which is late for the implementation of both BANC and PMTCT guidelines.

#### **6.1.1 Conclusions on the Objectives**

The objectives of the study were evaluated to determine whether they have been attained. Each objective will be listed, and the conclusions will be made in relation to that specific objective:

- Determine factors that motivated pregnant women to utilize ANC and PMTCT services within the first trimester of pregnancy.

The findings suggested that 69% (n=268) perceived health education to the clinic attendees as very important. Participants suggested health education to include information on the importance of starting ANC early and information on PMTCT programme. Thirty five percent (n=136) suggested improved attitudes of HCWs. Some participants indicated that the nurses have bad attitude, which makes it difficult for them to come for ANC early as they want to feel respected and dignified. Thirty one percent (n=119) suggested male involvement as they are decision makers who provide necessary resources. This would promote couple counselling, which means the nurses would give feedback to both and avoid fear associated with disclosure issues. Nineteen percent (n=72) recommended community mobilization campaigns. This would sensitize the communities on the reasons for early ANC, PMTCT programme and its services. This is crucial as families are involved in decision making during pregnancy. Seventeen percent (n=66) recommended outreach clinics. These would cater for long distance communities and informal settlements. Seven percent (n=27) suggested provision of IEC materials. These are available at clinics in different languages, and they need to be distributed to the clinic attendees and the community at large.

- Generate information about pregnant women's awareness of ANC and PMTCT services.

Women were aware of ANC and PMTCT services. Despite this awareness; they had limited knowledge on the programmes especially PMTCT. The majority (89%; n=347) indicated HCT, 82% (n=319) indicated screening which includes BP monitoring, urine tests, blood tests and weight monitoring; 23% (n=88) indicated supplements which includes vitamins; 21% (n=82) indicated vaccines, 19% (n=74) indicated physical exam, 14% (n=53) TB screening, 7% (n=29) ARV prophylaxis, and 1% (n=3) was unsure of the services obtained at the facility; 72% (n=192) were aware that HIV positive pregnant women receive ARV treatment, 46% (n=123) indicated CD4 and viral load testing, 31% (n=81) indicated ARV prophylaxis for babies and 27% (n=72) indicated nutritional supplements.

- Identify possible barriers to early utilization of ANC and PMTCT services in the chosen sub-district.

The pregnant women identified barriers that prevented them to start ANC within the first trimester of pregnancy; 66% (n=257) specified fear of an HIV-positive result as a barrier. Having limited knowledge on HIV management contributes to this fear because, if they were well informed of the benefits, they would want to test immediately and prevent MTCT; 31% (n=122) perceived long waiting time as a barrier. This is because of nurse patient ratio issues, meaning fewer staff to offer the services. Most of the public facilities are short staffed and contributes to long waiting time. Sometimes it is associated with poor processes within the facilities. Thirty one percent (n=119) perceived nurses attitudes as a barrier. Both HCWs attitudes and waiting times are being fast tracked for quality purposes in the country. There are among the six most pressing concerns regarding services especially in the public sector. Other barriers included poor quality of care, distance, transport problems, lack of money, clinic availability hours (open times), limited resources, fear of disclosure of pregnancy and laziness.

## **6.2 CONCLUSIONS BASED ON THE HEALTH BELIEF MODEL TENETS**

Several conclusions have been made in this study based on the research results that were analysed in chapter 4. These findings have been contextualised within the HBM's tenets.

### **6.2.1 Perceived Susceptibility**

The findings of this study suggested that most pregnant women perceived themselves and their unborn children at risk of contracting HIV infection. This is evident as 98% (n=382) knew their HIV status after they were offered HCT. This might also suggest that the women tested because it was the providers who initiated HCT and not voluntary HCT as it used to be, considering their fear of HIV positive results. However, this rate of testing is in line with the PMTCT and BANC guidelines.

### **6.2.2 Perceived Severity**

Pregnant women do not comprehend the consequences of attending ANC late. The results showed that the majority of the women booked for ANC late, including those with previous pregnancies.

### **6.2.3 Perceived Benefits**

The women perceived ANC utilization as beneficial as they were able to relate to the services they obtained at the facilities. The mere fact that they came for ANC expressed the importance they attached to these services.

### **6.2.4 Perceived Barriers**

Pregnant women perceived some barriers that prevented them from starting ANC within the first trimester of pregnancy. These have been discussed under the objectives.

### **6.2.5 Cues to Action**

Pregnant women perceived the first trimester as the best time to start ANC. Their awareness and practice were different as they started ANC late. However, they suggested several interventions that would motivate them to start ANC early. Having the suggested measures in place would encourage them to start ANC early.

### **6.2 .6 Self-Efficacy**

Despite that the majority of the pregnant women feared the result of their HIV test, they still came for ANC (took action). Having the knowledge that ANC is important motivated them to come for the services, despite their fears.

## **6.3 LIMITATIONS OF THE STUBY**

### **Limitations of the Methods Used**

This study was conducted in the six targeted fixed health facilities in East Ekurhuleni sub-district in Gauteng province. These facilities were initially stratified according to towns then they were purposively selected due to high number of ANC attendees. Each town had a minimum of one facility chosen. It was not possible for the researcher to conduct the study in all the 29 fixed clinics due to time and financial constraints. The participants were not randomly selected due to less numbers at the facilities. All eligible participants were included in the study. This could have resulted in selection bias. Information bias could have occurred because the questionnaire had a list of alternative responses to be selected by the participant. Confounding factors could have applied considering the nature of the methods used.

### **Limitation of the Findings**

Due to the nature of the methods used, the results of this study cannot be generalised in the entire province, or region. However, they could be locally generalised for the East Ekurhuleni sub-district.

Another limitation was the fact that the respondents were pregnant women and the subject matter included HIV, which is a sensitive subject. Hence, participants could have provided less detailed information.

### **6.4 RECOMMENDATIONS**

Based on the findings of this study, the following recommendations are made which could be implemented to promote the early utilization of ANC and PMTCT services.

- The DOH should promote facilities to conduct self-assessments on the National Core Standards so that they are able to identify gaps and decide on strategies for improvement i.e. nurses attitudes, waiting times and quality of care as these standards will assist facilities to improve on the barriers identified in this study.
- Customer satisfaction surveys should be conducted timely at facilities to identify areas for improvement.

- The DOH should conduct community mobilisation campaigns to sensitize communities on ANC and PMTCT programmes.
- The DOH should recruit more nurses and other HCWs in order to adhere to the recommended nurse patient ratio. This will reduce the waiting time.
- The DOH should provide debriefing sessions to the HCWs so that they can be able to deal with the challenges they face on a daily basis, as well as deal with their personal issues and improve their attitudes.
- The DOH should provide mobile clinics for hard to reach populations and offer clinic services including ANC. This could be done in partnership with other private organisations and NGOs that are already doing similar work.
- The SAG should use mass campaign media to provide information on the importance of starting ANC early, and also on PMTCT programme e.g. through the use of community radio stations, TV, newsletters, bill boards etc.
- The consumers/patients should be involved in quality improvement initiatives within facilities. This will promote transparency and feedback to their communities.
- IEC materials on ANC and PMTCT should be provided not only to clinic attendees, but also to the communities by identifying strategic places and events where the health promotion team can distribute e.g. tax ranks, *imbizos*, companies, schools, etc.
- The DOH should find strategies to involve men in the ANC clinics. The services should be friendly to promote their engagement. This is crucial as they are decision makers. Lessons learnt from other African countries could be used.
- PMTCT and BANC guidelines should be made available to the general public.



- Capacity building to HCW i.e. on-going training, mentoring and coaching of HCW on BANC and PMTCT services including the guidelines. Sensitizing the community HCW on these subjects so that they can include it in their field curriculum.

## **6.5 RECOMMENDATIONS FOR FURTHER STUDIES**

The findings of this study suggest that future researchers could investigate the following

- Duplicate this study in other districts and provinces prior to generalisation of these research findings.
- Investigate the role of male partners in motivating pregnant women to start ANC.
- Investigate the knowledge level of HCW on ANC and PMTCT services.
- Investigate the feasibility of BANC and PMTCT guidelines in the South African setting.
- Explore how men could best be involved in maternal and child health programmes.
- Explore social behaviour issues that influence women to start ANC late.
- Qualitative research on lived experiences of utilizing ANC and PMTCT services.

## **6.6 FINAL CONCLUDING REMARKS**

The importance of utilizing ANC and PMTCT services within the first trimester of pregnancy cannot be understated in the fight to prevent and eliminate HIV transmission to unborn children. This benefit is not for the unborn children alone, but also for the proper management of the women who happen to be infected with the virus; the community at large as there would be less IMR and MMR since most of these deaths are associated with HIV. The fundamental nature of this study would be best summarised by the National DOH PMTCT steering committee theme of “ Moving

Towards No Child with HIV by 2015 in South Africa and Keeping Mothers Alive and Healthy” (DOH 2011).

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**ANNEXURE A**

**UNIVERSITY OF SOUTH AFRICA  
Health Studies Higher Degrees Committee  
(HSHDC)  
College of Human Sciences  
ETHICAL CLEARANCE CERTIFICATE**

Date of meeting: 24 August 2011 Project No: 4337-701-7

Project Title: Utilization of antenatal care services in East Ekurhuleni sub-district,  
Gauteng province in South Africa

Researcher: Ms MF Tshabalala

Degree: Masters in Public Health Code: DIS4986

Supervisor: Dr Mathilda Mokgatle-Nthabu  
Qualification: D Litt et Phil  
Joint Supervisor:

**DECISION OF COMMITTEE**

Approved

Conditionally Approved

*E Potgieter*  
**Prof E Potgieter**  
**CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE**

*M Bezuidenhout*  
**Prof MC Bezuidenhout**  
**ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES**

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES



**ANNEXURE B:**

**A LETTER TO THE DEPARTMENT OF HEALTH TO REQUEST AUTHORISATION  
TO CONDUCT A STUDY IN EASTERN EKURHULENI SUB-DISTRICT IN GAUTENG**

Date written: 01 July, 2011

Date Submitted: 13<sup>th</sup> September, 2011

From: Maureen F Tshabalala  
32 Swartpiek  
Birch Acres ext 3  
Kempton Park 1618

To: The Department of Health

Dear Sir/Madam,

**Application for Clearance to Conduct a Research Project**

I am student number 43377017 of University of South Africa pursuing a Master of Arts Degree in Public Health. Every student is required to submit a research dissertation at the end of this programme. I would like to conduct a research study in Eastern Ekurhuleni sub-district in Gauteng province. The proposed study is titled "Utilization of antenatal care services in East Ekurhuleni sub-district, Gauteng province in South Africa."

I would like to conduct the study in six health facilities namely Tsakane main clinic, Daveyton Main clinic, Phillip Moyo Community Health Centre, First Avenue clinic, Kwa Thema Community Health Centre and Nokuthela Ngwenya Community Health Centre.

I am writing to seek your permission to conduct this research. I intend to collect the data between October 2011 and January 2012. I and a team of two interviewers will collect the data by visiting the sites and conducting the interviews. This will be done to ensure privacy and confidentiality of the data obtained and no names or identification numbers will be given to the participants to maintain anonymity. These interviews will not risk the health of the patients and no interventions will be implemented. The results will be presented to the Department at a recommended forum.

If you have any questions concerning the study, you can contact me on 082 224 9924 or the UNISA school of Public Health on 012 429 6290.

Your consideration will highly be appreciated.

Yours faithfully,



**Maureen Fatsani Tshabalala (Mrs)**

**ANNEXURE C****A LETTER TO THE CLINIC SUPERVISORS AND MANAGERS ON A RESEARCH PROJECT THAT WILL BE CONDUCTED IN EASTERN EKURHULENI SUB-DISTRICT IN GAUTENG****Date:** 16<sup>th</sup> November, 2011**From:** Maureen F Tshabalala, 32 Swartpiek St,  
Birch Acres ext 3, Kempton Park 1618**To:** Clinic Supervisors and Clinic Managers for East Ekurhuleni Sub-district:

Dear Sir/Madam,

**Research Project on Utilization of antenatal care and PMTCT services in East Ekurhuleni Sub-district**

My name is Mrs Maureen Fatsani Tshabalala and I had been working in East Ekurhuleni from May 2008 as a Programme Officer from Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) and from 2009 as a Quality Improvement Manager and assisted the sub-district with Quality Improvement initiatives until the PEPFAR re-alignment of districts amongst PEPFAR funded organizations when EGPAF moved out of the district early 2011. Currently I am also a student at University of South Africa (UNISA) pursuing a Master of Arts Degree in Public Health. Every student is required to submit a research dissertation at the end of this programme. My research study will be conducted in Eastern Ekurhuleni sub-district in Gauteng province and is titled "Utilization of antenatal care and PMTCT services in East Ekurhuleni sub-district, Gauteng Province, South Africa."

The study will be conducted in six health facilities namely Tsakane, Daveyton and First Avenue Clinics; and Phillip Moyo, Kwa Thema and Nokuthela Ngwenya Community Health Centres. Permission to conduct this research has been granted by UNISA and Ekurhuleni district.

I intend to collect the data between November 2011 and January 2012 and I will be assisted by two field workers who will be introduced to you. We will collect the data using questionnaires by visiting the sites and conducting the interviews on pregnant women on subsequent visits. To ensure privacy and confidentiality we would need a separate room or area and no names or identification numbers will be used to maintain anonymity. The district has requested that we refer to the nurses any pregnant woman who hasn't been offered HIV Counselling and Testing (HCT) or has unknown status. We will conduct these interviews early while they are still waiting on the line/queue to be consulted and all pregnant women on subsequent visits will be included in the sample and informed consent will be obtained. The questionnaire will take at least a maximum of 15 minutes.

A pilot study will be done at clinics not mentioned above to test the questionnaire. The findings from this study will be presented to Ekurhuleni District at a forum that will be recommended by the district.

Your consideration will highly be appreciated.

Yours faithfully,

**Maureen Fatsani Tshabalala (Mrs)**

**ANNEXURE D**

## RESEARCH ETHICS CLEARANCE CERTIFICATE

**Research Project Title: UTILIZATION OF ANTENATAL CARE SERVICES IN EAST EKURHULENI SUB-DISTRICT, GAUTENG PROVINCE IN SOUTH AFRICA**

**Research Project Number: 26/10//2011-3**

**Name of Researcher(s): Ms. Maureen Fatsani Tshabalala**

**Division/Institution/Company: UNISA**

**DECISION TAKEN BY THE EKURHULENI HEALTH DISTRICT ETHICS PANEL (EHDEP)**

- THIS DOCUMENT CERTIFIES THAT THE ABOVE RESEARCH PROJECT HAS BEEN FULLY APPROVED BY THE EHDEP. THE RESEARCHER(S) MAY THEREFORE COMMENCE WITH THE INTENDED RESEARCH PROJECT.
- NOTE THAT THE RESEARCHER WILL BE EXPECTED TO PRESENT THE RESEARCH FINDINGS OF THE PROPOSED RESEARCH PROJECT AT THE ANNUAL EKURHULENI RESEARCH CONFERENCE HELD IN JULY/AUGUST.
- THE ETHICS PANEL WISHES THE RESEARCHER(S) THE BEST OF SUCCESS.

*Vutale Mlungwana*  
 RESEARCH COORDINATOR: EKURHULENI METROPOLITAN MUNICIPALITY

Dated: 15/11/2011

*DR J. SEPUYA*  
 DEPUTY CHAIRPERSON: EKURHULENI METROPOLITAN MUNICIPALITY

Dated: 15/11/2011

*Dr. R. Kelleman*  
 CHAIRPERSON: GAUTENG DEPARTMENT OF HEALTH (EKURHULENI REGION)

Dated: 15/11/2011

## **ANNEXURE E**

### **INFORMED CONSENT FORM**

**Name of Study: “Utilization of Antenatal Care (ANC) and Prevention of Mother-to-child Transmission of HIV (PMTCT) services in East Ekurhuleni sub-district, Gauteng province, South Africa.”**

This informed consent form is for pregnant women who are attending antenatal care services in publicly funded facilities in Eastern Ekurhuleni sub-district, Gauteng Province namely Tsakane, Daveyton main and First Avenue clinics; Phillip Moyo, Kwa Thema and Nokuthela Ngwenya community health centres.

**Main investigator: Mrs Maureen Fatsani Tshabalala**

This informed consent contains an information sheet which provides information related to the study (e.g., purpose, method, procedures, risks and benefits, etc) and the nature of the involvement of prospective participants. Its second part is a certificate of consent, which should be signed by eligible participants who participate to the study as well as by a witness and by the researcher.

#### **PART I: THE INFORMATION SHEET**

Dear participant,

My name is Mrs Maureen F Tshabalala, student number 43377017 pursuing my Master of Arts Degree in Public Health with University of South Africa (UNISA). The purpose of this letter is to request your permission to participate in the study mentioned above. The study is a requirement in fulfilment of my studies. The results are also expected to add vital information on antenatal care services which includes prevention of mother-to-child transmission of HIV (PMTCT) programme for HIV positive women. This study was approved by the UNISA Ethical Committee in September 2011 and by the district in November 2011.

Most South Africa women start antenatal care after 20 weeks of gestation (late), and antenatal care forms the basis for PMTCT programme for HIV positive women. The purpose of this study is to determine if antenatal care services are utilized early in East Ekurhuleni sub-districts in Gauteng province.

Before going forward, let me make it clear that:

- a) This study is not part of your routine antenatal care.
- b) Your participation to this study is voluntary. No-one should force you to participate or threaten you that you may not receive your antenatal care services as before because you refused to take part to this study. You can refuse to participate. You can also decide to withdraw at any time, even after you have signed the certificate of consent.
- c) The results of this study will be used for scientific purpose and may be published.
- d) Because you are currently pregnant and attending antenatal care; that is why you are asked to participate in this study.

What am I going to do during this study? I am going to ask you questions related to yourself and antenatal care services. All these information will be kept confidential and no one in our team will expose information received from every participant to people who should not see them. The questionnaire we are going to fill together if you accept to participate will not contain any information that can identify you or link you to the study. Confidentiality will also be maintained if the results of this study are published or communicated to another person or organization. During the study and thereafter, only I, my supervisor and the UNISA Ethics Committee will have access to the records of this study.

What will I do with the information you will give to me? After all participants are interviewed, all information received will be put together and analysed. If this study and those that will follow yield obvious results, these findings will be utilized for scientific purpose, in order to provide a basis for addressing the reproductive needs of pregnant women and strategies to achieve early antenatal booking. It is beneficial for you to be part of this study as the results of this study also belong to you and you will need to learn more about what was discovered at a later stage. The results of this study will be shared with you so that you can get a better understanding of issues related to antenatal care and PMTCT programme not only from your own perspective and experience, but also from the perspective and experience of other pregnant women who will participate in the study.

You may now ask any question you want about any aspect of the study you have not understood. You may sign the certificate of consent if you accept to participate to the study only if you feel you have received all information you needed for getting a better understanding of this research.

If you have any further queries related to this study in the future, my contact details are as follows:

**Mrs Maureen F Tshabalala**  
**Cell phone 082 224 9924**  
**Phone (home) 011 391 4320**



## **ANNEXURE F**

### **ISIVUMELANO**

#### **Igama lophenyo: “Ukusetshenziswa komtholampilo wabesifazane abakhulelwe base East Ekurhuleni, esikhungathweni sase Gauteng eMzansi Afrika”**

Lesi Isivumelwano sabantu besifazane, abaza emtholampilo beziphethe, eMtholampilo yasesi fundazweni sase- Mpumalanga yase Ekurhuleni i.e. Tsakane Main, Daveyton Main, ne First Avenue clinics; Phillip Moyo, Kwa Thema ne Nokuthela Ngwenya community health centres.

#### **Ophethe uphenyo: Mrs Maureen Fatsani Tshabalala**

Lesisi vumelwana siqukethe incazelelo ngenjongo yo –phenyo (okufana ne-njongo, indlela okuzoqhutshwa ngayo, ubungozi, no – kungatholaka, nokunye ke)“. Okunye okuqukethwe yilesivumelano, yi- setifiketi sesivumelwano, okumele sisayinwe abavuma ukuthatha inxaxeba, kanye nofakazi, no mufundi.

#### **INXENYE I: IMIBUZO**

Mhlonishwa,

Igama Lami ngingu Maureen F Tshabalala, inombolo yami enyuvesi yase Mzansi Afrika ithi 43377017 ngiqhuba izifundo zami kwi – Master of Public Health degree . Inhloso yalencwadi, ukuthola igunya kuwe, ukuthi ube ilunga labantu abazobe bekuleqembu elizobe lilandelwa kuloluphenyo osoluchaziwe ngaphezulu. Loluphenyo, ludingeka ngikwazi ukuqhubekazisa ukufunda kwami ngokuphelele..Imiphumelelo, noma okuyotholakala kulolucubungulo, kuzo nezezela ulwazi, ekunakekelweni komuntu wesifazane okhulelwe, kanti usuleleke nge ngciwane, lengculazi.Loluphenyo luvunyelwe yinqunquthela ebhekekekana, namalungelo okuqhutshwa kwe Zincubululo zase UNISA lo September 2011.

Abaningi abantu besifazane, kwizwe lase mzansi Afrika, baqala ukuvakashela imitholampilo, sebe namaviki angaphezu kwa mashumi amabili kulandela ukukhululwa. Ukunakekelwa ngokomtholampilo umuntu ezithwele kubalulekile futhi kudlala iqhaza elikhulu kwi programmeme yomama bendlulisa igciwane nenculaza enginganeni ezingakazalwa okanye ezisanda kuzalwa.Injongo yalesifundo ukuthola ukhuthi imitholampilo yabomama abakakhulelwe esifundazweni sase East Ekurhuleni e-Gauteng ziyasetshenziswa.

Ngaphambi kokuba ngiqhubekela phambili nenkulumo yami, ngicela ukucacisa lokhu okusemqoka okulandelayo:

- a) Lolu cwanningo alusilona inxeya yakho yokuvakashela umtholampilo usakhulelwe
- b) Ukuzibandakanya nalolu ncwanningo kuwukuthanda kwakho futhi awu phoqelekile. Akethe onelungulo lokukwesabisa ngokuthi angeke uvumeleke ukuthola usizo kwezempilo ukhulelwe ngoba unqabile ukuzibandakanye kuloluncwanningo. Uvumelekile unkunqaba ukuzibandakanye kuloluncwanningo, unelungelo lokuyekela ukuzibandakanye kulolu ncwanningo nangabe isiphi

isikhathi ofuna futhi othanda ngaso noma ngabe ube ususi sayinile isitifikedi sokuziphophezela.

- c) Imiphumela yalolu ncwaningo izosentshenziswa izimo zolwazi kuphela futhi ingashicilelwa.
- d) Njengoba ukhulelwe futhi uhamba umtholampilo mayelana neku khula kwengane oyikhulelwe, yisona sizathu esenze ukuthi uze ucelwe ukuthi uzibandakanye kulolu cwaningo.

Into engizoyenza kuloluncwaningo, ngizobuba imibuzo esondelene futhi ehambisana ngomtholampilo owuhambayo futhi owutholayo njengoba ukhulelwe. Yonke leminingwane izongciwna ifihlekile futhi iyimfihlo futhi akekho okulelithimba lethu ezokhiphela phandle imininingwane ezotholakala kunina kubantu abangafanele ukuthi bawubone lomningwane. Lephela elinemibuzo esizoligcwalisa sonke uma uthanda ukubandakanya kuloluncwaningo angeke lifake imningwane engagcine isiveze umuntu obhalile. Imfihlakalo yaleminingwane izongcinakala ifihlekile noma sekushicilelwa noma kuchumana nabanye abantu noma osomashishini.

Ukukhubeba kwalolucwaningo kanye nokuphela kwalo, yimina, nomuntu ongiphethe kanye nesikhungo sokulungisa sesikhungo ephakeme sase ningizimu Africa esigunyaziwe ukubona imininingwane yalolucwaningo.

Izinto engizozenza ngomningwane engizowthola kunina. Emva kukuthi bonke abazibandakanyile kulolu ncwaningo sebebuzwe futhi bayiphendula imibuzo, wonke umningwane ozotholakala kubona uzohlenganiswa ndawonye bese uyahlaziywa. Uma lolucwaningo nalabo abaluholayo nabalilandelayo lukhipha imiphumela ebinakalayo, imiphumela isostshenziselwa ukuthuthukisa ulwazi lwe sayensi ukuze kubenesizathu esiqinile souk bheka izinto eziphathelene nezidingo zokuzala kulabo bantu besifazane abakhulelwe kanye nokuqala ukuhamba umtholampilo kwabantu besifazane abakhulelwe. Kunomvuzo ukuzibandakanya kuloluncwaningo ngoba imiphumela ingeyenu futhi nizodinga nokufunda kabanzi ngalokho okuzotholakala ngalolucwaningo ngokuhamba kwesikhathi. Imiphumela yalolucwaningo izokwaziswa nakunina ukuze sonke sibe nesithombe futhi nolwazi olucacile ngezinto ezimayelana kokuziphatha kahle kwabantu abakhulelwe kanti futhi nokuthelelana kwengciwane komama kumntwana uma esanda kuzwalwa ayi ngedlela enibona ngayo kanye nalokhu eseni dlule kukona, kodwa ngokubona kanye nangokolwazi labantu abzibandakanye kulolucwaningo.

Senivumelekile manje ukuthi nibuze noma imiphi imibuzo enithanda futhi enifisa ukuyiboza mayelana noncwaningo eningayazi noma eningayizwanga kahle okanye enifisa ukuthi nichazeleke kabanzi. Seningalisayina isitifiketi sokuziphophezela ekubandakanyekeni kuncwaningo kodwa uma uzwa ukuthi wanelisekile ngomningwane ohloswe ilolucwaningo.

Uma ufisa okwazi okunye mayelana nalocwaningo kusasa, ungaxhumana name kuleminingwane elandelayo.

**Mrs Maureen F Tshabalala**  
**Umakhala ekhukhwini 082 224 9924**  
**Ugcingo (Ekhaya) 011 391 4320**



## **INXENYE II: YESIVUMELWA**

**Igama lophenyo: “Ukusetshenziswa komtholampilo wabesifazane abakhulelwe base East Ekurhuleni, esikhungathweni sase Gauteng eMzansi Afrika”**

Ngifundile ,imigomo nendlela okuzosetshenzwa ngayo ,nokuthi lwenzelwani uphenyo,futhi ngiyaqonda akeho umuntu ongiphoqhayo

Ngiyazi ukuthi ngingayeka noma yinini uma ngifuna akhu muntu ongangiphoqha, futhi ngeke kube noshinths indlela ezobe nginakekelwa ngayo kulomthola mpilo.

Ngiyazi ukuthiloluphenyo luvunyelwe umkhandlu wase UNISA wophenyo.Ngiyazi futhi ukuthi ukuthi imiphumela lalophenyo linga setshenziswa kolunye uphenyo futhi.

Ngiyavuma ukuncedisa kulophenyo

.....	.....
Igama lomcedisi	Umsayino yomcedisi
.....	.....
Indawo	Ilanga Umvumelani

---

### **Inkulumo eyenzwe umphenyi**

#### **Ngibhalile lonke uhlelo ngophenyo**

Ngiyavuma ukuphendula imibuzo engahle ize  
Ngizalandela imiqhathango ebekiwe

.....	.....	.....	
Igama lomphenyi	Umsayino	Ilanga	Indawo

**ANNEXURE G**

**INTERVIEW SCHEDULE**

**Utilization of Antenatal Care (ANC) and Prevention of Mother-to-child Transmission of HIV (PMTCT) services in East Ekurhuleni sub-district, Gauteng province, South Africa.**

**Health facility name**.....

**Sub-district**.....

**District**.....

**Province**.....

**Code**.....

**Date of interview**.....

**SECTION A: BIOGRAPHIC DATA**

		For official use
1	Age in years	<input type="text"/>
2	Marital status	<input type="text"/>
	Single	<b>1</b>
	Married/ life partner	<b>2</b>
	Living in with partner	<b>3</b>
	Widowed	<b>4</b>
	Divorced	<b>5</b>
	Separated	<b>6</b>
3	Educational Level	<input type="text"/>
	Tertiary	<b>1</b>
	Senior High school	<b>2</b>
	Junior High school	<b>3</b>
	Primary	<b>4</b>
	None	<b>5</b>
4	Apart from the current pregnancy; how many other pregnancies have you had?	<input type="text"/>
	0	<b>1</b>
	1	<b>2</b>
	2	<b>3</b>
	3	<b>4</b>
	4 or more	<b>5</b>

**SECTION B: ANTENATAL CARE CLINIC ATTENDANCE**

5 Skip if answer to question 4 is 0) When did you start antenatal care in your previous pregnancy?

- 1-3 months (1-13 weeks)
- 4-6 months (14-26 weeks)
- 7-9months (27-40 weeks)
- None (un booked case)

1
2
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--

6 How many weeks/months pregnant were you when you started attending antenatal care with the current pregnancy?

- 1-3 months(1-13 weeks)
- 4-6 months (14-26 weeks)
- 7-9months (27-40 weeks)

1
2
3

--

7 Why did you start antenatal care at this time?

- Encouraged by family and/or friends
- Illness
- To get an Antenatal Card for delivery use
- To confirm pregnancy
- To check gestational age
- To get Vaccines and Vitamins
- To have an HIV test
- Other, specify

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8 Why do you think pregnant women should attend antenatal care?

- To be counselled & tested for HIV
- To be given Vaccines & Vitamins
- To monitor fetal growth
- To get Antiretroviral prophylaxis
- To identify and prevent complications
- Nutrition education
- Other diagnostic tests (urine, BP etc)
- Other, specify

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9 When do you think is the best time to begin antenatal care?

- 1-3 months(1-13 weeks)
- 4-6 months (14-26 weeks)
- 7-9months (27-40 weeks)

1
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10	Why?	<table border="1"> <tbody> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>12</td></tr> </tbody> </table>	1	2	3	4	5	6	7	12	<div style="border: 1px solid black; height: 180px; width: 100%;"></div>
1											
2											
3											
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12											
11	Did you access any antenatal care information before getting pregnant?	<table border="1"> <thead> <tr> <th data-bbox="948 669 1043 707">yes</th> <th data-bbox="1043 669 1145 707">no</th> </tr> </thead> <tbody> <tr> <td data-bbox="948 707 1043 741">1</td> <td data-bbox="1043 707 1145 741">0</td> </tr> </tbody> </table>	yes	no	1	0	<div style="border: 1px solid black; height: 63px; width: 100%;"></div>				
yes	no										
1	0										
12	If yes, where?	<table border="1"> <tbody> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>12</td></tr> </tbody> </table>	1	2	3	4	5	6	7	12	<div style="border: 1px solid black; height: 180px; width: 100%;"></div>
1											
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13	What was the information about?	<table border="1"> <tbody> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>12</td></tr> </tbody> </table>	1	2	3	4	5	6	12	<div style="border: 1px solid black; height: 167px; width: 100%;"></div>	
1											
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14	What are the benefits of starting antenatal care early (1-3 months' gestation) rather than late in pregnancy?	<table border="1"> <tbody> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>12</td></tr> </tbody> </table>	1	2	3	4	5	12	<div style="border: 1px solid black; height: 220px; width: 100%;"></div>		
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- 15 What are the things/factors that make it difficult for women to come to the clinic for antenatal care?

Fear of HIV positive result  
Lack of money  
Distance  
Transport problems (accessibility)  
Poor quality of care  
Long waiting time  
Limited resources  
Nurses attitudes  
Clinic availability hours (open times)  
Other, specify

1
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12

<input type="text"/>
<input type="text"/>

- 16 What can be done to motivate pregnant women to start antenatal care early (during first trimester/ 1-3 months gestation)

Health education to clinic attendees  
Community mobilization  
IEC material  
Male involvement  
Improved attitude of health care workers  
Outreach clinics  
Other, specify

1
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<input type="text"/>
<input type="text"/>

### SECTION C: ANTENATAL CARE SERVICES

- 17 What information did you receive at ANC during this pregnancy?

PMTCT  
Nutrition and supplements  
Signs and management of complications  
Infant feeding  
Birth plan  
Family planning  
Other, specify

1
2
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<input type="text"/>
<input type="text"/>

- 18 What services did you get during your ANC visits with this pregnancy?

Screening (BP, urine, HB, weight etc)  
HIV counselling and testing  
TB screening  
Supplements  
Vaccines  
ART prophylaxis  
Physical exam  
Unsure  
Other, specify

1
2
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<input type="text"/>
<input type="text"/>

## 19 Health Care Workers

		Strongly agree	agree	Undecided	Disagree	Strongly disagree
a	Do they have good attitude?	1	2	3	4	5
b	Do they provide enough information about HIV and AIDS?	1	2	3	4	5
c	Are they judgemental?	1	2	3	4	5
d	Do they make you feel comfortable?	1	2	3	4	5
e	Do they ask you questions?	1	2	3	4	5
f	Do they allow you to ask questions?	1	2	3	4	5
g	Do they respect you?	1	2	3	4	5
h	Are you assured of confidentiality?	1	2	3	4	5
i	Is privacy maintained?	1	2	3	4	5
j	Are you referred for other services?	1	2	3	4	5
k	Do you think they know what they are doing?	1	2	3	4	5
l	Other, specify	1	2	3	4	5

**SECTION D: PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV (PMTCT)**

20 Have you ever heard of a programme that prevents a child from getting HIV from the HIV positive mother during pregnancy, labour/delivery as well as breast feeding?

yes	no
1	0

21 If yes, what have you heard?

HIV can be prevented for the baby  
 Antiretroviral treatment  
 Nutrition & supplementation  
 Baby feeding options  
 Care of HIV exposed baby  
 Partner involvement  
 Other, specify

1
2
3
4
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12



22 Were you offered HIV testing during this pregnancy?

yes	no
1	0

23 Do you know your HIV status?

yes	no
1	0

<p>24 How many months pregnant were you when HIV testing was offered with this pregnancy?</p> <p>1-3 months(1-13 weeks) 4-6 months (14-26 weeks) 7-9months (27-40 weeks)</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> </table>	1	2	3	<div style="border: 1px solid black; height: 136px; width: 100%;"></div>						
1											
2											
3											
<p>25 Are you aware of ANC services that are offered to HIV positive pregnant women?</p>	<table border="1"> <tr> <td>yes</td> <td>no</td> </tr> <tr> <td>1</td> <td>0</td> </tr> </table>	yes	no	1	0	<div style="border: 1px solid black; height: 60px; width: 100%;"></div>					
yes	no										
1	0										
<p>26 If yes, mention some services</p> <p>HIV screening Antiretroviral treatment to mother Nutritional supplements CD4 and viral load testing Antiretroviral prophylaxis to baby Other, specify</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>12</td></tr> </table>	1	2	3	4	5	12	<div style="border: 1px solid black; height: 137px; width: 100%;"></div>			
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<p>27 When do HIV positive pregnant women start HIV prophylaxis treatment (AZT/ARVs)?</p> <p>12 weeks gestation 14 weeks gestation 28 weeks gestation 1-3 months(1-13 weeks) 4-6 months (14-26 weeks) 7-9months (27-40 weeks) Don't know/unsure</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> </table>	1	2	3	4	5	6	7	<div style="border: 1px solid black; height: 166px; width: 100%;"></div>		
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<p>28 What are the reasons that prevent pregnant women from taking HIV treatment (ARVs) as required?</p> <p>Side effects Fear of partners and family members Change of body Lack of knowledge Un aware of benefits Fear that it might deform the baby Stock outs in clinics Disclosure Other, specify</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>8</td></tr> <tr><td>12</td></tr> </table>	1	2	3	4	5	6	7	8	12	<div style="border: 1px solid black; height: 204px; width: 100%;"></div>
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4											
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7											
8											
12											
<p>29 Any comments?</p>											

**THANK YOU FOR YOUR PARTICIPATION**

**ANNEXURE H****IMIBUZO**

**Ukusetshenziswa komtholampilo wabesifazane abakhulelwe base East Ekurhuleni, esikhungathweni sase Gauteng eMzansi Afrika.**

**Igama lomtholampilo.....**

**Ingxenye Yomkhandlu.....**

**Umkhandlu.....**

**Isivundazwe.....**

**Ikhodi.....**

**Isuku Lokuhlolwa.....**

**INGXENYE A: ISIGABA SOKUQALA: IMININGINGWANE NGAMI:**

		<b>Kusentshenziswa Ihhovisi Kuphela</b>	
1	Imnyaka Yami	<input type="text"/> <input type="text"/>	
2	Umarital status zakho	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
	Angishadanga		<b>1</b>
	Ngishadile		<b>2</b>
	Ngihlala Ne Soka Lami		<b>3</b>
	Ngingu Mfelokazi		<b>4</b>
	Ngehlukana ngokomthetho		<b>5</b>
	Sehlukene	<b>6</b>	
3	Izinga Lemfundo	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
	Imfundo Ephakeme (Nyuvesi/kholishi, noma okunye)		<b>1</b>
	Isikole samazinga aphezulu(Gr 8 -12)		<b>2</b>
	Isikole samazinga aphakathi(Gr 5 -7)		<b>3</b>
	Isikole samazinga aphansi(Gr1 -4)		<b>4</b>
	Angingenanga esikoleni	<b>5</b>	



4 Ngaphandle kwalokhu kukhulelwa, Uke wakhulelwa ngaphambili, Ngakhakhi ?

- 0  
1  
2  
3  
4 or more

1
2
3
4
5

<input type="text"/>
----------------------

### INGXENYE B: ABEZA EMTHOLA MPILO WABESIFAZANE ABAKHULELWE

5 Ndlula Uma Ngabe, ngaphezulu ukhethhe u 0)  
Ngekathi ukhulwe ngaphambili, waqala nin ukuhamba umthlomapilo wabakhulelwe?

- 1-3 months/Inyanga (1-13 weeks)  
4-6 months (14-26 weeks)  
7-9months (27-40 weeks)  
None (unbooked case)

1
2
3
4

<input type="text"/>
----------------------

6 Aye semangakhi amaviki, noma izinyanga, ngenkathi u qala ukuhamba umtholampilo?

- 1-3 months(1-13 weeks)  
4-6 months (14-26 weeks)  
7-9months (27-40 weeks)

1
2
3

<input type="text"/>
----------------------

7 Yiziphi izinti ezenza ukuba uqale umtholampilo ngalesisi khathi?

- Ngakhuthazwa umdeni noma abangani bami.  
Ukugula  
Ukuthola ikhadi lasemtholampilo, elisentshiziselwa ukubeletha  
Ukuyoyinisekisa ukukhulelwa kwami  
Ukuthola ukuthi sesingakanani sengikhulelwe  
Ukuyothal izinsiza gazi, nezifikela kugula  
Ukuyohlolola isandulela ngculazi  
Okunye, chaza

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2
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4
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12

<input type="text"/>
----------------------

8 Kungani ucabanga ukuthi, abantu besifazane abakhulelwe kumele beye emtholampilo?

- Ukuba bayohlololwa isandulela ngciwane  
Ukuyothal izinsiza gazi, nezifikela kugula  
Ukulandela ukukhula, nokuphatheka kahle komntwana esiswini sikaMama  
Ukuyothola imishanguzo  
Ukuyohlola bese bevikela izinkinga ezingalindelekile  
Ukuyofundiswa ngendlela, uMama, nengane kumele badle ngayo

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<input type="text"/>
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<p>Okunye ukuhlolwa (Umchamo, i-Blood Pressure, nokunye) Noma Okunye, Cacisa</p>	<table border="1"> <tr><td>7</td></tr> <tr><td>12</td></tr> </table>	7	12							
7										
12										
<p>9 Ucabanga ngabe Isiphi isikhathi, sihle sokuqala Umthola mpilo, njengo Mama ozithwele?</p> <p>1-3 months(1-13 weeks) 4-6 months (14-26 weeks) 7-9months (27-40 weeks)</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> </table>	1	2	3	<input type="text"/>					
1										
2										
3										
<p>10 Kungani?</p> <p>Kufanele kwenzwe isiqiniseko sokuthi ukhulelwe Ukuyothala izinsiza gazi, nezifikela kugula Ukulandela ukukhula, nokuphatheka kahle komntwana esiswini sikaMama Ukuyothola imishanguzo Ukuyohlola bese bevikela izinkinga ezingalindelekile Ukuyofundiswa ngendlela, uMama, nengane kumele badle ngayo Okunye ukuhlolwa (Umchamo, i-Blood Pressure, nokunye) Noma Okunye, Cacisa</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>12</td></tr> </table>	1	2	3	4	5	6	7	12	<input type="text"/>
1										
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7										
12										
<p>11 Uke – wathola ulwazi, ngoncedo lwase mtholampilo labomama abazithwele?</p>	<table border="1"> <thead> <tr> <th>yebo</th> <th>cha</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0</td> </tr> </tbody> </table>	yebo	cha	1	0	<input type="text"/>				
yebo	cha									
1	0									
<p>12 Uma uthi yebo kuphi</p> <p>Ezingcwadini zasemtholampilo/esibhedlele Kumndeni nabangani Umsakazo Umabona Kude Kwimbuthano yo-mphakathi Iphephandaba, Abalaphi bendabuko Okunye, Cacisa</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>12</td></tr> </table>	1	2	3	4	5	6	7	12	<input type="text"/>
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12										
<p>13 Bokukhulunyangani</p> <p>Ngegciwane lengculaza ngezingozi Indlela yokubona okuyingozi Indlela elunile yokudla uma ukhulelwe Umfutho wegazi eliphezulu(BP) Ngokudla kwengane Nangokunye, cacisa</p>	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>12</td></tr> </table>	1	2	3	4	5	6	12	<input type="text"/>	
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14	Yini okubalulekile ukuthi uqhale umtholampilo wabomama abakhulelwe ngesikhathi?		
	Ukwazi ngokushesha isimo sakho sengculaza	1	
	Ukwazi ngokushesha izingozi	2	
	Isikhathi esengolezelelweyo ukuphuza umshavuzo	3	
	Ukuvikela izingozi	4	
	Ulwazi olungcono ngokuzinakekela uma ukhulelwe	5	
	Okunye, cacisa	12	
15	Yini engayenza owesifazane abenenkinga yokuza emtholampilo uma ekhulelwe?		
	Usaba ukuthola ngegciwane le ngculaza	1	
	Ukuswela imali	2	
	Kude kangakanani	3	
	Izithutho zokuza emtholampilo	4	
	Indlela yokuphathwayabantu emtholampilo	5	
	kuhlala isikhathi eside emtholampilo	6	
	ukungabikho kwezinto emtholampilo	7	
	Indlela abahlengikazi baziphathangayo	8	
	Izikhathi zokuvula amtholampilo	9	
	Nokunye, cacisa	12	
16	Singenzanjani ukukhuthaza abesifazane abakhulelwe ukhuthi beze emtholampilo		
	Izimfundiso zasemtholampilo	1	
	Nomaukukhulumanomphakathi	2	
	Ukuba nezinto zokufunda ngomthola mpilo	3	
	Ukwenza abesilisa babenendima abyidlalayo	4	
	Indlela engcono yokuziphatha kwabahlengikazi	5	
	Outreach clinics	6	
	Okunye, cacisa	12	

**INGXENYE C: ABEZA EMTHOLA MPILO WABESIFAZANE ABAKHULELWE**

17	Uthole luphi ulwazi emtholampilo?		
	Ukuvikelwa lokusulelwa kwegciwane kubantwana abangaveli	1	
	Ngezokudla okunempilo	2	
	Ngezinto okufanele uziqhaphele uma ukhulelwe	3	
	Ukuncelisa umntwana	4	
	Indlela ozobeleka ngayo	5	
	Ukuhlela umndeni	6	
	Nokunye, cacisa	12	

18 Uthole luphi olunye usizo lapha emtholampilo?

Ukuhlolwa igazi  
Eliphezulu/umgcamo, isisindo  
Ukuhlolwa kwegciwane lengculaza  
Isifo sofuba  
Umjovo  
Umshwanguzo  
Ukuhlolwa  
Ukungaqondi  
Nokunye, cacisa

1
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19 Abasebenzi bezempilo

		Uvuma kakhulu	Uyavuma	Awuqondi kahle	Awuvumelani	Awuvumelani kakhulu
a	Impatho yalapha inhle na ?	1	2	3	4	5
b	Bayafundisa na ngesifo somandulela ngculaza noma ingculaza ?	1	2	3	4	5
c	Abakwahluleli na ?	1	2	3	4	5
d	Bayanenza na ukuthi nizizwe nikhululekile	1	2	3	4	5
e	Bayanibuza imibuzo na ?	1	2	3	4	5
f	Bayanipha na ithuba lokubuza imibuzo ?	1	2	3	4	5
g	Bayanihlonipha na ?	1	2	3	4	5
h	bayaniqinsekisa ngokukhipha imfihlo na ?	1	2	3	4	5
i	Imfihlo iyangcinwa na?	1	2	3	4	5
j	Baya khona yini ukunithumela kolunye usizo lomtholampilo ?	1	2	3	4	5
k	Ucabanga ukuthi bayakwazi abakwenzayo ?	1	2	3	4	5
l	Okunye, cacisa	1	2	3	4	5

### INGXENYE D : UKUVIKELWA KOKUSULELEKA KABANTWANA ESISWIN EGCIWANE LENGCULAZA

20 Ukwezwa ngendlela okuvikelwa ngayo abantwana ukuthi bangatholi igciwane lengculaza umama esakhulelwe noma engcelisa?

yebo	cha
1	0

--

21	Umawazi, wazini ngalokho?  Igcwane lengculaza lingavikelwangokuphuza Imishanduza Ukudla okunempilo Indlela ozonngcelisa ngayo Nokwazisa ubaba wengane Okunye, cacisa	1 2 3 4 5 6 12	<input type="text"/>
22	Wawuhloliwe ingculaza?	yebo   cha 1   0	<input type="text"/>
23	Uyasazi yini isimo sakho ngengculaza?	yebo   cha 1   0	<input type="text"/>
24	Uhlole ingculaza unenyanaga ezingakhi?  1-3 months(1-13 weeks) 4-6 months (14-26 weeks) 7-9months (27-40 weeks)	1 2 3	<input type="text"/>
25	Uyakwazi yini okunye okenzelwa abakhulelwe lapha emtholampilo?	yebo   cha 1   0	<input type="text"/>
26	Umawazi ngicela usho ukuthi yini  Ukuhlolwa kwengculaza Umshavuza Ukudla okunempilo Ukuhlolwa kwamasotsha omzimba Umshavuza wezingane Nokunye, cacisa	1 2 3 4 5 12	<input type="text"/>
27	Baqhala nini abesifazane abakhulelwe ukuphuza isandulela mshavuzo?  Benamaviki awu 12 Benamaviki awu 14 Benamaviki awu 28 Benezinyanga e wani-ezintathu 4ezine -esithupha eziyisikhombisa-kuya kweziyishiyagalolunye	1 2 3 4 5 6	<input type="text"/>
28	Yini eyenza abesifazane abkhulelwe bangaphuzi umshavuzo?  Indlela ebaphathngayo Ukwesaba umndeni noma izihlobo Ushintsho emzimbeni Ukungazi Ukungazi usizolwazo	1 2 3 4 5	<input type="text"/>

Ukwesabaukuthi lizoyenzani enganenei  
yakhe  
Ukuphela kwamaphilisi  
Ukufihla  
Nokunye, cacisa

6	
7	
8	
12	

29 Ungathini?

**NGIYABONGA**

**ANNEXURE I**

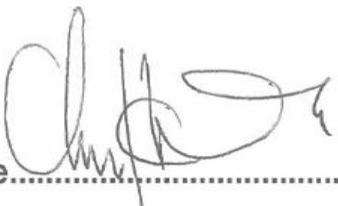
**EDITORIAL CERTIFICATE**

This is to confirm that the dissertation titled “**Utilization of Antenatal Care (ANC) and Prevention of Mother to Child Transmission of HIV (PMTCT) services in East Ekurhuleni sub-district, Gauteng Province, South Africa**” was professionally edited by me.

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**Signature**.....

**Date**.....20/02/2012

**ANNEXURE J**

**STATISTICIAN CERTIFICATE**

This is to confirm that I, Fadzai Chikwava assisted Maureen Tshabalala with data analysis of the dissertation titled **“Utilization of Antenatal Care (ANC) and Prevention of Mother to Child Transmission of HIV (PMTCT) services in East Ekurhuleni sub-district, Gauteng Province, South Africa”**.

Contact number: 073 631 0176

Signature.....

Date.....20/2/2012