

UNIVERSITY OF CAPE TOWN

Male partner involvement during pregnancy: The missing component in PMTCT adherence in Khayelitsha?

Master of Public Health (Epidemiology):
Mini-Dissertation

Kirsty Brittain
Student number: BRTKIR004
MPH (Epidemiology)
University of Cape Town

Supervisor: Dr Kathryn Stinson

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Abstract:

Introduction

In order to achieve the virtual elimination of mother-to-child transmission of HIV (MTCT) in South Africa, novel approaches to improving prevention of mother-to-child transmission (PMTCT) programme outcomes are needed. One such approach which has been promoted in other settings is male partner involvement (MPI), and there is some evidence that MPI has a positive effect on pregnant HIV-infected women's adherence to antiretroviral (ARV) regimens. In South Africa, however, little is known regarding the extent and effect of MPI. This study aimed to investigate disclosure, adherence, and MPI during pregnancy, with a view to exploring the associations between these variables as well as the feasibility of MPI.

Methods

A quantitative survey ($n=170$) and two focus group discussions (FGDs, $n=7$ and $n=9$ respectively) were conducted in a public sector antenatal service in Khayelitsha, South Africa, in 2013. Pregnant HIV-infected women attending an antenatal visit were approached to participate. Two multiple logistic regression models were built in order to investigate the predictors of disclosure and MPI respectively. FGDs were analysed using thematic analysis.

Results

Of the 170 survey participants, 74% had disclosed their status to their partner. In multivariate analysis, disclosure was significantly more likely among participants who knew their partner's status (AOR: 8.8; 95% CI: 3.1-25.1); and those who reported higher levels of HIV-related discussion with their partner (AOR: 18.2; 95% CI: 6.6-50.1). The FGD participants emphasised barriers to disclosure, with the primary barrier being that of fear, but also discussed the necessity of disclosing.

All of the survey participants were taking ARVs, and 79% reported that they had not missed a dose during pregnancy. Adherence was significantly higher among older participants ($p=0.008$). Most participants received adherence support from their partners.

The survey participants reported high rates of MPI, with most indicating that their partners provided financial support for their antenatal visits (85%); knew when their antenatal visits were (95%); discussed with them what happens during the visits (96%); and had discussed with them ways to prevent MTCT (89%). Fewer participants reported that their partners accompany them to antenatal visits (35%). In multivariate analysis, high involvement was significantly more likely among participants who were cohabiting with their partners (AOR: 7; 95% CI: 2.0-24.0) and those who reported higher levels of HIV-related discussion with their partner (AOR: 13.2; 95% CI: 3.8-45.4).

Participants in the FGDs discussed ways in which partners can be supportive during pregnancy, but acknowledged that some partners are not supportive, and that support, when provided, is often limited to pregnancy. Participants discussed their desire for their partners to accompany them to antenatal visits, but acknowledged health facility barriers to this.

Conclusion

Rates of MPI are fairly high in this population, and MPI appears to be feasible in this context, suggesting the potential to include MPI interventions within PMTCT programmes. However, interventions should aim to increase involvement in a variety of activities, and should not focus on antenatal attendance alone. Opportunities to facilitate communication within couples are needed, and interventions need to be appropriate to the nature of these relationships.

Acknowledgments:

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PART A: PROTOCOL

Introduction:

Background and justification:

The South African National Department of Health and the South African National AIDS Council presented their revised clinical guidelines for the prevention of mother-to-child transmission (PMTCT) of HIV in 2010. These guidelines are in line with international recommendations for the care of mothers and their infants in the context of HIV, and include recommendations for antiretroviral therapy during delivery as well as for both antenatal and postnatal care [1]. PMTCT programmes which are based on these guidelines can significantly reduce the risk of transmission of HIV from an infected mother to her child [2].

However, it is argued that despite the implementation of PMTCT programmes, as well as the recent increase in the coverage of the programmes nationally [3], mother-to-child transmission of HIV (MTCT) in South Africa is still high in terms of the country's goals [4]. Globally, the aim is to reduce the incidence of HIV infection in children by 90% by 2015 [5], and the aim in South Africa is to reduce MTCT to less than 2% at 6 weeks of age and less than 5% at 18 months of age [3]. The aim in South Africa is to achieve these reductions by 2016, and the country thus still has a way to go, as MTCT at 6 weeks of age was 3.6% in 2010 [4]. It is thus necessary to investigate novel approaches to improving PMTCT programme outcomes.

Questions have been raised regarding the impact of male partner involvement (MPI) in the context of PMTCT. It is argued that although it has been acknowledged that MPI is important, little is known about the extent of involvement and about the affect which it has [2]. One of the aims of the South African guidelines for PMTCT is to involve women's partners and families in PMTCT services in order to ensure a comprehensive approach [1],

however, the guidelines do not put forward comprehensive recommendations as to how to achieve this.

Both the National Strategic Plan on HIV, STIs and TB and the National Action Framework for ‘No Child Born with HIV by 2015 & Improving the Health and Wellbeing of Mothers, Partners and Babies in South Africa’ highlight the need to strengthen PMTCT programmes by involving and engaging with men, for example by increasing their participation in PMTCT services and antenatal clinics [3, 4]. These echo the UNAIDS Global Plan, which also argues that a comprehensive prevention and treatment approach must include the support and involvement of men in PMTCT programmes [5]. However, as stated above, comprehensive recommendations have not yet been put forward as to how to achieve this, as little is currently known about the state of MPI in the context of PMTCT, as well as what is feasible in terms of this involvement in South Africa.

For example, it has been argued that antenatal clinics in South Africa have been constructed as a female domain in which male attendance has traditionally been discouraged for cultural and health service delivery reasons, which has resulted in reproductive health services becoming inaccessible for men [6]. These issues thus need to be explored if MPI in antenatal care is to be encouraged. In addition, couple counselling and testing has been put forward as an important strategy in South Africa [3, 6]. As with MPI, however, little is known about the feasibility of this recommendation.

Although rigorous PMTCT guidelines have been put forward, studies have shown that adherence to these guidelines is suboptimal in terms of adherence to antiretroviral (ARV) regimens in South Africa. For example, a recent study conducted in Mpumalanga found that

61% of pregnant women and 85.9% of postpartum women reported complete adherence to AZT in the four days before they were interviewed or in the four days before delivery, and that only 26% of antenatal women had never missed a dose of AZT during their pregnancy [7]. Lack of MPI was identified in this study as one of the factors which may negatively affect adherence [7].

However, studies which address MPI define 'involvement' in different ways. For example, a study conducted in KwaZulu-Natal included proposed activities such as male partners accompanying women to the clinic during pregnancy and postpartum, and being present during labour and delivery, and found various degrees of willingness to be involved in each activity [6]. A study conducted in Uganda similarly included the activity of attending antenatal care as being indicative of MPI, but also included activities such as partners discussing antenatal PMTCT interventions and men providing financial support for antenatal visits in order to assess MPI [8]. In addition, a study conducted in Kenya included couple counselling and testing as a form of MPI [9].

It is thus clear that MPI can refer to a range of activities within the context of pregnancy, and has not been clearly defined. In addition, it is argued that fatherhood within the context of HIV has not been adequately studied, particularly in terms of the role that fathers play [10]. Given the constantly changing roles of parents in South Africa [11], and particularly the added burden of parenthood in the context of HIV, more research is needed regarding the male role in the context of PMTCT and subsequent fatherhood. This research is particularly needed because of the positive impact which MPI appears to have on adherence to the guidelines for PMTCT [7, 12].

Although MPI appears to play an important role in women's adherence to PMTCT guidelines, male partners must first have been informed of their partners' HIV status in order for them to be involved in activities related to PMTCT. Studies conducted in various countries throughout Africa have found that the rate of women's disclosure of their HIV status to their partners is low, and a study conducted in Pretoria found that only 48% of HIV-positive pregnant women with partners had disclosed their status to their partners, and that this increased to 67% at follow-up three months postpartum, although there was loss to follow-up in the study [13]. Although various studies have explored the predictors of and barriers to disclosure in various countries throughout Africa, there has not been much exploration in South Africa of these factors and of issues such as the timing of disclosure and the differences between disclosing to a male partner compared to another family member or friend [13]. There is thus a need for research into these issues in South Africa.

It is evident from the discussion above that there are several factors which are involved in women's adherence to the guidelines for PMTCT, including MPI in PMTCT, the male role in the context of PMTCT, and women's disclosure of their HIV status. However, these factors have not been adequately researched in South Africa, even though it has been acknowledged that they are important in increasing adherence to the PMTCT guidelines and thus in reducing the risk of the vertical transmission of HIV. The proposed study seeks to address these gaps in the literature by exploring these issues in the Western Cape.

Aim:

This formative research aims to explore the concept of MPI in the context of PMTCT from the perspective of pregnant women in order to generate a broader understanding of women's experiences of MPI. Specifically, this study aims to explore disclosure, adherence, and MPI

during pregnancy, with a view to examining the associations between these variables as well as exploring the predictors of each. Currently, the antenatal guidelines for PMTCT are that pregnant women adhere to either a dual regimen of short-course PMTCT prophylaxis, which includes AZT and a single dose of Nevirapine, or continue with their triple regimen of lifelong ART, depending on their clinical stage of HIV, as defined by WHO, and their CD4 count [1]¹. In addition, the proposed study aims to explore issues surrounding HIV testing and the feasibility of couple counselling and testing.

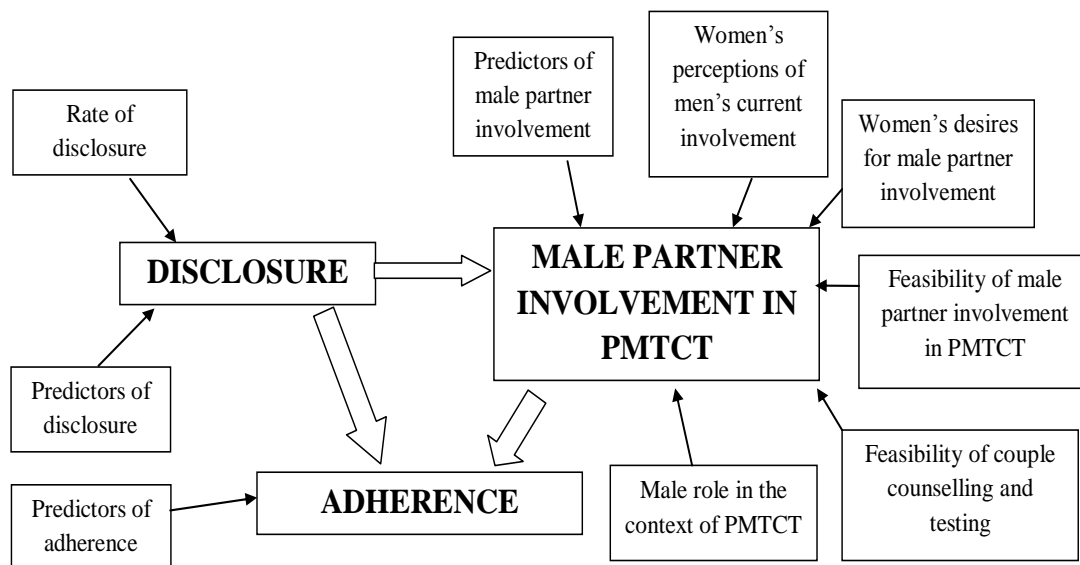
Objectives:

The objectives of the proposed study are as follows:

- To explore the rate of pregnant women’s disclosure of their HIV status to their male partners, as well as the predictors of disclosure.
- To explore the extent and predictors of women’s adherence to ARVs during pregnancy.
- To explore the concept of pregnant women’s perspectives of MPI during pregnancy in terms of men’s current involvement, as well as women’s desires for their involvement, in order to provide insight into the male role in the context of PMTCT.
- To explore the predictors of MPI in the context of PMTCT.
- To provide insight into the feasibility of MPI and couple counselling and testing in the context of PMTCT.

¹ Subsequent to the drafting of this protocol in 2012, updated PMTCT guidelines adopting the “Option B” approach were released and implemented by the National Department of Health (2013). Fixed-dose combination ARVs were rolled out in South Africa, with pregnant women being among the first group of patients to be initiated on this regimen at the time of data collection in 2013 [National Department of Health. Changes in the antiretroviral therapy regimen in South Africa: fact sheet for civil society and the PLHIV sector. Pretoria: National Department of Health; 2013.]

A schematic representation of these objectives is as follows:



Methods:

Research design:

The proposed study is a mixed methods study, as both quantitative and qualitative methods will be used in order to collect data.

The quantitative component will involve conducting a survey in order to collect data regarding issues such as women’s disclosure of their HIV status and the predictors and barriers associated with this disclosure, MPI in the context of PMTCT, as well as adherence to ARVs. The quantitative nature of this component will enable an investigation of these different issues on a wide scale, and will enable a statistical investigation of the associations between the different variables.

Before collecting data, the questionnaire which will be used for the quantitative component of the proposed study will be piloted in order to ensure that it will generate the data needed, as well as to identify any problems with the data collection method or with the questions themselves. The piloting stage will thus be used in order to refine the questionnaire and address any problems regarding the data collection method before conducting quantitative data collection.

The qualitative component will involve conducting focus group discussions (FGDs) in order to generate a more in-depth exploration of the issues of decision-making in the context of PMTCT, the male role in pregnancy, issues surrounding HIV testing, as well as the feasibility of MPI in PMTCT and of couple counselling and testing. FGDs, as opposed to individual interviews, were chosen as it is believed that they will give rise to richer data as a result of the content arising from group processes and discussions.

Study site, population, and sampling:

The study population for the proposed study comprises of HIV-positive pregnant women who are attending one public sector primary-level antenatal service in Khayelitsha, South Africa. From this site, HIV-positive pregnant women will be recruited to participate in the study. Because of the sensitive nature of HIV-infection, a convenience sample will be recruited. The assistance of nurses or other health care providers will be sought in order to identify eligible participants for the quantitative component of the study. These eligible participants will then be invited to participate in the study. For the qualitative component of the study, the assistance of support groups for HIV-positive pregnant women, namely mothers2mothers, will be sought in order to identify eligible participants. Again, these eligible participants will

then be invited to participate in the study. For both components of the study, women will be eligible to participate if they are HIV-positive, are pregnant, and have a male partner.

For the quantitative component of the proposed study, a sample size calculation could not be performed because of the lack of an estimate of the proportion of antenatal PMTCT adherence in Cape Town. Taking into account the exploratory nature of this study, the sample size will thus be set at between 150 and 200 women, taking into account feasibility stemming from the proposed study. The final sample size for the survey will be constrained by the time and cost needed to recruit participants, as the proposed study is of a formative nature. In order to pilot the questionnaire before conducting data collection for the quantitative component of the study, a sample of 10 women will be selected.

For the qualitative component of the proposed study, two FGDs will be conducted, with each FGD consisting of 6-12 women. Participants for the FGDs will be recruited at the antenatal service from the same population as those recruited for the quantitative component of the study.

Data collection:

As stated above, a survey will be conducted in order to collect data for the quantitative component of the proposed study. This survey will be an interviewer-administered questionnaire, in order to minimise any bias which may result from participants not fully understanding what is being asked of them.

The questionnaire, which has been composed specifically for the proposed study, is composed of questions related to variables and factors which, according to the literature, are

important in the issues which the study aims to explore. The questionnaire will begin by asking socio-demographic questions in order to provide information about the sample and to provide information on variables which may be predictors of disclosure or adherence. In order to explore the predictors of and barriers to disclosure, questions will be asked regarding variables such as socioeconomic status and the nature of women's relationships with their male partners, both of which have been found to be predictors of disclosure [13]. Questions will be asked regarding women's disclosure of their HIV status to their male partners as well as to other significant people in their lives. These questions will address issues such as the timing of disclosure, as well as the reasons for disclosing or for not disclosing. In addition, questions regarding whether or not women know their male partners' HIV status and whether or not they have discussed with their partners ways to prevent HIV transmission will be asked in order to explore issues regarding gendered power relations and the nature of women's relationships with their male partners.

Questions based on the NIAID AIDS Clinical Trials Group Adherence Interview [14], which aims to assess adherence to ARV regimens, will be asked. However, these questions will be simplified by asking women about their adherence to combined doses of ARVs rather than to each ARV drug individually. This simplification is deemed necessary, given the possibility of difficulties with recall and the fact that pill counts in order to assess the validity of self-reported adherence will not be feasible given the nature of this study. Although the questions regarding adherence will be based on self-report, the questions have been validated in clinical trial settings, and should thus elicit valid information regarding ARV adherence. In order to further ensure that this information is valid, questions will be included to cross-check the consistency of responses regarding adherence. Questions will also be asked regarding the

reasons for adherence or non-adherence, as well as the difficulties encountered in attempting to adhere to these regimens.

Finally, questions will be asked which will provide insight into the male role and MPI in the context of pregnancy and PMTCT. These questions will be based on how MPI has been operationalised in previous studies [6, 8]. The questions will focus on current MPI, what women would like in terms of MPI, and what their communities deem as being normative in terms of MPI.

Throughout the questionnaire, a combination of both forced-choice and open-ended questions will be used. Open-ended questions will be included because of the complexity of the issues which will be explored, as not all possibilities may be covered by forced-choice questions, and it is important that the participants' views and experiences are not constrained by this. As mentioned above, an interviewer will administer the questionnaire in order to minimise any bias which stems from participants not understanding what is being asked. The interviewer will be trained beforehand in the administration of the questionnaire, and it will be ensured that he/she is fluent in isiXhosa, the predominant language spoken in Khayelitsha. The questionnaire will be administered in either English or isiXhosa, according to each participant's choice. In addition, as mentioned above, the questionnaire will be piloted in order to identify any problems regarding the data collection method or the questions themselves, and will then be refined before data collection is conducted.

The qualitative component of the proposed study will make use of two FGDs, each of which will be approximately 1 – 1½ hours in duration, where the participants will be pregnant women from the same population as the women in the quantitative component. The FGDs

will be conducted in isiXhosa, the local language of the participants, and will be subsequently transcribed and then translated into English in order to be analysed. The discussions will thus be facilitated by an experienced research assistant who is fluent in isiXhosa. The researcher will, however, be present during both components of data collection in order to address any concerns which may arise during the process of data collection.

The focus of the FGDs will be the objectives of the proposed study which are better suited to qualitative methods. A semi-structured interview guide will be used for this purpose, and will involve an exploration of issues pertaining to decision-making in the context of pregnancy and PMTCT, factors surrounding HIV testing and disclosure, the feasibility of couple counselling and testing for HIV, as well as a broader exploration of MPI in the context of pregnancy and PMTCT. The focus throughout this exploration will thus be on issues such as the nature of women's relationships with their male partners, gendered power relations within these relationships, and gender roles and norms.

It is believed that using FGDs will allow a more in-depth exploration of these issues than will be possible using the quantitative survey. However, it is also believed that the two components of the proposed study will be complementary and will generate rich data, both quantitative and qualitative, pertaining to issues about which little is known in South Africa.

Data management:

A database will be created using the data generated by the quantitative component of the proposed study. The data will be captured and quality assurance will be performed by checking a random 10% of the questionnaires for data capturing errors. As stated above, the qualitative FGDs will be transcribed verbatim and will then be translated into English before

being coded and analysed. Both the database and the transcriptions will be securely stored, and access to both will be based on the need of those involved in the research in order to ensure confidentiality.

Data analysis:

In order to analyse the data generated by the quantitative component of the proposed study, both univariate and multivariate analyses will be conducted using STATA version 12 (StataCorp Inc, College Station, Texas, USA). This will be done in order to explore the concepts of disclosure, adherence, and MPI individually, as well as to explore the predictors of these outcome variables. As all three factors are operationalised as categorical outcome variables for the purpose of the proposed study, chi-squared tests will be used for the purpose of exploring the associations between these variables and the various predictor variables. In addition, regression analysis will be used in order to explore the variables which best predict these factors. The selection of predictor variables for the regression analyses will be based either on the significance of the variables as found during bivariate data analysis, or on their importance in predicting these outcomes as identified in the literature.

In order to analyse the data generated by the qualitative component of the proposed study, thematic analysis will be conducted using the transcriptions of the FGDs. The discussions will be analysed according to the broad topics stemming from the interview guide as well as according to the repeated themes which emerge during the course of the thematic analysis. A coding scheme will be developed according to the repeated themes which emerge, and this scheme will be used for further coding, while being modified according to new themes which may emerge, until a point of saturation is reached [15]. Qualitative data analysis will thus follow a process that is both inductive and deductive, as it will involve a process of

continually refining the coding scheme and analysing the data according to this scheme in order to develop themes relating to each of the topics discussed during the FGDs.

Although the two components of the proposed study will be analysed separately, these analyses will then be interpreted simultaneously, as it is believed that the two components will provide data which is complementary. The quantitative data will thus be used in order to generate an estimate of the extent and predictors of disclosure, adherence, and MPI in the study population, while the qualitative data will be used in order to generate a more in-depth understanding of these concepts. As little is known about the extent of and issues surrounding these factors in South Africa, these complementary approaches and outcomes are needed.

Ethical issues:

Ethical approval for the proposed study will be obtained from the Faculty of Health Sciences Human Research Ethics Committee. Once this approval has been obtained, provincial approval for the study will be obtained from the Western Cape Department of Health in order to conduct the study in the proposed antenatal service in Khayelitsha.

The ethical principles which will be adhered to at all times during the proposed study will be those stated in the Declaration of Helsinki, which was developed by the World Medical Association for medical research involving human participants [16]. It will thus be ensured that the well-being of each individual participant takes precedence over all other interests [16]. In addition, the proposed study will be guided by the ethical principles and guidelines set out in the Belmont Report, namely those of respect for persons, beneficence, and justice [17].

Many of the potential ethical issues which will need to be addressed while conducting the study are related to minimising participant distress, thereby minimising any harm to participants. When selecting participants for the study, the assistance of nurses or other health care providers will be sought, as mentioned above. Eligible participants will be approached discreetly after being identified, so as not to reveal their HIV status. Eligible participants will be given an information sheet, available in both isiXhosa and English, explaining the purpose and nature of the study and containing contact details of the researchers, and after it has been ascertained that the information is clearly understood, eligible participants will be invited to participate in the study. It will be made clear that participation is voluntary and that the study is not being conducted by the antenatal service, and thus that the decision of whether or not to participate in the study will not impact on the women's antenatal treatment in any way. After it has been explained that participation is voluntary and that participants are free to withdraw from the study at any time, participants will be required to sign an informed consent form, again available in both isiXhosa and English. Separate information sheets and informed consent forms will be used for the two different components of the study.

During quantitative data collection, the questionnaire will be administered by an experienced interviewer who is sensitive to the context of the study and who has received training, both in HIV information and counselling skills and in terms of the specific questionnaire which will be used for the study. The questionnaire will be administered to participants in either isiXhosa or English, according to their choice, and this will take place in a private room located within the antenatal service, at the participants' convenience. Participants will not be required to provide their names and will be identified in the data using only numbers in order to ensure anonymity and confidentiality.

At the beginning of each FGD, the importance of confidentiality will be discussed with the participants. An experienced assistant who is similarly sensitive to the context of the study will facilitate the discussions in isiXhosa. When transcribing the FGDs, participants will be referred to using pseudonyms in order to maintain anonymity and confidentiality. Data from both components of the study will be securely stored, and access to the data will be based on the need of those involved in the research.

Although individuals will not receive any benefits from participating in the proposed study, it will be ensured that justice arises from the study by timeously disseminating the results of the study to stakeholders such as local authorities in order to inform health policies regarding PMTCT. It is thus hoped that the results of the proposed study will lead to improved services for PMTCT in this community. This will be explained to all eligible participants.

Budget:

Budget for Proposed Study			
Item	Cost per unit	Number of units	Total cost
Field worker	R60/hour	140 hours	R8400
Translation services	R60/hour	4 hours	R240
Transcription services	R60/hour	25 hours	R1500
Mileage	R3.16/km	35 visits to study sites (approximately 40km/visit)	R4424
Photocopying	R0.30/page	1000 pages	R300
Refreshments for participants			R800
Total			R15664

Funding for the proposed study is available in the form of a University of Cape Town Research Development Grant.

Time frame:

Time Frame for Proposed Study														
	January	February	March	April	May	June	July	August	September	October	November	December	January	February
Departmental and ethical approval	█													
Department of Health approval		█	█	█										
Site preparation, training, and set up of study					█	█								
Pilot study							█							
Data collection - quantitative							█	█	█	█	█			
Data capturing - quantitative								█	█	█	█			
Data analysis - quantitative											█	█		
Data collection - qualitative									█					
Data analysis - qualitative												█		
Writing of manuscript												█	█	
Submission of dissertation, dissemination of findings														█

Dissemination of research findings:

The research findings generated by the proposed study will be submitted in partial fulfilment of the requirements for the Master of Public Health (Epidemiology) degree at the University of Cape Town. The findings will be written as a potentially publishable article for an appropriate peer reviewed journal. In addition, the findings will be reported to various stakeholders such as local authorities. A copy of the report will be distributed to the management of the antenatal service involved in the proposed study, and an offer of a

presentation based on the results of the proposed study will be made to all interested stakeholders.

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PART B: LITERATURE REVIEW

Objectives of literature review:

1. To present the literature regarding disclosure to male partners and male partner involvement (MPI), as well as their effect on adherence to the antenatal guidelines for preventing mother-to-child transmission (PMTCT) of HIV.
2. To describe reported barriers to and facilitators of disclosure to male partners and MPI.
3. To discuss the literature regarding the feasibility of MPI.

Literature search strategy:

An initial search of the PubMed and PsycINFO databases was conducted. The Google Scholar search engine was also used for this purpose. The terms used in the initial search included “male partner involvement AND PMTCT”, “disclosure AND PMTCT”, and “male partner involvement AND adherence”. The reference lists of the literature found during the initial search were used to obtain further relevant literature. In addition, reports on MPI, key research in this field, and reviews of MPI were included, and the reference lists of these papers were used to obtain further relevant literature.

Summary of the literature:

Male partner involvement as a priority intervention:

Programmes for the prevention of mother-to-child transmission (PMTCT) of HIV have been successfully implemented in many countries, including South Africa, however, challenges remain [1]. The prevalence of HIV among pregnant women in South Africa remains high [2], and although there has been progress in reducing mother-to-child transmission (MTCT), rates

of MTCT are still high in terms of the country's goals [3]. Novel approaches to strengthen PMTCT programmes and subsequently reduce MTCT should thus be explored. Male partner involvement (MPI) in antenatal care has been put forward as one such approach.

Although MPI has been the focus of much recent research, there is a lack of consensus about its definition [4] and about what activities constitute 'involvement' [5]. Some researchers have assessed MPI using a range of activities [6], but the majority of research has focussed narrowly on male attendance at antenatal clinics and male HIV testing [7]. Regardless of this lack of consensus, however, studies suggest that MPI is beneficial in terms of infant outcomes. Numerous studies have shown a strong inverse relationship between MPI and risk of MTCT in exposed infants [8]. For example, an early study (1999-2002) in Kenya found that male partner attendance at antenatal services and previous male testing led to a decreased risk of MTCT [9]. Increasing MPI has thus been highlighted as a priority within PMTCT programmes, which are currently largely women-centred [10].

In addition, MPI may improve adherence to PMTCT guidelines, as both HIV-status disclosure and MPI appear to be facilitators of adherence. For example, in a study conducted in Tanzania it was found that disclosure was positively associated with AZT adherence during pregnancy [11]. Disclosure was similarly found to be significantly associated with adherence during pregnancy in a study conducted in Nigeria [12]. In a study of HIV-positive pregnant and postpartum women in Mpumalanga, disclosure was again found to be positively associated with adherence during pregnancy, and MPI was found to be positively associated with nevirapine adherence during labour and infant nevirapine adherence postpartum [13].

Although it has been recognised as beneficial, however, the extent of MPI remains low, and attempts to increase male partner attendance of antenatal care have been largely unsuccessful. The South African PMTCT guidelines include the promotion of MPI [14, 15]. MPI is also part of the PMTCT national policy in Tanzania, but this has not translated into actual male participation [16]. Early studies conducted in Tanzania (2002-2004) and Kenya (2001-2002) reported that the proportion of male partners presenting at antenatal clinics was only 12.5% [16] and 16% [17] respectively. Similarly, multiple strategies to encourage MPI have been implemented in Cameroon, but these have led to only limited success, with MPI not exceeding 20% [18].

Disclosure to male partners:

In order for male partners to become involved in PMTCT with their pregnant partners, they must first have been informed of their partner's HIV status. Disclosure is thus a prerequisite for MPI, and non-disclosure may be a significant barrier to MPI. An early review of disclosure reported fear as the most common barrier to disclosure, namely fear of abandonment, rejection, violence, and upsetting family members [19]. While many women desire support from their partners, others indicate that they do not want their partners to be involved in their antenatal care and PMTCT, for reasons which include prior experiences of violence from their partners as well as non-disclosure of their HIV status, often because they fear their partner's reaction [7]. A study of HIV-positive pregnant women in Tanzania, for example, found a low rate of disclosure to male partners, with only 41% of participants having disclosed [20]. A low rate of disclosure (46.2%) has similarly been reported in Cote d'Ivoire [21].

While the above studies reported fairly low rates of disclosure, vastly different rates have been found in different contexts. In a study conducted in Nigeria, for example, 91.3% of female participants had reportedly disclosed to their partner, with the major reason put forward being to ensure emotional and economic support [22]. In contrast, a study conducted in Tshwane, South Africa, found that only 59% of newly diagnosed HIV-positive pregnant women had disclosed their HIV status to at least one person at the time of interview, with the major reasons for partner disclosure being to inform partners of the risk of infection, and to encourage them to be tested and to change their risk behaviours [23]. Very few women reportedly disclosed in order to obtain support for PMTCT activities, and the major reasons put forward for non-disclosure were fear and not yet being ready to disclose [23].

Efforts to decrease MTCT have led to increasing numbers of women discovering that they are HIV-positive during pregnancy, which may be particularly traumatic as there is little time to deal with the diagnosis while simultaneously preparing for the birth of the child [23]. Women are likely to discover their HIV status before their partners, as a result of being routinely tested at antenatal services, and are then burdened with the responsibility of disclosing [24]. In addition, a large proportion of pregnancies in South Africa are unplanned, thus placing women in a ‘double disclosure bind’, where they are responsible for communicating both their HIV status and their unintended pregnancy to their partners, many of whom they are not in stable relationships with [24]. For example, 60% of participants in a study conducted in KwaZulu-Natal had experienced both an unintended pregnancy and a recent HIV-positive diagnosis [24]. Most participants were single and not cohabiting, and were fearful that disclosure would lead to abandonment [24]. It is thus unsurprising that these women prioritised maintaining their relationships and receiving continued support during an

unintended pregnancy over disclosing, and HIV counselling strategies thus need to take into account the personal and cultural contexts of disclosure [24].

Other authors similarly suggest that women who are diagnosed during pregnancy have a relatively short period of time to deal with their diagnosis before the birth of their child, but that hiding their diagnosis may lead to a greater risk of MTCT if they are unable to adhere to their antiretroviral regimen correctly because they fear inadvertent disclosure [25]. Despite these concerns, however, a study conducted in Pretoria, Tshwane, found that 59% of female participants who were diagnosed during pregnancy had disclosed their diagnosis early, and that the majority (81%) had disclosed by three months postpartum [25]. Although the majority of women who disclose report supportive reactions from their partners [26], fears related to disclosure should nonetheless be taken into account during HIV counselling and testing, as they represent a major barrier to disclosure and subsequent MPI.

Barriers to male partner involvement:

Although the extent of MPI remains low, studies have found that both men and women in certain contexts desire greater MPI in antenatal care. For example, married men in Uganda reportedly wish to be included in antenatal and PMTCT services [27]. Women in Tanzania would reportedly like their partners to accompany them to antenatal visits, and men within the same context wish to play a more active role in their partner's pregnancy [28]. It has been recognised, however, that although the majority of men hold positive attitudes towards PMTCT, the proportion of men who engage with PMTCT services and activities remains low [10, 29].

Given the fact that both men and women appear to desire greater MPI in antenatal care, but that MPI remains limited, much literature has focussed on the barriers to involvement. Barriers have been identified at various levels, ranging from individual to societal and structural factors. For example, in a study of barriers to MPI in Kenya, barriers such as difficulties in attending antenatal appointments because of work commitments, difficulties in communication within couples, a lack of understanding among men regarding the importance of participating in PMTCT programmes, HIV-related stigma, traditional cultural norms and gender roles, and the perceived negative attitudes of clinic staff were identified [30]. In a study conducted in Cameroon, it was similarly found that one of the major barriers to MPI is the time needed for men to attend antenatal visits [31]. It is thus argued that antenatal attendance may not be an appropriate indicator of MPI or male partner support [4].

Prevalent traditional gender roles are a major barrier to MPI, as these have created a culture whereby men are not actively involved in pregnancy. For example, a study conducted in Tanzania found that men do not recognise the importance of their attendance at antenatal visits, instead believing that antenatal care is a solely female responsibility [28]. Similarly, a study conducted in Khayelitsha, Cape Town, reported that men generally see no reason to attend antenatal visits [32]. Men in Cameroon who indicated that male attendance at antenatal visits is unnecessary similarly reported that pregnancy is a women's affair, and that it is not customary for men to participate in antenatal care [31]. The majority of men surveyed indicated that financial support is adequate in terms of MPI [31]. A study conducted in Uganda in 2004 reported that while 97% of men interviewed provided financial support to their female partners, only 4.7% of the men had attended antenatal services with their partners [6].

Traditional gender roles and social norms, and the common perception that antenatal care is a woman's responsibility, have resulted in antenatal services in which men do not feel welcome or comfortable [33, 34]. The fundamentally female-oriented nature of PMTCT programmes thus act as a major deterrent for, and barrier to, men [33, 34]. The exclusive use of these services by women, due to health service delivery and cultural factors, has made them inaccessible for men [35]. It is argued that this can be explained by two structural and social norms, namely that reproductive health has become a solely female arena, and that the focus on maternal and child health and the emphasis on women's rights and access to health care has contributed to a reproductive health care system from which men are largely excluded [28]. Persistent cultural beliefs about gender roles have thus been exacerbated by the health care system itself, and these broad social and societal influences deny men the opportunity to access these services with their partners.

It is argued that the most significant obstacle to MPI is perhaps these conceptual and policy barriers that, through their institutionalisation of maternal health as a women-only realm, have led to men being excluded from PMTCT and other reproductive health services [29]. PMTCT programmes traditionally focus on women, because vertical transmission of HIV can only occur from a mother to her child, and the fact that reproduction is traditionally associated with women has led to a system of thinking in which sexual and reproductive health services are similarly associated with women, thereby unconsciously legitimating the exclusion of men and, by extension, couples [10].

The possible negative impact of health care providers has also been identified as a potential reason for limited MPI. Studies conducted in Uganda [6, 36] and in Khayelitsha, Cape Town, have found that men who accompany their partners to antenatal clinics are forced to wait

outside. A study conducted in Tanzania found that health care providers hold generally positive attitudes toward male attendance at antenatal services, but that these positive attitudes do not translate into actual male partner attendance [37]. Indeed, an earlier study conducted in the same region found that many men had been turned away by staff when attempting to attend these services with their partners [28]. In Zambia, midwives are trained to encourage MPI, but this does not necessarily lead to service environments which are conducive to male participation, and health care providers' attitudes and services which are not male-friendly have also been identified as barriers to MPI in this context [38].

In a review of the facilitators of and barriers to MPI, it was found that the most frequently reported barrier was the belief held by men that antenatal care is purely a women's domain and responsibility [39]. This cultural barrier to MPI has been identified by numerous authors in many different contexts, and has been discussed extensively above. Hence, it appears as though this widespread belief in traditional gender roles may be the major obstacle in engaging men in antenatal care and PMTCT services, both from a supply and demand perspective.

Other major barriers to MPI identified were those of time and men's reluctance to learn their HIV status, as well as the belief that one's partner's HIV status is a proxy for one's own [39]. The early study which reported that only 16% of male partners in Kenya attended antenatal services found that the major reason put forward by respondents for other men not attending the clinic was the fear of testing positive [17]. In a study of men whose female partners had recently been pregnant in Pretoria, Tshwane, it was reported that while the vast majority (94.4%) of participants believed that male HIV testing is important, only 59.7% had ever been tested, and only 46% had ever discussed HIV testing with their partners [40]. The men

in the study were more likely to have discussed HIV testing with their partners if they were married, and more likely to have been tested if they had previously discussed HIV testing [40]. The results of this study thus indicate that communication could enable and strengthen couple testing.

A qualitative study in Pretoria found that while the majority of fathers who participated recognised the importance of HIV testing, barriers to HIV testing put forward included time, the fear of testing positive, and the lack of social expectations for men to get tested when their partners are pregnant. It is argued that HIV testing and the involvement of men at antenatal services is structurally inaccessible, as antenatal care programs have been designed to include the routine counselling and testing of women, at the expense of their male partners [34].

A study in Tanzania found that while men support the routine testing of women in the context of antenatal care, they are very resistant to being tested themselves, evident in the fact that only 3% of partners were tested at the antenatal clinics included in the study, despite the women being encouraged to bring their partners for testing [33]. It thus appears as though PMTCT programmes are an accepted entry point into HIV care for women [41], but not for men. Women are seen within these services as a way to access men, and the responsibility for bringing partners to the clinic for testing lies with these women [33]. Given the barriers to male attendance at antenatal services, it appears as though other approaches need to be explored in order to access men.

The nature of relationships and their effect on male partner involvement:

Finally, a male ‘partner’ can refer to various types of relationships. The nature and complexity of relationships between men and women has been identified as a barrier to MPI, as many couples may find themselves in less stable relationships where they are not married or cohabiting, and which may make MPI even less likely [39]. In a study of Ugandan fathers it was found that the nature of relationships between men and women is a major barrier to MPI, in this case to couple counselling and testing [36]. The authors reported that men described their marriages as unstable and distrustful, and explained their reluctance to attend couple counselling and testing by alluding to the conflict that it may lead to in their marriages [36]. These men were thus reluctant to attend antenatal services, as they were fearful of being tested [36].

In a review of the determinants of MPI, it was found that factors associated with increased MPI included cohabiting with one’s partner, while barriers to MPI included poor communication within couples [8]. Cohabiting has also been found to be associated with disclosure [21], as has marriage [25], indicating the importance of the nature of relationships, as women who are in stable relationships appear to be more likely to disclose their HIV status and to receive support from their partners. Another review similarly highlighted the importance of communication in improving MPI [42]. In the context of an intervention study in Mpumalanga, female participants discussed their feelings of helplessness to communicate with their partners [43]. These women perceived their partners as being uninvolved and uninterested in their antenatal care, while the men discussed their feelings of sadness and neglect after their partners had failed to involve them [43]. This again highlights the impact that the nature of relationships between men and women can have on MPI, as well as the need to increase communication within couples.

Unstable relationships appear to be the norm in South Africa, with the ‘typical’ child being raised by their mother in a single-parent household [44]. Another concerning trend is that the proportion of children who have absent, living fathers is increasing [44]. Taking into account the nature of relationships between men and women means acknowledging this reality, and then tailoring health services to fit these circumstances.

While unstable relationships may lead to a lack of MPI, however, this may be perpetuated by women, who often do not inform their partners of antenatal care or PMTCT, or choose to not involve their partners in these activities, often from fear of their partner’s reaction [39]. A study conducted in 2011 in Cameroon reported that the majority of female participants believed that financial support is sufficient in terms of male support during pregnancy, and that most had never asked their partners to accompany them to antenatal visits, assuming that they would not want to do so [18]. This again highlights the deeply entrenched cultural norms which act as a barrier to MPI [18].

The need for increased efforts to promote male partner involvement:

Given all of these barriers to MPI, the question remains as to why certain men manage to overcome these barriers in order to support their pregnant partners and to be actively engaged in antenatal care. Why do some men, albeit few, overcome the health system constraints and challenge traditional gender norms, while others are content to simply provide financially for their partners? It is argued that it is likely that these men, who are not representative of all men, are already supportive and involved before the pregnancy [36]. Studies seem to support the argument that men who participate in PMTCT and antenatal services are men who are in committed relationships characterised by good communication [10, 29]. Interventions to address improved trust and communication include the MenCare campaign in South Africa,

which aims to promote MPI by encouraging fatherhood, along with encouraging partners to be active participants in maternal and child health [10].

While efforts to increase MPI have been largely unsuccessful, the argument can still be made for increasing these efforts. It is argued that one way to address the comprehensive needs of women is through family-centred models of PMTCT, one component of which is MPI [45]. While it is clear that MPI improves health outcomes in the context of PMTCT, this approach has yet to fulfil its promising potential [45]. Health services need to be reoriented to see men as clients who, along with their female partners, need to be prepared for parenting [35]. The focus of antenatal services should thus shift from being exclusively about pregnant women who have male partners, to being about couples who are experiencing pregnancy together, and should be treated and engaged as such. In order to eliminate MTCT, health services from which half of the population are excluded need to be restructured [10, 29].

However, an exclusive focus on male partner attendance at antenatal clinics is clearly ineffective, and thus a broader focus is needed. Although MPI is frequently operationalised as attendance at antenatal clinics, male participants of a study in Durban, KwaZulu-Natal, reportedly provide a range of different types of support to their female partners, the main form of which is financial support, but which also includes men reminding their partners of when their PMTCT appointments are, and in some cases providing emotional support [7]. Time and space at services were again put forward as barriers to male partner attendance in this study [7]. Perhaps efforts to increase MPI thus need to additionally focus on other ways in which men can be involved in and engaged with their partner's pregnancy [7].

As argued above, there is a need to rethink ways of improving MPI, and better strategies are needed in order to increase MPI, as the traditional clinic-based approach does not appear to be particularly effective [16]. Interventions at the societal and structural level are needed in order to create a culture in which both men and women take part in and share the responsibility for reproductive care [27]. Finally, there is a need to move beyond the view of men as obstacles to health to a view of men as integral partners in promoting gender equality and health [10]. There is a need to move beyond the view of men as being ‘facilitating factors’ which enable women to access health care services. Rather, full engagement with men as part of the couple could promote communication within couples and normalise men’s involvement in PMTCT and antenatal services [29].

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PART C: MANUSCRIPT

Abstract:

Male partner involvement (MPI) has been identified as a priority intervention in programmes for the prevention of mother-to-child transmission (PMTCT) of HIV. This study made use of a quantitative survey ($n=170$) and two focus group discussions (FGDs) in Khayelitsha, South Africa, in order to explore disclosure, adherence, and male partner involvement (MPI) during pregnancy. Seventy-four percent of the survey participants had disclosed their status to their partner, and the participants reported high rates of MPI. Higher reported levels of HIV-related discussion with partners was significantly associated with both disclosure and high MPI. Most participants received adherence support from their partners. The FGD participants emphasised barriers to disclosure, but also discussed the necessity of disclosing, and discussed ways in which partners can be supportive during pregnancy. MPI interventions should aim to increase discussion within couples, as well as to increase male involvement in and support for a variety of pregnancy-related activities.²

² Variations from journal requirements: For the purpose of dissertation submission, tables are inserted in the text of the manuscript rather than appended at the end of the manuscript.

Introduction:

Much progress has been made in prevention of mother-to-child transmission (PMTCT) programmes in South Africa over the past decade, with a mother-to-child transmission (MTCT) rate of 2.7% reported at around 6 weeks of age [1]. Despite the successful implementation of PMTCT programmes, challenges remain in eliminating MTCT [2] and novel approaches to improving PMTCT programme outcomes are needed. Male partner involvement (MPI) has been put forward as a priority intervention to increase programme coverage and to promote a family-centred approach to HIV care [3, 4]. HIV-status disclosure to a male partner and MPI have been shown to significantly improve antiretroviral (ARV) adherence during pregnancy in South Africa [5], however, rates of MPI remain low worldwide [4].

Little is known about the extent of disclosure and adherence and the role of MPI in the context of PMTCT in South Africa. Research in this regard is thought to be narrowly focussed on male attendance at antenatal clinics and male HIV testing [6]. A precise definition of 'MPI' is lacking [7], with poor consensus regarding the activities 'involvement' includes [8]. Male partner involvement could strengthen all four pillars of PMTCT, for example by increasing levels of HIV testing and counselling among men, and by involving men in family planning. The focus of this article, however, will be on male partner involvement in PMTCT during pregnancy. This formative research aimed to explore the concept of MPI from the perspective of pregnant women in order to generate a broader understanding of women's experiences of MPI. Specifically this study explored disclosure, adherence, and MPI during pregnancy, with a view to examining the associations between these variables.

Methods:

Participants and procedures:

This study was conducted at an antenatal service in Khayelitsha, South Africa, between July and November, 2013. Khayelitsha has the highest antenatal HIV seroprevalence in the Western Cape (37% in 2011), and is an area characterised by high levels of unemployment (38%) and instability [9]. The study consisted of a quantitative survey and two qualitative focus group discussions (FGDs). Pregnant women were eligible to participate if they were HIV-positive and had a male partner. In the literature on MPI in PMTCT, most studies do not make explicit the definition of a ‘male partner’. Studies that do make this clear define a ‘partner’ as a primary sexual partner, who may or may not be the father of the child [6, 10, 11]. This study similarly defined ‘partner’ as a primary sexual partner, and participants were interviewed regarding their cohabitation and marital status in order to categorise different types of relationships.

Given the exploratory nature of the study, a convenience sample was recruited for the survey ($n=170$) and the two FGDs ($n=7$ and $n=9$) respectively. Eligible participants for both components of the study were identified with the assistance of health care providers and support groups for HIV-positive pregnant women. All participants provided written informed consent prior to participation. The study was approved by the University of Cape Town’s Faculty of Health Sciences Human Research Ethics Committee and the local health authority.

Data collection:

A trained field worker conducted the interviews for the survey and FGDs in isiXhosa, the participants’ mother tongue. A paper-based questionnaire with closed and open questions was

developed and was piloted prior to data collection. Quantitative data collected included variables pertaining to the sociodemographic characteristics of the participants and their partners, the nature of the relationship between participants and their partners, HIV testing and HIV-status disclosure, antiretroviral therapy (ART) adherence, and the participants' experiences of and desires for MPI during pregnancy.

Disclosure to male partners was self-reported, resulting in a binary categorisation of disclosure and non-disclosure. Adherence was measured using questions based on the NIAID AIDS Clinical Trials Group Adherence Interview [12]. Levels of HIV-related discussion were assessed by asking each participant whether or not she had discussed HIV testing and the prevention of horizontal transmission with her partner. A discussion score was calculated by summing the number of topics the participant had discussed with her partner (maximum 2). A score of 0-1 indicated low levels of discussion, and a score of 2 indicated high levels of discussion.

Given that a standardised measure to assess MPI is lacking [13], involvement was assessed using a range of activities based on how MPI was operationalised in a study conducted in Uganda [14]. In this study, these activities were partner involvement in providing financial support for antenatal visits; knowing when antenatal visits were; discussing what happens during antenatal visits with their pregnant partner; discussing with their partner ways to prevent PMTCT; and accompanying their partner to antenatal visits. In order to compare levels of MPI, a scoring system was devised in which an MPI score was calculated by summing the number of reported activities the partner carried out (maximum 5). A score of 0-3 indicated low involvement, and a score of 4-5 indicated high involvement.

Based on preliminary results of the survey, a FGD guide was developed to obtain similar, but more in-depth information. The FGDs were digitally recorded. MPI was not defined for the purposes of the FGDs, thereby allowing participants to put forward their own views of what activities constitute MPI.

Data analysis:

The survey data were analysed using bivariate analysis, in order to identify variables which were significantly associated with the outcomes disclosure, adherence, and MPI. The associations were deemed significant if χ^2 or Fisher exact tests, in the case of categorical variables, or *t*-tests, in the case of continuous variables, led to a *p*-value of less than 0.05. Odds ratios (OR) with 95% confidence intervals (CI) were calculated in order to determine the strength of these associations.

Two logistic regression models were then built, one in which the outcome was disclosure and the other in which the outcome was MPI. Variables were included in the logistic regression models if they had been significantly associated with each of the respective outcomes in bivariate analysis. Forward stepwise procedures were used for model building, adding each of the variables which were associated with the outcome in bivariate analysis individually. Likelihood ratio tests were used to assess model fit. Marital status was controlled for when building the model of disclosure, as this variable almost reached significance in multivariate analysis, and improved the model fit. Disclosure status was controlled for when building the model of MPI, as it was presumed that disclosure is a prerequisite for MPI in PMTCT. Data were analysed using Stata 12 (StataCorp Inc, College Station, Texas, USA).

The qualitative data from the FGDs were transcribed and translated into English. The transcriptions were checked by an independent source and back translated for quality assurance. The transcribed discussions were then analysed using thematic analysis, whereby they were coded according to the repeated themes which emerged, with the coding scheme being developed and modified as analysis progressed, until a point of saturation was reached [15].

Results:

Sociodemographic characteristics:

One hundred and seventy HIV-positive pregnant women participated in the survey, while 16 women from the same population participated in the FGDs. Detailed sociodemographic characteristics of these participants are presented in Table 1. The survey participants' median age was 29 years (Interquartile Range [IQR]: 26-33). The majority of the participants had not completed secondary education (68%), and just over half were unemployed at the time of the interview (55%). Partners were on average older than the participants (Partner median age = 33; IQR: 29-37), and had higher levels of education and employment. Most participants (83%) had previously been pregnant. Sixty-eight percent ($n=115$) of the current pregnancies were unplanned. Unplanned pregnancy was significantly more likely among unmarried participants (OR = 3.2; 95% CI: 1.5-7.0). Just over a quarter of participants were married (26%), and 52% of participants were cohabiting.

Table 1 Participant and partner characteristics

Variable	<i>n</i> (%)
<i>Survey participants</i>	
Median age (Inter-quartile Range [IQR])	29 (26-33)
Race	
Black/African	170 (100)
Language	
English	1 (0.6)
isiXhosa	168 (98.8)
Sesotho	1 (0.6)
Education	
Primary school	5 (2.9)
Some secondary education	110 (64.7)
Matric/tertiary education	55 (32.4)
Employment	
Employed	75 (44.1)
Partners' median age (IQR)	33 (29-37)
Partner's education	
Primary school	5 (2.9)
Some secondary education	60 (35.3)
Matric/tertiary education	90 (52.9)
Unknown	15 (8.8)
Partner's employment	
Employed	142 (83.5)
Marital status	
Married	44 (25.9)
Cohabitation status	
Cohabiting	89 (52.4)
Number of weeks pregnant at time of interview	
Second trimester	42 (24.7)
Third trimester	128 (75.3)
Gravidity	
First pregnancy	29 (17.1)
Decision making regarding pregnancy	
Unplanned pregnancy	115 (67.7)
<i>Focus group discussion participants</i>	
Median age (IQR)	29.5 (26-35.5)
Marital status	
Married	4 (25)
Cohabitation status	
Cohabiting	8 (50)
Number of weeks pregnant at time of interview	
Second trimester	3 (19)
Third trimester	13 (81)
Gravidity	
First pregnancy	4 (25)

Survey results:

Disclosure:

Most participants (95%) had been tested for HIV prior to their current pregnancy, with 44% testing during a previous pregnancy. The primary reasons reported for testing outside of pregnancy included curiosity; experience of HIV symptoms; and the offer of routine testing at a health facility. Participants reported high rates of HIV-related discussion with their partners, with 80% reporting that they had discussed HIV testing, and 88% reporting that they had discussed preventing horizontal transmission of HIV (Table 2).

Table 2 HIV testing, discussion, and treatment

Variable	<i>n</i> (%)
Testing prior to current pregnancy	
Tested prior to current pregnancy	161 (94.7)
Not previously tested	9 (5.3)
Testing outside of pregnancy (<i>n</i> = 161)	
Tested during a previous pregnancy	71 (44.1)
Tested outside of pregnancy	90 (55.9)
HIV-related discussion	
Has discussed HIV-testing with partner	136 (80.0)
Has discussed preventing horizontal transmission with partner	149 (87.7)
ARV regimen at time of interview	
Short-course AZT	15 (8.8)
Life-long ART	30 (17.7)
FDC	125 (73.5)
Adherence during current pregnancy	
Participant reports complete adherence	134 (78.8)
Participant reports non-adherence	36 (21.2)

Seventy-four percent (*n*=126) of the participants reported that they had disclosed their HIV-status to their partner. Reasons for disclosure included to make taking ARVs easier; to facilitate condom use; and to encourage male partner testing. Only 54% of the participants reported that they knew their partner's HIV-status, with 17% (*n*=29) reporting that they knew because they tested together (Table 3).

Table 3 Disclosure and male partner involvement

Variable	<i>n</i> (%)
Disclosure to partner	
Participant has not disclosed	44 (25.9)
Participant has disclosed	126 (74.1)
Knowledge of partner's HIV status	
Participant does not know partner's status	79 (46.5)
Participant knows partner's status	91 (53.5)
Male partner involvement (<i>n</i> = 169)	
Provides financial support for participant's antenatal visits	144 (85.2)
Knows when participant's antenatal visits are	161 (95.3)
Discusses with participant what happens during antenatal visits	162 (95.9)
Accompanies participant to antenatal visits	59 (34.9)
Reported partner discussion of PMTCT	151 (89.3)
Male partner involvement score (<i>n</i> = 169)	
0	2 (1.2)
1	4 (2.4)
2	6 (3.6)
3	17 (10.1)
4	90 (53.3)
5	50 (29.6)

In crude analyses, disclosure to one's partner was significantly more likely among participants who were married (OR = 3.5; 95% CI: 1.2-12.2) or cohabiting (OR = 3.2; 95% CI: 1.4-7.1); among participants who knew their partner's HIV-status (OR = 10.6; 95% CI: 4.1-30.1); and among participants who reported higher levels of HIV-related discussion with their partner (OR = 20.2; 95% CI: 7.8-53.7). In a multiple logistic regression model, knowledge of one's partner's HIV-status and higher levels of HIV-related discussion remained significantly associated with disclosure, when controlling for marital status (Table 4). Those who knew their partner's status were 8.8 (95% CI: 3.1-25.1) times more likely to have disclosed than those who did not know their partner's status. Those who reported higher levels of HIV-related discussion were 18.2 (95% CI: 6.6-50.1) times more likely to have disclosed than those who reported low levels of discussion.

Table 4 Factors associated with disclosure to partner

Variable	Unadjusted odds ratio (95% CI)	P-value
Marital status		
Not married	Reference	
Married	3.5 (1.2-12.2)	0.011
Cohabitation status		
Not cohabiting with partner	Reference	
Cohabiting with partner	3.2 (1.4-7.1)	0.002
Knowledge of partner's HIV status		
Participant does not know partner's status	Reference	
Participant knows partner's status	10.6 (4.1-30.1)	<0.001
Discussion score		
Low	Reference	
High	20.2 (7.8-53.7)	<0.001
Variable	Adjusted odds ratio (95% CI)	P-value
Knowledge of partner's HIV status		
Participant does not know partner's status	Reference	
Participant knows partner's status	8.8 (3.1-25.1)	<0.001
Discussion score		
Low	Reference	
High	18.2 (6.6-50.1)	<0.001
Marital status		
Not married	Reference	
Married	3.3 (0.9-12.0)	0.066

Adherence:

All of the participants were on ART, with 74% of the participants taking a fixed-dose combination regimen. Seventy-nine percent ($n=134$) of participants reported that they had not missed a dose during their current pregnancy (Table 2). Reasons for non-adherence included that the participants were away from home and did not have their ARVs with them, or that they were newly initiated and were not yet accustomed to taking them. Adherence was significantly higher among older participants compared to younger participants ($p=0.008$), however, adherence was not significantly associated with any other variables in bivariate or multivariate models.

Seventy-four percent ($n=125$) of the participants reported that their partners were aware that they were taking ARVs, and the majority of partners who were aware of this (95%)

reportedly helped them to adhere. The most frequently reported way in which partners provided this support was by reminding participants to take their ARVs. Taking their ARVs at the same time as their partners was also described as a way in which partners were supportive.

Male partner involvement:

Most participants indicated that their partners provided financial support for their antenatal visits (85%); knew when their antenatal visits were (95%); discussed with them what happens during antenatal visits (96%); and had discussed with them ways to prevent MTCT (89%). However, only 35% of participants reported that their partners accompanied them to antenatal visits (Table 3). The majority of participants reported that they desired high rates of MPI, and that MPI is deemed normative in their community.

In crude analyses, high involvement was significantly more likely among participants who had a previous pregnancy (OR = 2.9; 95% CI: 1.0-7.8); those who were married (OR = 3.6; 95% CI: 1.0-19.4) or cohabiting (OR = 9.7; 95% CI: 3.1-39.8); those who had disclosed (OR = 8.7; 95% CI: 3.3-23.4) or knew their partner's HIV-status (OR = 4.7; 95% CI: 1.8-13.8); and those who reported high levels of HIV-related discussion with their partners (OR = 21.3; 95% CI: 7.3-66.1). In a multiple logistic regression model, high MPI remained significantly associated with cohabitation status and high levels of HIV-related discussion, when controlling for disclosure (Table 5). Those who were cohabiting were 7 (95% CI: 2.0-24.0) times more likely to report high MPI compared to those who were not cohabiting. Those who reported high levels of HIV-related discussion were 13.2 (95% CI: 3.8-45.4) times more likely to report high MPI compared to those who reported low levels of HIV-related discussion.

Table 5 Factors associated with male partner involvement

Variable	Unadjusted odds ratio (95% CI)	P-value
Gravidity		
First pregnancy	Reference	
Has previously been pregnant	2.9 (1.0-7.8)	0.029
Marital status		
Not married	Reference	
Married	3.6 (1.0-19.4)	0.034
Cohabitation status		
Not cohabiting	Reference	
Cohabiting	9.7 (3.1-39.8)	<0.001
Knowledge of partner's status		
Does not know partner's status	Reference	
Knows partner's status	4.7 (1.8-13.8)	<0.001
Disclosure		
Has not disclosed to partner	Reference	
Has disclosed to partner	8.7 (3.3-23.4)	<0.001
HIV-related discussion		
Low	Reference	
High	21.3 (7.3-66.1)	<0.001
Variable	Adjusted odds ratio (95% CI)	P-value
Cohabitation status		
Not cohabiting	Reference	
Cohabiting	7.0 (2.0-24.0)	0.002
HIV-related discussion		
Low	Reference	
High	13.2 (3.8-45.4)	<0.001
Disclosure		
Has not disclosed to partner	Reference	
Has disclosed to partner	1.7 (0.5-5.7)	0.404

Focus group discussion results:*Disclosure:*

The FGD participants discussed facilitators of disclosure, with several participants citing counselling from health workers on how to disclose as being supportive. However, the majority of participants emphasised barriers to disclosure, with the primary barrier being fear. Women feared that disclosure would precipitate a violent reaction from their partner; amount to blame for infection; cause conflict within the relationship or result in the relationship ending. The participants agreed that partner disclosure felt different to disclosing to family

members, due to the risk of the partner ending the relationship. Despite these fears, participants acknowledged that partner disclosure is crucial. Two of the participants reported that disclosure had led to unexpected positive outcomes – notably providing the context for the partner to disclose his HIV-positive status, or resulting in male partner testing.

In addition, HIV testing outside of pregnancy was deemed important, because a positive diagnosis during pregnancy could invoke bitterness and resentment, subsequently putting the baby's health at risk. Although none of the FGD participants had received couple counselling and testing, and most remarked that they had never seen this being offered, many participants supported the idea and would have appreciated the opportunity for couples testing. One participant suggested that pregnant women be given written instructions from antenatal staff to bring their partners to the facility on a specific date in order to undergo couple testing.

Adherence:

Participants discussed their partner's role in ARV adherence. Ways in which partners could be supportive included reminding the participants to take their ARVs; bringing their ARVs with a glass of water; and fetching ARVs from the clinic. Participants described how it made them feel special and loved when their partners took care of them in this way. A participant described that it was helpful to take her ARVs at the same time as her partner.

Male partner involvement

FGD participants described pregnancy as an important and expected role of women in their community. Pregnancy among unmarried women was perceived as common and was considered the norm. Many of the participants described marriage as an outdated tradition with little societal value. There was unanimous agreement that pregnancy is a shared

responsibility, in which a man's role is to be loving, supportive, and helpful. Examples put forward of ways in which partners could be supportive during pregnancy included helping at home; looking after other children; enquiring about the pregnancy and the content of the antenatal visits; providing money to go to the clinic; reminding her of her antenatal visit dates; giving her massages; and washing her legs and feet when advanced pregnancy made this difficult.

Two contrasting forms of masculinity were described in the FGDs. While some men seemed willing to take care of a baby and a family, others were not. The latter saw such work as undermining their masculinity. The participants described that while some men were present and involved during pregnancy, other men were not. In addition, many of the FGD participants who had received support from their partners during previous pregnancies stated that this support was limited to pregnancy. One of the participants described increased support as stemming from her partner's sense of masculinity and fatherhood in response to her pregnancy.

Although the FGD participants all agreed that they would like their partners to accompany them to antenatal visits, they discussed how men who do accompany their partners are prevented from entering the clinic by security guards, which makes them unwilling to accompany their partners. Men were forced by security guards to wait outside due to overcrowding inside. Despite this, women supported a male-friendly facility, because they wanted their partners to be informed during antenatal visits and the pregnancy. The participants agreed that it would not be feasible or necessary for partners to accompany them to every antenatal visit, but suggested that partner attendance be made compulsory for at least one visit to allow for couple testing.

Discussion:

This research explored MPI during pregnancy as a potentially useful intervention to facilitate PMTCT and promote family-based care. Among the participants interviewed, most had previously been pregnant, and had tested prior to their current pregnancy. However, testing had not necessarily been linked to a previous pregnancy. As reported elsewhere, gender inequalities which challenge the uptake of HIV testing and disclosure in pregnancy were found, including disparities in age, education, and employment between participants and their partners [16]. Despite these obstacles, high rates of discussion around testing, sexual transmission, and PMTCT were reported, suggesting the normalisation of HIV, as reported in other South African settings [17].

This high reported rate of HIV-related discussion with partners is encouraging, particularly as high levels of discussion were found to be significantly associated with both disclosure and MPI in multivariate analysis. This is consistent with the view that men who are supportive of their pregnant partners were presumably already supportive and involved prior to the pregnancy, and may not represent the majority [18]. The importance of communication within couples has additionally been highlighted in a review of MPI in sub-Saharan Africa, where poor communication within couples was reported as a barrier to the uptake of HIV testing among women and to male attendance of antenatal care [19].

Our research shows that women felt it important to test for HIV outside of pregnancy, mostly to avoid disappointment and bitterness associated with discovering one's HIV-positive status during pregnancy. Just over half of the survey participants had tested outside of pregnancy. This indicates a possible shift in testing behaviours among this population from antenatal care formerly providing a gateway to testing and HIV care [20]. Only a small proportion of survey

participants reported that they had tested with their partner. This proportion, while low, is encouraging, as it indicates some willingness to pursue couple testing. However, couple-centred approaches to HIV testing and prevention remain rare in sub-Saharan Africa [21]. It is likely that low levels of couple testing are attributable to service-related factors, such as poor availability of staff and appropriate venues for couples counselling.

Disclosure among the survey participants to their male partners was unexpectedly high (74%) compared to other South African and African settings (22, 23, 24). Disclosure was more common among participants who were married, which is consistent with previous research conducted in Tshwane, South Africa, which found that pregnant women who were married were significantly more likely to disclose to their partners than those who were not married to their partners [22]. Documented challenges to disclosure in South African PMTCT settings have included both single marital status and unplanned pregnancy, both of which were prevalent in this study [23]. Furthermore, our results suggest that little value is currently placed in marriage, a perspective that has been documented in other South African research, which reports low rates of marriage and high rates of sexual partnerships outside of marital and cohabiting relationships [25]. Hence different types of relationships could influence the nature and extent of MPI in PMTCT [4].

This study demonstrated that partner disclosure is not a two-way process. Our results show that reported disclosure was weighted more heavily towards female-to-male disclosure than male-to-female disclosure, which is consistent with the results of another study in Mpumalanga, South Africa [26]. Common challenges to disclosure experienced by women, notably the fear of violence and rejection, still seem prevalent, as found in previous research [23]. While this again raises the issue of gendered power dynamics in disclosure, the fairly

high proportion of participants who had disclosed to their partners in the present study is encouraging. The FGD participants discussed their fears regarding disclosure, which again raises the issue of how much women believe that they have to lose by disclosing.

Encouragingly, however, the participants acknowledged that despite these fears, disclosure to one's partner is vital. As reported in a study in Mpumalanga, South Africa, one of the primary reasons for disclosing put forward by our participants was to encourage their partners to get tested [27]. This shows a possible shift in disclosure behaviour, as it shows how, regardless of the fear related to disclosure, many women weigh up the possible benefits and are disclosing to their partners.

Reported rates of adherence among the survey participants were fairly high, with 79% of participants reporting that they had not missed a dose during pregnancy. The rate of adherence may be due to the fact that the majority of participants were on a FDC regimen, which is easier to manage. However, it may have also been too early in the course of treatment to estimate adherence effectively. Furthermore, adherence may be higher in pregnancy because women are intent on preventing MTCT.

As stated above, many survey participants reported high levels of MPI in a range of activities. It appears as though there has been a shift in perceptions of MPI within this population, as an earlier study (2004-2005) conducted in Khayelitsha reported that female FGD participants described MPI as consisting solely of men accompanying their female partners to antenatal visits [10]. From our findings, it appears that gender norms have shifted and that men are now more involved in pregnancy. In addition, most survey participants who had disclosed received adherence support from their partners. A high level of MPI was significantly more

likely among participants who were cohabiting, which is consistent with the results of a review of MPI in sub-Saharan Africa [7], as well as with the results of another review of MPI in which it was found that one of the primary facilitators of MPI is being in a stable relationship [28].

Regardless of the reported contrasting range of MPI activities, financial support and discussion around antenatal care were reported in the survey as the most prevalent partner involvement activities. Being able to attend antenatal visits depends on several factors [13], and attendance may be constrained by health facility barriers. It is thus argued that targeted interventions for men while their partners are pregnant may be more beneficial than attempting to increase rates of male attendance at antenatal visits [29]. A few male partners in the present study, however, accompanied women to the antenatal service, which is consistent with the results of a study conducted in Durban, South Africa [6].

The FGD participants all expressed a desire for their partners to accompany them to antenatal visits, but reported health facility barriers to this. In addition, as reported elsewhere, our research found that men who were forced to wait outside questioned the necessity of accompanying their partners to the clinic [18].

As mentioned above, the FGD participants experienced two contrasting forms of masculinity. In multivariate analysis of the survey data, a high level of HIV-related discussion within the couple was significantly associated with both disclosure and MPI. It thus appears as though it is a certain type of male who becomes highly involved in his partner's pregnancy. Non-governmental organizations which run campaign messages regarding responsible relationship

building and parenting, such as “Brothers for Life”, thus aim to engage men and target gender inequity in an attempt to promote MPI and fatherhood in South Africa [30].

This study has several limitations. First, while the fairly high disclosure rate found among the survey participants is encouraging, the possibility that female-male partner disclosure was over-reported due to social desirability bias cannot be excluded, and is thus a limitation of the methodology used. Similarly, the high reported rate of HIV-related discussion may have been influenced by social desirability bias. Adherence was also self-reported in this study, and may have been subject to recall bias and/or social desirability bias.

As is evident in the wide confidence intervals, the results of this study lack precision, possibly due to the small sample size, but this is not uncommon in formative research. As the study was conducted using a convenience sample at only one antenatal service, the results may not be generalizable to other contexts, as the high HIV prevalence as well as the high levels of unemployment, violence, and migration in this context may have influenced the outcomes. Given the scope of this research and the resources at hand, it was not possible to interview men. Hence, some of the views concerning MPI expressed by the women interviewed may present a biased perspective of the extent of MPI in this population. Given the lack of a precise definition of MPI and validated tool to assess involvement, MPI may have been overestimated in the present study based on the definition and tool used. Men may have been misclassified as highly involved in PMTCT itself when they were in reality more involved in pregnancy than in PMTCT, especially in cases where disclosure had not taken place. Research of men’s perspectives of MPI would thus be useful.

Conclusion:

The results of this study highlight the importance of the need for interventions which facilitate partner disclosure, with particular support for male partners, given the lack of balance in reported disclosure rates. Services that promote and facilitate couples counselling, as well as the provision of psychosocial support for HIV concordant and discordant couples, should be explored. In addition, our findings highlight the potential to intervene at the level of the couple in order to increase MPI. As higher levels of discussion were found to be associated with MPI, and men who communicate with their partners appear to be more likely to participate in PMTCT programmes [4], interventions should target communication within the couple, and this should preferably occur before pregnancy. The varied nature of partnerships needs to be accounted for in MPI interventions. Given that different ‘types’ of masculinities were identified in relation to MPI, this also suggests that interventions need to target dynamics within the couple prior to pregnancy.

There is a need to move towards accepting men as integral partners in promoting family health [4]. Interventions should aim to increase involvement in a variety of activities, and should not focus on antenatal attendance alone. However, encouraging partners to attend at least one antenatal appointment should perhaps be explored, as it would allow for couples testing and would facilitate disclosure. An alternate strategy which was tested in the context of a randomized clinical trial in Kenya was that of home-based couple counselling and testing, which was found to significantly increase the number of male partners reached and tested [31]. Given the barriers to male attendance at antenatal services, this strategy should perhaps be explored in other contexts.

The integration of male partners could strengthen all four pillars of PMTCT. HIV testing and counselling around behaviour change among men has the potential to greatly reduce the incidence of HIV in women of reproductive age. As male partners are often decision-makers within the couple, the integration of male partners may be essential for family planning in certain contexts. In addition, there is evidence that MPI is beneficial in terms of infant outcomes in PMTCT, and men should be, in their role as fathers, integral partners in ensuring care and support for their children. The argument can thus be made for increased efforts to promote MPI in PMTCT and in subsequent fatherhood.

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PART D: APPENDICES

Appendix 1: Quantitative component: Information sheet and informed consent form:

Male partner involvement during pregnancy: The missing component in PMTCT adherence in Khayelitsha?

We are from the school of Public Health and Family Medicine at the University of Cape Town. We are collecting information about male partner involvement in pregnancy, specifically when the pregnant woman is HIV-positive. We are interested in finding out what your experience of male partner involvement in your pregnancy is, as well as your experience of being on an antiretroviral regimen during pregnancy. Although participating in this study will not benefit you directly, and payment will not be provided for participating, we hope that this research will provide insight into how programmes which aim to prevent mother-to-child transmission of HIV can be improved.

Your participation in this study is voluntary, and if you decide not to participate then you will face no negative consequences. This study is not being conducted by any antenatal service, so if you decide not to participate then your antenatal treatment will not be affected in any way. We will not record your name during the interview, nor use it in our research. You are also free to withdraw from the study at any time or refuse to answer any specific questions, should you wish to do so.

If you decide to participate in the study, you can expect the following:

- An interviewer will ask you questions and write down your answers. This should not take longer than 20 minutes.
- All of your answers to the questions will be kept private and confidential, and your name and anything that could be used to identify you will not be recorded. Only the researchers on this study will see your answers.
- Participation in this study will involve only minimal risks. Every effort will be made by the researchers to minimise the possible negative consequences of participating.



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Informed Consent Form:

The purpose of the study has been explained to me, as well as what I can expect if I decide to participate. I have had the opportunity to ask questions about these, and these questions have been answered to my satisfaction.

I understand that the answers I provide will be confidential and that my identity will be kept anonymous.

I consent voluntarily to participate in this study and I understand that I have the right to withdraw from the study at any time without this affecting my antenatal treatment in any way or leading to any negative consequences.

Participant's signature (or a tick if you would prefer): _____ Date: _____

Signature of investigator: _____ Date: _____

Thank you.

Appendix 2: Qualitative component: Information sheet and informed consent form:

Male partner involvement during pregnancy: The missing component in PMTCT adherence in Khayelitsha?

We are from the school of Public Health and Family Medicine at the University of Cape Town. We are collecting information about male partner involvement in pregnancy, specifically when the pregnant woman is HIV-positive. We are interested in finding out what your experience of male partner involvement in your pregnancy is, as well as your experience of decision-making in pregnancy and of HIV testing. Although participating in this study will not benefit you directly, and payment will not be provided for participating, we hope that this research will provide insight into how programmes which aim to prevent mother-to-child transmission of HIV can be improved.

Your participation in this study is voluntary, and if you decide not to participate then you will face no negative consequences. This study is not being conducted by any antenatal service, so if you decide not to participate then your antenatal treatment will not be affected in any way. We will not record your name during the group discussion, nor use it in our research. You are also free to withdraw from the study at any time or refuse to answer any specific questions, should you wish to do so.

If you decide to participate in the study, you can expect the following:

- You will be part of a focus group, which is a group discussion on various topics. In this study, the topics will be decision-making in pregnancy, HIV testing, and male partner involvement in pregnancy. All of the group members will be HIV-positive pregnant women.
- The group discussion will be facilitated by a research assistant who will ask the group questions on the above topics. The group discussion will be recorded, but your name and anything that could be used to identify you will not appear anywhere in the data in order to keep your identity anonymous.
- The group discussion will last for approximately 1 – 1½ hours.
- Participation in this study will involve only minimal risks. Every effort will be made by the researchers to minimise the possible negative consequences of participating.



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Informed Consent Form:

The purpose of the study has been explained to me, as well as what I can expect if I decide to participate. I have had the opportunity to ask questions about these, and these questions have been answered to my satisfaction.

I understand that my identity will be kept anonymous.

I consent voluntarily to participate in this study and I understand that I have the right to withdraw from the study at any time without this affecting my antenatal treatment in any way or leading to any negative consequences.

I understand that the focus group discussion will be recorded (audio only), and I consent voluntarily to this.

Participant's signature (or a tick if you would prefer): _____ Date: _____

Signature of investigator: _____ Date: _____

Thank you.

Appendix 3: Quantitative component: Questionnaire:

1. Questions about yourself:

1.1 How old are you? _____ years

1.2 Which race group do you consider yourself to belong to?

Black/African	
Coloured	
Indian/Asian	
White	

Other: _____

1.3 What language do you speak at home?

English	
isiXhosa	
Afrikaans	

Other: _____

1.4 What is the highest level of education that you have completed?

Primary school	
Grade 8 (Standard 6)	
Grade 9 (Standard 7)	
Grade 10 (Standard 8)	
Grade 11 (Standard 9)	
Grade 12 (Standard 10/Matric)	
Diploma	
Degree	

1.5 What is your current employment status?

Unemployed	
Employed part-time	
Employed full-time	

1.6 If you are currently employed, what is your occupation? _____

1.7 What is your major source of income?

Your work	
Your husband/partner	
Other family or household member	
Social grant (for example Child Support Grant)	
Pension	

Other: _____

2. Questions about your child:

2.1 How many weeks pregnant are you? _____

2.2 How many weeks pregnant were you when you came to the antenatal clinic for your booking visit? _____

2.3 Is this your first pregnancy?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

2.4 If this is not your first pregnancy, how many other children do you have?

2.5 Who made the decision to have a child?

The pregnancy was not planned	<input type="checkbox"/>
I made the decision	<input type="checkbox"/>
The father of my child made the decision	<input type="checkbox"/>
We made the decision together	<input type="checkbox"/>
Other family members made the decision	<input type="checkbox"/>

If other family members made the decision, specify who they are (their relationship to you):

2.6 Who do you think should make the decision regarding if and when a woman should have a child?

The woman should make the decision	<input type="checkbox"/>
The woman's partner should make the decision	<input type="checkbox"/>
The woman and her partner should make the decision together	<input type="checkbox"/>
Other family members should make the decision	<input type="checkbox"/>

3. Questions about your relationship with the father of your child:

3.1 Are you married to the father of your child?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

3.2 If yes, how long have you been married to him for? ____ years

3.3 Do you currently live with the father of your child?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

3.4 If yes, how long have you been living with him for? ____ years

3.5 If you are living with the father of your child, how present is he in the home?

He is there during the day	<input type="checkbox"/>
He is only there in the evenings	<input type="checkbox"/>
He is only there over weekends	<input type="checkbox"/>
He is there every few weeks	<input type="checkbox"/>

Other: _____

3.6 How old is the father of your child? ____ years

3.7 What is the highest level of education that the father of your child has completed?

Primary school	
Grade 8 (Standard 6)	
Grade 9 (Standard 7)	
Grade 10 (Standard 8)	
Grade 11 (Standard 9)	
Grade 12 (Standard 10/Matric)	
Diploma	
Degree	
Unknown	

3.8 What is the father of your child's current employment status?

Unemployed	
Employed part-time	
Employed full-time	
Unknown	

3.9 If he is currently employed, what is his occupation? _____

4. Questions about HIV:

4.1 Had you ever been tested for HIV before you attended your booking visit at the antenatal clinic for your current pregnancy?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

4.2 If you had been tested before, was your previous test linked to another pregnancy?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

4.3 If you had been tested before when you were not pregnant, what was your reason for getting tested?

4.4 In what year did you test positive? _____

4.5 Have you ever discussed HIV testing with the father of your child?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

4.6 Do you know what the father of your child's HIV status is?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

4.7 If you do know his status, how did you find out what his status is?

He told me	
We were tested together	

Other: _____

4.8 Have you ever discussed ways to prevent partner transmission of HIV with the father of your child?

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

4.9 Have you ever discussed ways to prevent transmitting HIV to your child with the father of your child?

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

4.10 Are you currently on an antiretroviral regimen (ARVs)?

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

4.11 Are you on a short-course PMTCT prophylaxis regimen (AZT, which you only have to take while you are pregnant), a life-long ART regimen (where you take three different tablets/drugs), or a fixed dose combination (where you only take one tablet/drug)?

Short-course AZT	<input type="checkbox"/>
Life-long ART	<input type="checkbox"/>
Fixed dose combination	<input type="checkbox"/>

4.12 In what year did you start taking ARVs? _____

4.13 How many doses of your ARVs are you supposed to take each day? _____

4.14 During the last 30 days, on how many days did you miss at least one dose of any of your ARVs? _____

4.15 During the last week, on how many days did you miss at least one dose of any of your ARVs? _____

4.16 How many doses of your ARVs did you miss yesterday? _____

4.17 How many doses of your ARVs did you miss the day before yesterday? _____

4.18 Have you missed any doses of your ARVs while you have been pregnant?

Yes	<input type="checkbox"/>
-----	--------------------------

No	<input type="checkbox"/>
----	--------------------------

4.19 If you have missed any doses of your ARVs while you have been pregnant, when was the last time you missed any of your ARVs?

Within the past week	<input type="checkbox"/>
1-2 weeks ago	<input type="checkbox"/>
2-4 weeks ago	<input type="checkbox"/>
1-2 months ago	<input type="checkbox"/>
More than 2 months ago	<input type="checkbox"/>
Never miss ARVs	<input type="checkbox"/>

4.20 If you have missed doses of your ARVs while you have been pregnant, please explain why you were unable to always take the correct dosage:

5. Questions about disclosure:

5.1 Have you told your partner your HIV status?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

5.2 Why did you decide to tell him/not tell him?

5.3 If you have told your partner your HIV status, when did you tell him?

Before I was pregnant	<input type="checkbox"/>
While I was pregnant	<input type="checkbox"/>

5.4 If you have not told your partner your HIV status, have you told anyone else?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

5.5 If you have told someone else your HIV status, what is your relationship with that person? Please select all of the people who you have told:

Mother	<input type="checkbox"/>
Father	<input type="checkbox"/>
Sibling	<input type="checkbox"/>
Any other family member	<input type="checkbox"/>
Friend	<input type="checkbox"/>

Other (for example a traditional healer, priest, another pregnant woman, a community health worker etc): _____

6. Questions about the father of your child's role in your pregnancy:

6.1 Does the father of your child do each of the following?

	Yes	No
Provides financial support for my antenatal visits	<input type="checkbox"/>	<input type="checkbox"/>
Knows when my antenatal visits are	<input type="checkbox"/>	<input type="checkbox"/>
Discusses what happens during antenatal visits with me	<input type="checkbox"/>	<input type="checkbox"/>
Accompanies me to antenatal visits	<input type="checkbox"/>	<input type="checkbox"/>

6.2 Would you like the father of your child to do each of the following?

	Yes	No
Provide financial support for my antenatal visits	<input type="checkbox"/>	<input type="checkbox"/>
Know when my antenatal visits are	<input type="checkbox"/>	<input type="checkbox"/>
Discuss what happens during antenatal visits with me	<input type="checkbox"/>	<input type="checkbox"/>
Accompany me to antenatal visits	<input type="checkbox"/>	<input type="checkbox"/>

6.3 In your community, is it normal/acceptable for the father of your child to do each of the following?

	Yes	No
Provide financial support for my antenatal visits		
Know when my antenatal visits are		
Discuss what happens during antenatal visits with me		
Accompany me to antenatal visits		

6.4 Does the father of your child know that you need to take ARVs?

Yes No

6.5 Does he support or help you to take your ARVs?

Yes No

6.6 If yes, how does he support or help you to take your ARVs?

6.7 If the father of your child does not support or help you to take your ARVs, does anyone else do this?

Yes No

6.8 If someone else supports or helps you to take your ARVs, what is your relationship with that person? Please select all of the people who do this:

Mother	<input type="checkbox"/>
Father	<input type="checkbox"/>
Sibling	<input type="checkbox"/>
Any other family member	<input type="checkbox"/>
Friend	<input type="checkbox"/>

Other: _____

Appendix 4: Qualitative component: Focus group discussion guide:

Broad themes throughout:

- The nature of women's relationships with their male partners
- Gendered power relations within these relationships
- Gender roles and norms

Theme 1: Gender roles

Broad Questions and Probes:

- What are the typical roles of men and women?
 - *What are their roles when they are in a relationship together?*
 - *What are their roles and responsibilities when they have a child together?*
 - Traditionally, the man is seen as being the one who must earn money while the woman stays at home and looks after the house and children – is this still true of men and women's roles today, or have these roles changed?
 - *Would the fact that a woman is HIV-positive change these roles at all? Does a man have different responsibilities when his partner is HIV-positive and pregnant? Does a man have any specific responsibilities when his partner is accessing PMTCT services?*

Theme 2: Decision-making regarding having a child

Broad Questions and Probes:

- We have noticed that many of the women who we have spoken to had not planned to have a child. Do you think that this is true of most women who fall pregnant?
 - *If yes, what are the reasons for this?*
- We have also noticed that many unmarried women fall pregnant. Do you think that this is the norm nowadays?
 - *Is marriage an outdated tradition, or is there still a place for marriage in our society?*
- Is it expected for a woman in your community to have a child?
 - *If a woman in your community did not have a child, would she be looked down on or treated differently?*

Theme 3: HIV testing and disclosure

Broad Questions and Probes:

- Why do you think that HIV testing is important?
 - *Is testing only important in an antenatal setting, or are there other important situations during which women should be tested?*
- Do women generally tell their partners before they get tested?
 - *If not, why do they not tell them?*
- After they have been tested, is it difficult for women to tell their partners their status?
 - *If yes, what do you think makes it difficult? If it is not difficult, what do you think makes it easy?*

- *Are women given any support from health workers in order to make disclosure easier?*
- *Is disclosing to a male partner different to disclosing to a family member or friend?*
- We would like to speak next about couples counselling and testing, where couples are tested and receive counselling together.
 - *Is counselling and testing available to couples at this clinic? Are couples encouraged to be tested together?*
 - *Have you ever been offered couples counselling? If yes, where were you offered this?*
 - *Where do you think the best place would be for couples counselling to occur?*
 - *Do you think that women like you would be willing to have HIV counselling and testing with their partners?*
 - *Would you prefer to be tested on your own, or would you like the opportunity to be tested with your partner?*

Theme 4: Male partner involvement in pregnancy

Broad Questions and Probes:

- Do you feel that pregnancy is purely a women's issue, or is pregnancy something that both men and women should be involved in?
- What do you feel is a man's role during pregnancy?
 - *What are his responsibilities while his female partner is pregnant? Is his only responsibility to provide financial support, or is his role more than this?*
 - *What do your partners do to help you with your pregnancies?*
 - *What would you like your partners to do to help you with your pregnancies?*
 - *In your community, what is seen as normal for a man to do to help his female partner while she is pregnant?*
 - *If men are not very involved in pregnancy, then why do you think that they are not more involved? Have you experienced barriers against male involvement? If yes, what barriers have you experienced?*
- Do you think that men are always supportive of their partners, or do they become more supportive and involved when their partners are pregnant?
 - *We have noticed that some men support their partners to take their ARVs every day. Do you think that male partner support is helpful for adherence? Do men become more supportive when their partners are pregnant, or are they always supportive (regarding adherence and issues related to HIV)?*
- Do you think that it would be acceptable if a man came with his partner to the clinic for antenatal visits?
 - *Would other pregnant women find it acceptable? Would the staff at the clinic find it acceptable?*
 - *Is there space in the clinic for men, or do they have to wait outside the clinic?*
 - *Did your partners come with you to your antenatal visits? Did they come inside the clinic, or did they wait outside until you were finished?*
 - *If men wait outside the clinic, why do you think this happens? What do men do while they wait?*
 - *How would the health care providers treat men if they were present?*
- Do you think that it would be acceptable if a man was present when his partner gave birth?

- *Would other pregnant women find it acceptable? Would the staff at the clinic find it acceptable?*
- *Is it more acceptable for a man to be present at antenatal visits or when his partner gave birth, or are both equally acceptable?*
- *Would you like your partner to be present when you give birth?*
- *In your community, is it acceptable for a man to be present when his female partner gives birth?*

Appendix 5: Letter of Approval from UCT Faculty of Health Sciences

Human Research Ethics Committee:

UNIVERSITY OF CAPE TOWN



Faculty of Health Sciences
Faculty of Health Sciences Human Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone: (021) 406 6338 • Facsimile: (021) 406 6111
e-mail: sumayeh.arietdien@uct.ac.za
www.health.uct.ac.za/research/humanethics/forms

08 February 2013

HREC REF: 032/2013

Ms K Brittain
c/o Dr K Steyn
Public Health & Family Medicine
Falmouth Building

Dear Ms Brittain

PROJECT TITLE: MALE PARTNER INVOLVEMENT DURING PREGNANCY: THE MISSING COMPONENT IN PMTCT ADHERENCE IN KHAYELITSHA

Thank you for addressing the issues raised by the committee.

It is a pleasure to inform you that the HREC has formally approved the above mentioned study.

Approval is granted for one year till the 28 February 2014.

Please submit a progress form, using the standardised Annual Report Form, if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the REC REF in all your correspondence.

Yours sincerely

PROFESSOR M. BLOKMAN
CHAIRPERSON, HSF HUMAN ETHICS

Federal Wide Assurance Number: FWA00001637
Institutional Review Board (IRB) number: IRB00001938

Appendix 6: Letter of Approval from Western Cape Department of Health:



STRATEGY & HEALTH SUPPORT
Health Research@WesternCape.gov.za
Tel: +27 21 463 9922 (ext. 427 21 463 9909)
211 Road, Newton Road House, 5th Floor, Simon Cape Town, 8001
www.health.westerncape.gov.za

REFERENCE: RP 019/2013
ENQUIRIES: Ms Charlene Roderick

Centre for Infectious Disease Epidemiology and Research
School of Public Health and Family Medicine
Level 5, Falmouth Building
Observatory
7925

For attention: Mrs Kirsty Brittain, Dr Kathryn Simpson, Assoc. Prof. London Myer and Dr Di Cooper

Re Male partner involvement during pregnancy: The missing component in PMICT adherence in Khayelitsha?

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research. The approval is granted under the proviso that staff asked to complete the questionnaire are not distracted from their duties, i.e. have the time. I have copied in our information officer Mr Walker and Ms Keightley our HOD reception services.

Please contact the following people to assist you with any further enquiries.

Khayelitsha Site B	Mr M Ntsha	Contact No. 021 361 4835
Michael Mapngwana	Ms Masiyela	Contact No. 021 361 3353

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities of requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final report within six months of completion of research. This can be submitted to the provincial Research Co-ordinator: Health_research@westerncape.gov.za.
3. The reference number above should be quoted in all future correspondence.

Yours sincerely

Dr NI Naledi
DIRECTOR: HEALTH IMPACT ASSESSMENT
DATE:
CC DR A FAWKRIDGE

DIRECTOR: EASTERN / KHAYELITSHA

Appendix 7: AIDS and Behavior: Instructions for authors:

Manuscript Preparation

- Type double-spaced on one side of 8 ½ × 11-inch white paper using generous margins on all sides, (including copies of all illustrations and tables).
- A title page is to be provided and should include the title of the article, authors name (no degrees), authors affiliation, and suggested running head. The affiliation should comprise the department, institution (usually university or company), city, and state (or nation) and should be typed as a footnote to the authors name. The suggested running head should be less than 80 characters (including spaces) and should comprise the article title or an abbreviated version thereof. For office purposes, the title page should include the complete mailing address, telephone number, fax number, and email address of the one author designated to review proofs.
- With the exception of Brief Reports and Behavioral Surveillance Reports, initial submissions to AIDS and Behavior do not have word or page limits. Briefer and more succinct papers tend to review better and papers may be reduced in length as part of the review process. However, the length of the original submission is left to author discretion.
- An abstract is to be provided, preferably no longer than 150 words.
- A list of 4-5 key words is to be provided directly below the abstract. Key words should express the precise content of the manuscript, as they are used for indexing purposes.
- All sections should carry headings (such as INTRODUCTION, METHODS, RESULTS, DISCUSSION, CONCLUSIONS, etc.), typed flush left. All acknowledgments (including those for grant and financial support) should be typed in one paragraph (so-headed) on a separate page, that directly precedes the References section.
- Illustrations (photographs, drawings, diagrams, and charts) are to be numbered in one consecutive series of Arabic numerals. The captions for illustrations should be typed on a separate sheet of paper. All illustrations must be complete and final, i.e., camera-ready. Photographs should be large, glossy prints, showing high contrast. Drawings should be high quality laser prints or should be prepared with india ink. Either the original drawings or good-quality photographic prints are acceptable. Artwork for each figure should be provided on a separate sheet of paper. Identify figures on the back with authors name and number of the illustration. Electronic artwork submitted on disk should be in the TIFF or EPS format (1200 dpi for line and 300 dpi for halftones and grayscale art). Color art should be in the CYMK color space. Artwork should be on a separate disk from the text, and hard copy must accompany the disk.
- Tables should be numbered (with Roman numerals) and referred to by number in the text. Each table should be typed on a separate sheet of paper. Center the title above the table, and type explanatory footnotes (indicated by superscript lowercase letters) below the table.
- AIDS and Behavior does not have a limit on number of authors. However, if deemed to be excessive the editor may request author justifications and reductions.

AIDS and Behavior uses Vancouver style as outlined in the American Medical Association Manual of style: A Guide for Authors and Editors, 10th Edition.

A reference number is allocated to a source in the order in which it is cited in the text. In text, identify references as Arabic numerals in brackets (1). If the source is referred to again, the same number is used. References are listed in numerical order in the Reference List at the end of the paper. Do not alphabetize. Use abbreviated names of journals according to the journal list in PubMed. List all authors and/or editors up to 6; if more than 6, list the first 3 followed by “et al.” The following are examples.

- 1) McKirnan DJ, Venable PA, Ostrow DG, Hope B. Expectancies of sexual "escape" and sexual risk among drug and alcohol-involved gay and bisexual men. *J Subst Abuse*. 2001;13(1-2):137-54.
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- 4) Bangsberg D, Hecht F, Charlebois E, Chesney M, Moss A. Comparing objective measures of adherence to HIV antiretroviral therapy: electronic medication monitors and unannounced pill counts. *AIDS Behav* 2001, 5:275–281.
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Verify that every instance of a number in text corresponds to the numbered reference. Footnotes should be avoided. When their use is absolutely necessary, footnotes should be numbered consecutively using Arabic numerals and should be typed at the bottom of the page to which they refer. Place a line above the footnote, so that it is set off from the text. Use the appropriate superscript numeral for citation in the text.