Factors influencing the Gestational Age at Booking in Primi-Gravid Clients within the Prevention of Mother to Child Transmission of HIV (PMTCT) Program at Site B Midwife Obstetrics Unit, Khayelitsha Cape Town

Daniel Nhemachena

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Africa Centre for HIV/AIDS Management
Faculty of Economic and Management Sciences
Supervisor: Dr Thozamile Qubuda

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DEFINITION OF TERMS

Gestational Age: is defined as the age of the embryo/foetus as calculated by the Nurse from the Last (normal) Menstrual Period (LMP) if the woman is sure of her dates. (Medline Plus, 2010).

Client: refers to a woman seeking antenatal services from the MOU.

Booking: is defined as the first attendance at Site B MOU, by a pregnant woman (client), when gestational age is noted and baseline assessments are done by a healthcare professional (nurse or doctor).

Primi-gravida: refers to a woman (client) who is pregnant for the first time regardless of the outcome of the pregnancy (for the purpose of this project the Foetus must how ever be deemed viable at booking).

Prevention of Mother to Child Transmission (PMTCT) program: refers to the WHO program that the National Government of the Republic of South Africa has adopted to reduce the infection of babies by HIV during pregnancy, labour and breastfeeding

ACRONYMS

AIDS	Acquired Immuno Deficiency Syndrome
ARVs	Antiretroviral drugs
AZT	Zidovudine
DOH	Department of Health
HIV	Human Immuno Virus
HAART	Highly Active Anti-retroviral Therapy
MTCT	Mother to Child Transmission
PGWC	Provincial Government of the Western Cape
PMTCT	Prevention of Mother to Child Transmission
STIs	Sexually Transmitted Diseases
TAC	Treatment Action Campaign
UNGASS	United Nations General Assembly

ABSTRACT

This study examines the factors that influence the gestational age at which a pregnant woman will book at the ante-natal clinic. The gestational age of the baby at booking is important as the Prevention of Mother to Child Transmission (PMTCT) of HIV program has been recently changed. For the best outcomes to be achieved for PMTCT must be started at 14 weeks of gestation. In other words a woman must book early (first trimester).

The study was qualitative using a structured interview as a method of data collection. A sample size of 10 was used. The data collected was analysed to look for emerging themes and ideas that reflect why a particular woman booked when she did. The responses given by the participants illustrated that socio-economic, cultural and personal beliefs, knowledge and perceptions of the ante-natal services all had an influence on when a woman booked.

OPSOMMING

Hierdie studie ondersoek die faktore wat die gestasie-ouderdom waarop 'n swanger vrou ‘n voorgeboortekliniek sal besoek. Die gestasie-ouderdom van die baba by bespreking is belangrik vir die Voorkoming van Moeder-na-Kind Oordrag (VMNKO) van die MIV-program wat onlangs verander het. Om die beste resultate te bereik vir VMNKO, moet behandeling begin op 14 weke van swangerskap. Met ander woorde, 'n vrou moet vroegtydig (tydens eerste 3 maande van swangerskap) ‘n voorgeboortekliniek besoek.

Die studie was kwalitatief met 'n gestruktureerde onderhoud as 'n metode van data-insameling. 'n Steekproefgrootte van 10 is gebruik. Die data wat versamel is, is ontleed om nuwe temas en idees te bepaal, wat weerspieël waarom ‘n spesifieke vrou by ‘n voorgeboortekliniek bespreek het. Die reaksie wat deur die deelnemers getoon was, dui aan dat sosio-ekonomiese, kulturele en persoonlike oortuigings, kennis en persepsies van die voorgeboortedienste, almal 'n invloed gehad het op wanneer 'n vrou die voorgeboortekliniek begin besoek het.

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CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

The 2008 antenatal sero-prevalence survey reported that the national HIV prevalence of pregnant women between the ages 15 to 49 years of age, served at public institutions was 29.3 % (UNGASS, 2010). This is just under a third of all the pregnant women in our public institutions. This is reflective of the general population as an overwhelming number of citizens use public institutions as compared to private clinics. Moreover women and children form the greatest population of those infected by HIV.

HIV has a number of ways that it is transmitted. The most significant are through unprotected sex, sharing of cutting instruments (as with injecting drug users) or rarely nowadays, blood transfusions. However the focus of this project is on the transmission that happens from an HIV infected mother to her child. This can occur in-utero, during birth or during breast-feeding. Globally, 90% of all new infections in children are due to MTCT and MTCT accounts for 10% of all infections annually (WHO, 2007). The current rate of transmission from mother to child (MTCT) in South Africa lies at 16% (UNGASS, 2010). This is thanks, in part, to a successful Prevention of Mother to Child Transmission (PMTCT) program that was launched and has been running since 2001.

The program has been successful in that it is almost universally available in public health institutions reaching a coverage rate of 95% (UNGASS, 2010). It is estimated that a mother receiving adequate PMTCT care reduces the chance of transmission to her child to less than 2%. Without any intervention the chances can be as high as 20-45% (WHO, 2007).

1.2 THE PICTURE IN THE WESTERN CAPE

The various provinces have different prevalence rates; in 2007 the Western Cape had the lowest prevalence at 12.6%. However, in some areas in the Western Cape the prevalence exceeds the national average. There is also variation in prevalence by age group, with the highest prevalence in 2007 in the 20–39 year age groups. In the 30-34 year age group the prevalence was as high as 40.2%. The national prevalence in the 15–29 year age group has declined from 2005 to 2007 (PGWC, 2009).

In the Western Cape, from 2004 to 2006, the prevalence in pregnant women less than 25 years of age has reduced each year, possibly suggesting a reduction in incidence in this age group. In 2006, 21.1% of pregnant women in the 25-29 year age group were HIV-infected. This still constitutes a considerable disease burden for women in their reproductive years. By 2003, non-pregnancy related infections (NPRI) were found to be the most common primary cause of maternal death. Of these NPRIs, AIDS was the most common sub-category, and TB and pneumonia the most common causes of death in this group of women (PGWC, 2009).

An estimated 60,000 to 70,000 children are newly infected with HIV each year. In 2006 there were approximately 257,900 HIV-infected children under 14 years of age in this country. Mother-to-child transmission (MTCT) is the overwhelming source of HIV infection in young children (PGWC, 2009).

HIV infection is currently one of the leading direct and indirect causes of morbidity and mortality amongst South African mothers and children, and is a threat to the country's ability to meet the Millennium Development Goals (PGWC, 2009).

1.3 THE PREVENTION OF MOTHER TO CHILD TRANSMISSION (PMTCT) OF HIV PROGRAM IN SOUTH AFRICA.

The PMTCT program in South Africa was first piloted in 2001 under the management partnership of various government and non-governmental stakeholders. A series of consultations and discussions with experts and government, led to the program's controversial roll out in 2002. In July 2002, the Constitutional court ruled that the provision of Nevaripine at only a few pilot sites was unconstitutional (Heywood, 2003). Consequently the Treatment Action Campaign (TAC) led the charge against the Minister of Health compelling the then Minister of Health (Manto-Tshabalala-Msimang) and the government to start the roll out of the PMTCT program more widely than they had done before.

The initial goal of the program was to reduce the transmission of HIV from infected mothers to their babies. The program is founded on four main pillars/components, namely:

- The Primary prevention of HIV among young women of childbearing age

- Preventing unintended pregnancies in HIV positive women
- Preventing HIV transmission from a woman living with HIV to her infant.
- Providing appropriate treatment care and support to women living with HIV and their children and families (DOH, 2010).

For the program to be successful, all four components must be in place and running well. However for this study the most important component under scrutiny is the third component dealing with the *prevention in transmission from the HIV positive mother to the child.*

In 1994; a collaborative study between the United States and France (ACTG-076), found that administration of AZT dramatically reduced the risk of transmission (Conner et al, 2004). This was an important breakthrough as it was now a possibility for HIV positive mothers to give birth to HIV free children. Unfortunately at the time, AZT or Zidovudine was prohibitively expensive and the roll out was to come much later after the fall in costs. The study had however proved that it was possible to prevent the infection of infants by their HIV positive mothers. This was the first milestone of great significance that encouraged international opinion to further explore the possibilities.

Shortly after 1999 a study called the HIVNET 012, showed a 47% reduction in transmission by using Nevirapine as a single dose given to the mother in labour and another dose to the new born infant (PGWC, 2009). Thus this single dose regimen became the mainstay of PMTCT. However in 2004, at the XV International HIV Conference in Bangkok, the WHO presented a paper that demonstrated that there was an increased prevalence (40% in women and 45% in children) in genotypic resistance to NNRTI at 7 weeks post delivery when Nevirapine was administered as monotherapy in PMTCT (Martinson N. et al, 2004). It therefore meant that we were reducing the number of future options for HAART for the mothers on the PMTCT program.

The WHO then recommended the use of AZT from 28 weeks of Gestation plus a single dose of Nevirapine to the mother during labour. The infant would get a single dose of Nevirapine at birth and 1 week of AZT to take home. This became the National Protocol for PMTCT in South Africa until 2010.

In April 2010 the following became the recommended National drug regimen for PMTCT for all women that did not qualify for full HAART:

- ANTENATAL- Daily AZT from 14 weeks
- INTRAPARTUM- AZT 3 hourly and single dose Nevaripine
- POST PARTUM- single dose of Tenofovir and Emtracitabine.

The use of AZT from 14 weeks was the most significant change in the PMTCT program. The commencement of AZT at 14 weeks stands to be a huge challenge as there is a culture of booking late in the South African and indeed African setting.

1.4 STATEMENT OF THE PROBLEM AND SIGNIFICANCE

On 1 April 2010, a new protocol for the PMTCT program was revealed. One of the major changes is that mothers would receive an Anti- Retroviral named AZT from 14 weeks of gestation as this had been shown to reduce the risk of transmission of HIV from a mother to her unborn child (DOH, 2010). Arguably this reduces the risk of transmission more effectively than starting at 28 weeks of gestation, as was the case before. This very important change is the basis of this research project. Evidence suggests that most clients in South Africa book rather late in pregnancy. A study in Kwazulu-Natal pointed out that only 9% of clients booked in the first trimester. The remaining 91% booked much later (Hoque, M et al, 2008). Since the time of booking for most people is well into the second trimester, we are missing an opportunity to provide the adequate Anti-retroviral cover required from 14 weeks. The opportune time would be booking in the first trimester, not in the second. It is very likely that our HIV positive mothers-to-be are not receiving adequate PMTCT care with detrimental outcomes.

If we are going to address the problem of late booking as a reason for inadequate PMTCT care, we have to dissect out the reasons why people book when they do. There must be factors that influence the booking of patients. This study proposes that there are client factors and health system factors.

Client factors are those that are associated with the client such as:

- Unaware that one is pregnant
- Denial that one is pregnant (due to social pressure)

- Cultural beliefs about booking
- Knowledge/education/understanding about booking
- Age
- Socio-economic status

Healthcare system factors are those factors that are directly related to the healthcare system:

- Accessibility to a healthcare facility (distance, cost, waiting times)
- Healthcare staff attitudes. Examples such as being turned away because one is too early to be booked have been reported.

The aim of this research study is to explore if these factors mentioned above are actually reasons given by patients for booking when they did. The study also aims to find out to what extent these reasons are cited as reasons for booking when they do.

These factors have been chosen after conducting focus group discussions with midwives working in Site B MOU. This was done as part of a health systems strengthening exercise done by the Desmond Tutu Tb Centre. Studies in Nigeria by Okunlola et al (2006) found that factors such as perceived benefits (Knowledge/education/understanding about booking) and physicians' recommendation (Healthcare staff attitudes) were associated with early booking.

It is from collecting this knowledge that we can build a pool of knowledge so we can better tackle the problem of late booking. This study could give insight into what factors to target and possibly how to do this. Results from this study could be used to formulate solutions that encourage early booking and early access to PMTCT programs.

1.5 RESEARCH QUESTION AND HYPOTHESIS

The study question on which this proposal is based on is:

What are the factors influencing Gestational Age at booking in primi-gravida clients in the Prevention of Mother to Child Transmission of HIV (PMTCT) Program at Khayelitsha Site B MOU?

The dependant variable is gestational age at booking.
The independent variables are Client factors and health system factors.

The hypothesis therefore is:

The gestational age at booking in primi-gravida clients in the Prevention of Mother to Child Transmission of HIV (PMTCT) Program at Site B MOU is influenced by specific client factors and health system factors.

CHAPTER TWO: LITERATURE REVIEW

2.1 ANTE-NATAL CLINICS AS A DOOR WAY TO INTERGRATION OF OTHER HEALTH SERVICES.

Arguably, the biggest challenge to the new PMTCT protocol of 2010 is the use of AZT from 14 weeks of gestation. This particular time of 14 weeks is significant in that it points to the integration of services of maternal and child health and the HIV/Aids program. As the WHO notes in their recommendations, Ante-Natal Clinic (maternal and child health) is a very good entry point for other services and integration of services.

Several conditions that are prevalent in Africa, such as malaria, STIs, maternal and neonatal tetanus, HIV, tuberculosis (TB), and some nutritional deficiencies, can be addressed during ANC care. If not effectively managed, most of these conditions interact during pregnancy and may worsen pregnancy outcomes, especially HIV and malaria (WHO, 2010). WHO recommendations state that the best time for a mother to book is in the first trimester (8 to 12 weeks). This allows ample time for testing mothers for HIV and commencing them on the correct ARV regimen or prophylaxis. The gestational age at booking therefore has a very strong bearing on when she can enter the PMTCT program.

This is subsequently linked to the outcomes of the pregnancy. The earlier a mother attends the ANC the sooner she can be diagnosed with HIV (in the case that she does not know her status) and the sooner the AZT can be started in accordance with current recommendations. This would result in a better outcome for the pregnancy not only in that it helps prevent the transmission of HIV, but additionally other underlying conditions and infections can be detected. In 2005 the adjusted Maternal Mortality rate for South Africa stood at 400/100 000 live births (UNICEF, 2010). Early booking and management of conditions could potentially reduce the number of maternal deaths.

2.2 BARRIERS TO ATTENDING ANTE-NATAL CARE

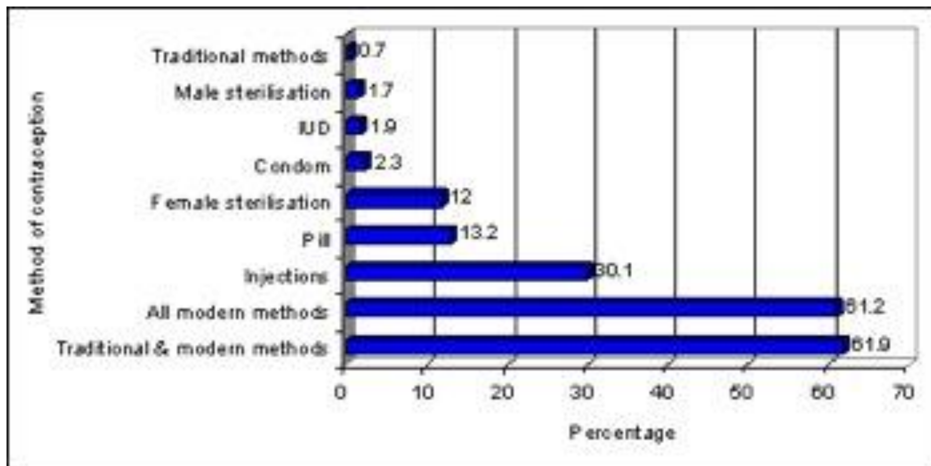
There are many barriers that exist, that prevent pregnant women from attending ante-natal services. They can be divided into client factors and health system related factors. The client or the pregnant mom ultimately holds the responsibility of going to the clinic to book but other societal and economic factors may hinder her ability to do so. Moreover the health system itself may play a role in the woman not actually getting to do the booking despite actually attending the ante-natal clinic.

2.2.1 Client Barriers

For a woman to actually go to the ante-natal clinic; she first and foremost must know that she is pregnant. Only after knowing this fact can she decide whether or not she will go to the clinic and when she will do so. This creates the first barrier for accessing ante-natal care and subsequently PMTCT. There are a number of reasons why a woman may not be aware that she is pregnant:

- At about 30% coverage, injectables are the most commonly used contraceptive in South Africa (SADHS, 1998). (Figure 1). Unfortunately this contraceptive leads to irregular and prolonged bleeding. These side effects are usually the reason why women stop using this method (Said et al 1986). Also women are not always sure of the return dates and therefore they lose contraceptive cover. That coupled with the fact that menstruation has become irregular women are unaware that they are pregnant until symptoms of pregnancy manifest themselves. When the woman becomes aware that she is pregnant, only then she can consider going to the clinic for booking. However the fact that her pregnancy is unplanned may further delay her booking at the clinic as she tries to overcome the initial shock.

Figure I. Current contraceptive use in sexually active women



Source: SADHS Project Team, " South Africa in transition: selected findings from the South African Demographic and Health Survey" (Pretoria, Government Printers, 1998).

- Age seems to play a role as well, in determining access to health care. A meta-analysis of barriers to accessing ante-natal care in the UK, noted that younger women, particularly teens and adolescents, booked late. This is simply due to the fact that they are unaware of the symptoms of pregnancy and therefore only realise that they are pregnant in the second and third trimester (Downe, 2008).

- Once the woman realizes she is pregnant, she will have to internalise the concept before moving on. As discussed above this process of acceptance may be affected by whether or not it was a planned pregnancy. One of the biggest barriers to accessing care is denial that one is pregnant. She may deny her pregnancy to herself or others in her social network. Also women with chaotic lives (substance abusers or women with multiple partners for example), may also delay their first attendance at the ante natal clinic. So personal disorganisation or a chaotic lifestyle of the woman can be a barrier (Lavender et al, 2007).

- For a woman to actually attend the ante-natal clinic for booking she must see a benefit in doing that. She must be aware of the services available for her and her unborn baby that will improve the outcomes of the pregnancy. Therefore, the perception that attending the local clinic has no benefit is a barrier to attending anti-natal service. Also lack of knowledge and education about the services offered can be a barrier. Attending school or some sort of formal education allows one to have access to other peers while

getting a formal education. Both peers and didactic teaching offers an opportunity for one to learn about their sexuality and what to do in the event of pregnancy. So absence of formal education could be believed to be a barrier to accessing ante-natal care.

- The next level of barriers is not specifically internal or personal. This has to do with the woman's environment. This includes the social and economic circumstances that a woman finds herself. Low socio-economic status has been shown by several studies to impede access to healthcare. If a woman is too poor to afford the transport money to the local clinic this may prevent her from accessing even the free ante-natal services offered in South Africa.

- Another important barrier may be the effects of culture. In many African societies, pregnancy is often not disclosed early as there is fear that witchcraft may be used to terminate the pregnancy. In 2003, Skinner et al discovered that in some cultures, it was inappropriate for the mother in law to be informed of pregnancy until it could be seen. This would make it difficult for a pregnant woman living at the homestead of her mother in law to make a trip to the local ante-natal clinic without arousing her suspicions.

2.2.2 Health system barriers

Even when a pregnant woman realizes and accepts that it is in here best interest to attend ante natal services, there are may yet be other barriers. The first in this case may be access to the required clinic may be hindered. Entry into ante-natal services, like all primary healthcare services in South Africa is free. One may therefore assume that cost is not a barrier for a pregnant woman who wants to go and do her booking. There are other hidden costs to booking and these are discussed below.

The geographical positioning of a clinic may be itself a barrier. A woman must be able to travel to the clinic and this may cost too much for the woman doing a cost benefit analysis of attending the clinic. There are 2 Midwife obstetrics clinics in the township of Khayelitsha. These service quite a large geographical area with about 407000 inhabitants (Department of Social Services and Poverty alleviation, 2005). The trip from the outer reaches of Khayelitsha to Site B MOU may require that one uses a public transport. This transport fare may take time

to save up for, as other pressing financial issues (such as food or accommodation) are dealt with first. So even though the ante natal service is free, booking may be of lower priority. So distance to the clinic may be a barrier. The Provincial Government of the Western Cape has tried to address this problem by offering a satellite service called the Basic Ante-Natal Care (BANC). This has been done with varying success as perception of the service has been that it is not of the best quality (Gebhart, 2008).

Long waiting times are also seen as barriers to attending Ante-natal care in other parts of the world. A study in Australia noted that one of the biggest contributors for dissatisfaction was long waiting times (Laslettet al, 1997). Once there is a perception that there is going to be unnecessary delays at the clinic, it may serve as a deterrent from attending the ante-natal clinic. Some people may simply not have the time to wait for long hours as other important duties like work or taking care of the family and home take precedence.

Healthcare workers' attitudes play a great role in determining how a woman perceives the ante-natal clinic services. When healthcare worker attitudes are bad, they form a barrier to accessing ante-natal care. In a 2009 review of literature, the authors found that the South African health system is characterised by coercive relationships particularly between nurses and their clients (Frizelle at al, 2009). In a study in Zambia the depth of the friction between the nurse and client, can be summarised in the words of one of the clients in the group discussion: " *…sometimes when we come to the clinic we find good hearted nurses; but others are rough even the way they examine you is painful. If you complain about that they throw away your file…"* (Minon et al, 2010).

Clearly such a negative attitude by the healthcare worker is likely to impede the progress of any routine clinical visit. The client may then be forced to leave without getting the relevant clinical care. The result is that she would only return at a later date and an opportunity to book her pregnancy early would have been missed.

Such a woman is more than likely to share her uncomfortable experience with her peers and other community members. Once the perception that the healthcare workers have a nasty attitude has spread in the community, women are likely to delay their attendance at the ante-natal clinic. The damage that this causes is often difficult to reverse.

2.3 CURRENT PRACTICES OF BOOKING IN ANTE-NATAL SERVICES

A research study carried out by a consortium from the Human Sciences Research Council found that up to 97% of respondents said that they had attended the ante-natal clinic at least once. This figures shows that there is generally universal attendance for antenatal care which is a great positive for the country. Of those that attended, it is very pleasing to note that 95.5% of respondents said that they had taken an HIV test.

However, these positive results are overshadowed by the fact that the study showed that 53.5% of these pregnant women booked after 20 weeks (Shisana, O. et al, 2010). More than half the women are booking well into the second trimester. This does not bode well for the PMTCT program as this means that AZT cannot be started at 14 weeks for those that require it.

Another report in 2007 showed that only 63.2% of women in South Africa attended ante-natal care (DOH, 2007). This means that a large number of women are at high risk of pregnancy complications and poor outcomes. Further more, it is of concern to note that in a review in Limpopo province, only 2.9% of the woman booked before 20 weeks. The majority, 58.3% booked in the second and third trimester (Ngomane, S. et al., 2010). In another province in South Africa, Kwazulu-Natal, it was found that only 9% of the women booked in their first trimester while the majority, about two thirds, only did so in their second trimester (Hoque M. et al, 2008). Yet another study from as far afield as Nigeria also noted late booking as the general trend in that country; with the mean booking age being 20.3+6.2 weeks (Adekanle, D., et al, 2008). It is interesting to note that generally women are booking late or are not even attending ante natal services despite the fact that these services are provided free of charge by the South African government.

CHAPTER THREE: METHODOLOGY

3.1 STUDY QUESTION

What are the factors influencing Gestational Age at booking in primi-gravid clients in the Prevention of Mother to Child Transmission (PMTCT) Program at Khayelitsha Site B MOU?

3.2 AIM AND OBJECTIVES

The main aim of this project is to illicit some of the factors that influence the time (as defined by the gestational age) that primi-gravid clients book.

The objectives are:

- To determine each of the clients' gestational ages.
- To determine what are the client factors that influenced the client to book at this specific gestational age.
- To determine what are the health system factors that influenced the client to book at this specific gestational age.

3.3 STUDY DESIGN

For this particular project a qualitative descriptive design was employed. Neither of the variables was manipulated by the experimenter. That is to say; the client and health factors were not adjusted but merely noted and described. Also the time at which the primi-gravid women book was also not under the experimenter's control. Clients came for booking when they decide to do so. So in fact, this is an ex-post facto study. The influencing variables are observed and noted after the fact (Christensen, 2007).

3.4 STUDY POPULATION AND SAMPLING

The study population included all the first time mothers-to-be (Primi gravid) booking at a primary health clinic in Khayelitsha, Cape Town. The primary care clinic used in this study is

Site B MOU. It was chosen because there is a high turnover of clients that are representative of the people in a typical township set up. Further more the clinic has been chosen based on the fact that the highest HIV rates in Cape Town are found in the townships such as the Khayelitsha community. The clinic also has a system for attending to Primi-Gravid clients separately from the other non-first time mothers-to-be. This provided a convenient and easily accessible study population to carry out interviews.

For the purposes of this study a total of 10 clients were individually interviewed. The clients were sampled on an opportunistic basis. All clients that voluntarily accepted to take the questionnaire were used for the study until the pre- determined sample size of 10 was reached.

3.5 INSTRUMENTATION

An interview guide was used to collect data from the study participants. The information obtained was recorded in short notes. The clients were informed that the exercise was voluntary, confidential and consent was sought from the client to do the questionnaire. The questionnaire was carried out on a one to one basis using the interview method and responses recorded by the interviewer. If there was need for translation; a translator was on hand. Other important demographic data was obtained from the client folder to save time. Such data included age, educational status, employment status, marital status and gestational age.

3.6 STATISTICAL ANALYSIS

No statistical analysis was done.

3.7 ASSUMPTIONS

The main assumptions of this research are:

- That the study participants gave views that are representative of the Khayelitsha community

3.8 LIMITATIONS

The limitations of this study are:

- The size of the sample has been limited by the lack of financial and time resources

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 SOCIO-ECONOMIC DATA OF STUDY POPULATION

The total sample size was 10 pregnant Primi-gravid women. The age of the women varied from a minimum of 19 years to 32 years. The mean age of the clients was 22.2 years. Being all first time mothers it is normal for them to be of a lower age range. The average age range would have been even lower had the study not only allowed consenting adults (18 year) to be part of the sample. Sixty percent of the respondents were single while the other 40 % were married. None of the respondents reported themselves to be divorced, separated or widowed.

The level of education was quite advanced for many people living in this community. What was striking though is that 80% of all the respondents had achieved Grade 11 (high school). Only 10% had managed to enter a technikon and complete the qualification. The final respondent had only completed junior school. So all the respondents had some degree of education but none had been to university.

None of the respondents owned the premises that they currently resided in. 40% of the women rented their own accommodation. No distinction was made for married couples who rented their accommodation together. If a respondent was married and effectively the husband paid the rent it was taken as though the respondent rented the accommodation. Of the 10 participants, 6 reported that they fell into the category "other". 5 of them stayed with a relative. The relative most commonly cited was the mothers of the respondents, although siblings were also mentioned as well. One of the study participants who reported "other" when asked if they own or rent their accommodation stayed in a shelter. On further questioning it was established that she was a non-South African staying in a church shelter.

Sixty percent of all the respondents lived in a formal brick under tile homes. The other 40% lived in informal accommodation known as "shacks". These homes are usually made of tin and have cardboards and wooden blocks. These homes usually signify low socio-economic status. The number of people living in these shacks would have been expected to be higher as the neighbourhood is mainly characterised by these shacks.

Seventy percent of the respondents reported that they were employed. No specific characterisation of employment was carried out by the study. It was noted though during the interviews that some were only engaged in part time employment and one reported that she was self employed. Thirty percent were unemployed. None reported to be directly benefiting from the grant system.

The mean gestational age at booking was 20.8 weeks. It was found that the respondent that booked the earliest was at 14 weeks of gestation. The woman who had booked the latest had done so at 31 weeks.

Socio-demographic characteristics of Study population		
Mean Gestational age Recorded on ANC card (weeks)		20.8
1. Mean Age (years)		22.2
	n=10	**%**
2. Marital status:		
Single (never married)	6	60
Married	4	40
Widowed	0	0
Divorced	0	0
Separated	0	0
Other	0	0
3. Level of education:		
No education	0	0
Elementary school	1	10
High school	8	80
College or technical school	1	10
University	0	0
4. Do you own or rent a house/apartment?		
Own a house	0	0

Own an apartment/room	0	0
Rent a house	4	40
Rent an apartment/room	0	0
Other (specify-parents/guardian)	6	60
5. What type of accommodation do you live in?		
Formal house/flat	6	60
Informal	4	40
6. Source of income		
Employed	7	70
Unemployed	3	30
Grant	0	0
Other (specify)	0	0

4.2 RESULTS FROM THE INTERVIEWS

4.2.1 General Perceptions

It was clear from the interviews that many of the women were aware that they were pregnant for more than 14 weeks. This is measured from the time that they knew through to the time they presented at Site B clinic. (This is the time of the interview). The reasons given for the time lapse from knowing one is pregnant to booking varied from woman to woman. One expecting mother said she could not afford to come to the clinic up until now. Her response was: "*...out here in the township we have no money. I live far from this clinic and I had to wait to have enough money.*" Other reasons given included:

- Inability to get time off work to come to the clinic. The mother works full time during most weeks particularly through the busy festive season. She was not able to negotiate with her boss to get time off work during the working week (Monday to Friday). The clinic is only open during the working week and when she did get time off it was usually a Sunday when the clinic was closed

- Another woman, who was a foreigner, said that she did not know where to go to book her pregnancy. In the end, a colleague who she met eventually told her to come to Site B clinic.

- A young 23 year old woman who was currently staying with her parents said she was too afraid to tell her parents that she was pregnant. As a result she could not go to the clinic. She summed it up by saying: "…*My parents do not know my boyfriend and they were not expecting me to get pregnant. I only told them because I could no longer hide that my stomach was becoming bigger."* When a woman is dependent on her parents or siblings, it would appear that there is some fear in telling them that one is pregnant. This is possibly because they fear that the parents may be unhappy or unable to take car of another dependant. The unborn baby would be another hungry mouth to feed in a situation where resources may already be stretched to the limit. The expectant mother may not be keen to go and book the child as she may be contemplating what action to take. The same respondent also said that she considered abortion but failed to go through with it.

- Another reason given for the time lapse between knowing that one is pregnant and booking was that one was simply not sure she was pregnant. One of the study participants noted that she was not sure that she was pregnant. In her words she said, "*I did have some bleeding here and there and assumed it was my periods as I tend to be irregular. It is only when I started feeling movements inside that I thought that I might be pregnant."* From this we can see how one might delay their booking at the local ante-natal clinic if they are not aware that they have become pregnant. In this case the respondent realised she was pregnant because she felt foetal movements. This in medical terms is referred to as quickening and this only happens at 13 to 14 weeks of gestation. In first time mothers these movement may only be perceived at 18 to 20 weeks.(American Pregnancy association). Many other symptoms of pregnancy are vague such as nausea, morning sickness, feeling of bloatedness and water retention. It means that they are an unreliable way of detecting that one is pregnant. For many women this may be the only way that they realise that they are pregnant. Such an unreliable way of detecting pregnancy means that many women find out later then they should that they are carrying a foetus. By the time they do so it has grown significantly and booking is held off until much later in pregnancy.

A very overt sign that one is pregnant is when one misses her period. However, commonly used contraceptives such as the progesterone injectables, can cause irregular vaginal bleeding. As stated by the above study participant in her interview, she was bleeding "here and there" and assumed it was her period. It is therefore a possibility that use of such contraceptives may lead to women not being aware of their menstrual cycles. As a result they are unable to perceive missed periods and possible pregnancy. When they do awake to the fact that they may be pregnant the foetus may have already grown and booking is therefore done at a later gestational age. Access to PMTCT would, in such a case, be delayed.

4.2.2 Thoughts and feelings around pregnancy and disclosure.

An overwhelming majority of the woman interviewed (7) reported that they were "surprised" when they found out they were pregnant. When probed further it became clear that the surprise was because many of the women had not planned to get pregnant when they did. The effect of this surprise was to actually delay booking. One of the respondents commented that she would have come earlier but she was still dealing with the disturbing news of her unplanned baby. She reported, "*I did not expect to have this baby. I did not know what to do.*" It would seem that the shock was paralysing to some of the study participants and it is only after they overcame this shock that they could follow the protocols such as booking at the ante-natal clinic. Of the 3 that reported that they had planned their pregnancy, none of them had booked before 20 weeks. It would appear therefore that the fact that they had planned their pregnancy did not have a bearing on booking early. They booked at more or less the same time as those that were unplanned.

All the 10 study participants interviewed had at least disclosed to someone that they were pregnant. The first person that they disclosed to was either their mothers (40%) or husbands (40%). 2 (20%) women reported that they informed a sibling. All reported that the first person to whom they disclosed their pregnancy to was supportive. The 23 year old woman who had been initially cautious in telling her parents about the pregnancy found her parents to be supportive. She noted, "*After I told my mother she told my father. I was scared but they did not shout at me. I wished I could have told them earlier.*" It would appear that the fear of disclosure to people who may turn around and be unsupportive can delay the disclosure itself. As one respondent remarked "*I could have accepted that I am pregnant earlier if I had told*

my husband. Instead I just ignored the pregnancy until I could no longer hide it from him." It is this denial that can delay booking. The consequence of booking late is that the opportunity to enter the PMTCT program is delayed.

The study participants were all aware that they were HIV positive when the interview was conducted. 70% had found out on booking (also the day of the interview), that they were HIV positive. 30% knew that they were positive prior to booking. There was no notable difference in their gestational age at booking in the 2 groups. The majority of the study participants only found out their HIV status on this booking visit. What this shows is that testing of pregnant women in the PMTCT program was providing a very important gateway for HIV testing. It is a large pool of sexually active women who are vulnerable to HIV infection.

4.2.3 Knowledge and Perceptions of the Ante-Natal Services.

When study participants were asked in the interview whether or not they felt that the clinic was accessible there were varying responses. One woman reported, *"There are many taxis that come to this clinic so it was easy to come here*." Yet another (who was a recent immigrant to Cape Town) responded by saying, *"I would have come to this clinic but I did not know where it was."* The second response shows that accessibility is a key factor in booking. A woman who may want to book early but if she does not know where the service is, she cannot do so. This may cause the woman to book at a later gestational age.

Another important factor that seems to play a role in influencing gestational age at booking may be the source from which an expectant mother finds out about the ante-natal services. From the interviews most of the participants had found out about the ante-natal service from their mothers. A few others had heard about the service from their friends and peers. It was interesting to note that none of the respondents cited the media, electronic or otherwise as a source of information. The danger of this is that word of mouth may have a degree of bias or misconception. "*My mother told me that I should come here when I am 22 weeks.*" This response from one participant was echoed by a number of women that were interviewed. It appears that there is a genuine misconception within the communities with regards to the correct time one must go for booking. There may yet be other mistruths that the interviews did not pick up.

All the participants noted that this was their first visit to the clinic and none of them had been there before. None of the participants had ever been turned away or come to the clinic with the intention to book and found it closed. When asked to comment on service as a whole, the participants felt that the staff had been helpful and friendly. There was however an expectation that the booking process is a full day's exercise. One of the mothers-to-be said, "*The nurses have been helpful but I knew even before I came here that I would be stuck here the whole day."* Her expectations were fulfilled. The booking mothers arrive very early before 7am and usually leave after the last prenatal class at 3pm. This in itself may discourage a woman from booking as she dreads the idea of spending an entire day at the clinic. This is more so in early pregnancy when the symptoms of pregnancy such as nausea and fatigue are most prominent. She may postpone booking till much later when the gestational age is much higher. This will mean that she will enter the PMTCT program later than she should.

4.2.4 Culture and Personal Beliefs

Many people will often follow their culture and societal norms when dealing with personal issues like marriage and dealing with a death of a loved one or family member. It would come as no surprise that many women may look to follow their culture or societal norms when dealing with their pregnancy and birth of their baby. In the interviews, a few interesting themes came up. When asked if they thought that telling people early about your pregnancy would cause some sort of bad luck, 3 respondents agreed. One of the women added, "*I have always been told that a woman should wait before she starts going around telling people she is pregnant. She will become a target for those that hate her."* When asked what she meant by target, she made reference to witchcraft. In this way culture may lead to a woman concealing the fact that she is pregnant for as long as she can. Going to the ante-natal clinic is a clear way of proclaiming to the community that one is pregnant. So the booking at the clinic is often delayed and the gestational age of the foetus will continue to rise. Mothers-to-be will often present only when the "baby bump" can be seen. This is often long after the 14 weeks of gestation when PMTCT should be started.

Personal beliefs or appreciation of pregnancy and child birth, are factors influencing when a pregnant woman will go the local clinic to book. The woman must be able to perceive that there is a benefit for her and her unborn baby to make the effort to go to the local clinic. In early pregnancy when changes to her body are still minimal she may not feel that there is any need to go to the clinic. As the pregnancy progresses and physical signs become harder to ignore she may then choose to go and check if the pregnancy is fine at the clinic. When asked why she came today and not any other day the one woman said, "*I wanted to see that my baby was growing well. I was getting worried."* This could be taken to mean that she was not concerned in the early part of pregnancy when the foetus was imperceptible to her. Once the idea that it was a growing baby became tangible, she felt the need to go to the clinic. This change in appreciation of the unborn baby can influence when the woman books.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

The complete success of the PMTCT program would be an important developmental milestone in the fight against HIV/Aids, particularly in Sub-Saharan Africa where there are 1.8 million children under 15 years age are living with HIV.(UNAIDS, 2010) From a developmental point of view, PMTCT is directly related to 3 of The Millennium Development Goals (MDG); namely:

4th MDG: Reduce by two thirds the mortality rate of children under 5
5th MDG: Reduce by three quarters the Maternal Mortality Ratio
6th MDG: Halt and begin to reverse the spread of HIV. (WHO, 2007)

Definitely the importance of each stage of the PMTCT program can not be overstated. Further more, it goes without saying that it is the entry point that is most fundamental and this entry point is when mothers book for the first time at their clinic.

The reduction in transmission to babies is encouraging for those who have the virus. It allows them to have fulfilling lives where they too can leave a legacy like any other person.

The sample size (n=10) used in this study may be too small to make any concrete conclusions, but the study certainly provides insight into some of the factors that are influencing when women book. The study found that socio-economic factors influence the gestational age at booking. It was found that, while ante-natal services are free, transport to them was not free. In addition, some of the women could only attend the clinic when they could get time off work. These socio-economic factors are hard to address in a country filled with so many equalities. Perhaps the recommendation would be to provide more ante-natal clinics that are more accessible to people. While it may be expensive, having longer opening hours at clinics may make it more convenient for women to attend after work for example. Opening on weekends would definitely assist those that work during the weeks. South Africa is already burdened with a bloated grant system but perhaps a specific grant for women that are pregnant may allow them money for transport to clinics for booking and ante-natal checks.

There were some respondents whom reported that they were unable or afraid to disclose their pregnancy thereby delaying their booking. This was particularly apparent in younger women or women that were dependent on parents, siblings or partners for a living. The

recommendation of this study is that more life skills training should be done in schools, churches, clubs or communities. The training should cover how to cope with pregnancy, disclosure and the importance booking at ante-natal clinics. This also provides another opportunity for education on ante-natal services including when and where to access them. The study found that some women delayed their booking because they simply did not know when and where to go. Education should also address contraception and how to detect that one has become pregnant. Some study participants reported that they did not know they were pregnant and only did so at a later gestational age thereby delaying their access to services.

The government should encourage and educate more people about contraception and its use. This is not a new recommendation as many sectors have been calling on governments to do this world wide. It deserves special mention here because it was noted that 70% of the study participants had not planned their pregnancy. This resulted in some degree of surprise, shock and to some extent denial. The result is that women were booking later, possibly, after they have dealt with their emotions.

In conclusion, this study has found that there is a myriad of factors that influence gestational age at booking. If the PMTCT program and the Ante-natal Care program are to be successful some of the above recommendations should be adopted. The factors are very complex and are interlinked. This makes it very difficult to pin point what exactly would make women book early so that they can be part of the PMTCT program. More in-depth qualitative research needs to be done to fully elucidate the interplay of factors that influence gestational age at booking and how these factors can be manipulated to encourage booking in the early part of pregnancy.

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Appendix A

DEMOGRAPHIC DATA SHEET

HIV POSITIVE PRIMI-GRAVIDA DATA SHEET

Date___________/_________________/___________ ID Number____________

DD MM YYYY

Gestational age Recorded on ANC card__________________

1. Age_____________

2. Marital status: ____Single (never married) ____Married ____Widowed

____Divorced ____Separated ____Other

3. Level of education: ____No education ____Elementary school

____High school ____College or technical school

____University

4. Do you own or rent a house/apartment?

____Own a house ____Own an apartment/room

____Rent a house ____Rent an apartment/room ____Other (specify-parents/guardian)

5. What type of accommodation do you live in?

_______Formal house/flat ___________Informal

6. Source of income

_______ Employed __________Grant _________Other (specify)

INTERVIEW GUIDE FOR PRIMI GRAVID HIV POSTIVE PATIENTS

Specific Aims: To establish the factors influencing the gestational age at booking in Primi-gravid clients at Site B MOU in Khayelitsha

General/Opening Statement

The purpose of this interview is to help us find out some of the reasons why you chose today to book at this clinic. All your answers will remain confidential. Speak freely and ask questions where ever you need clarity.

Specific Questions

1. When did you first become aware that you were pregnant?
2. In your words what is the reason for the time lapse from the time that you found out you were pregnant and the time of booking today?
3. Describe your thoughts and feelings, when you first became aware that you were pregnant.
    a. Were you happy, surprised, worried, angry or sad and why?
4. Who was the first person you told about your pregnancy?
    a. What was their initial response?
    b. Upon finding out you were pregnant is there any one that you told who was unsupportive?
5. Were you aware that you were already HIV Positive prior to booking today?
    a. Did the fact that you knew or did not know your HIV status influence your coming here today? If this is so, how did it influence it?
6. What is it that made you come today and not any other day to book your pregnancy?
7. From where did you find out about booking and the ante-natal services?
    a. Did the source of this information influence your decision to book today in any way?
8. Are there any comments or advice from your elders that encouraged or discouraged you from coming today?
    a. Cultural beliefs?
    b. Personal beliefs?
    c. Do you think it is bad luck to tell people about your pregnancy early/before it can be seen?
9. Are there any financial stresses that made you come today to book?
    a. Did you not have enough money for transport?
    b. Were you too busy trying to earn money and could not set time aside to do the

booking?

10. Have you come to this clinic or any other antenatal service before to try to make this booking and failed?
    a. Were you turned away by a member of staff?
    b. Was the attitude of any of the staff members discouraging?
    c. Did you have to wait too long and you eventually gave up?
    d. Was the clinic closed? If so what was the reason for it being closed?
11. Do you feel that this clinic is easily accessible?
    a. Distance?
    b. Cost?
    c. Friendly welcoming staff?
    d. Efficient use of time? (queues, clearly communicated sequence in the booking process)
12. Is there anything else you would like to add or share with me before ending the interview?

Example of Probing Questions

What do you mean by...? What do you feel when...?

Tell me more about... Why?

What else was going on then? Give me an example?

That is really interesting.

I don’t quite understand, but you said earlier...