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**FACTORS INFLUENCING MALE INVOLVEMENT IN PREVENTION OF MOTHER-TO-CHILD
TRANSMISSION SERVICES IN KHAYELITSHA, CAPE TOWN, SOUTH AFRICA**

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AT THE UNIVERSITY OF CAPE TOWN

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DECLARATION

I, Alice Norah Ladur, hereby declare that this is my original work and has not been presented before for the award of a Masters' Degree in Public Health.

DEDICATION

This thesis is dedicated to Samuel Opoka, Mrs Gertrude Opoka and to the late Isabella Angut.

THESIS ABSTRACT

Mother-to-child transmission (MTCT) of HIV, also known as vertical transmission of HIV accounts for 90% of HIV infections in children. Children acquire HIV from the mother during pregnancy, birth or breastfeeding (1). In South Africa, an estimated 220,000 children were infected with HIV in 2008 (2). The prevention of mother-to-child transmission (PMTCT) of HIV has been recognized as an essential intervention in the fight against HIV/AIDS as well as the reduction of child and maternal mortality. However, uptake of PMTCT services by women has been reported to be low (3). There is need to provide effective PMTCT programmes in South Africa where 29.3% of pregnant women attending the public health antenatal clinics in 2008 were HIV infected (4).

Male involvement in PMTCT services could potentially improve the provision of this service. The involvement of male partners has been widely recognized and recommended as a crucial step in improving the success of PMTCT programmes in resource-constrained settings (5). Involvement of male partners in antenatal care and voluntary counselling and testing (VCT) is associated with increased uptake of interventions to prevent vertical and sexual HIV transmission (6,7,8). However, there are low levels of active male participation in maternal health in South Africa (9). Exploring determinants of low male involvement in PMTCT is important if appropriate recommendations are to be made.

This study sought to explore the role of men in the prevention of mother-to-child transmission services in Khayelitsha, South Africa. Two focus group discussions were held with 25 men of unknown status and one focus group discussion held with 12 HIV-positive women in the community. In-depth interviews were also conducted with four HIV-positive couples and five service providers purposely sampled from the community and a health facility, respectively.

All participants interviewed in this study were receptive towards male involvement in PMTCT. However, men were reluctant to engage with health services due to stigma and negative attitudes from nurses. This study also found HIV testing, disclosure, and direct health worker engagement with men might increase male involvement in PMTCT.

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Part A: Protocol

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STUDY PROTOCOL

Background

Mother-to-child transmission (MTCT) of HIV, also known as vertical transmission of HIV accounts for 90% of HIV infections in children. Children acquire HIV from the mother during pregnancy, birth or breastfeeding (1). In South Africa, an estimated 220,000 children were infected with HIV in 2008 (2).

The prevention of mother-to-child transmission (PMTCT) of HIV has been recognised as an essential intervention in the fight against HIV/AIDS and the reduction of child and maternal mortality. There is a need to provide an effective PMTCT programme in South Africa where 29.3% of pregnant women attending the public health antenatal clinics in 2008 were HIV infected (3). Without any interventions, between 20% and 45% of infants may become infected with HIV through MTCT (4).

Male involvement in PMTCT services could potentially improve the provision of this service. The involvement of male partners has been widely recognised and recommended as a crucial step in determining the success of PMTCT programmes in resource-constrained settings (5). Involvement of male partners in antenatal care and voluntary counselling and testing (VCT) is associated with increased uptake of interventions to prevent vertical and sexual HIV transmission (6,7,8). However, there are low levels of active male participation in maternal health in South Africa (9) . Exploring these factors is important if appropriate recommendations are to be made.

This study seeks to explore male perspectives on maternal and child health and to understand factors influencing male participation in PMTCT services in Khayelitsha community.

Research Question and Sub-Questions

What is the role of men in the prevention of mother to child transmission in Khayelitsha?

Sub-questions

What do men perceive as their role in PMTCT services in Khayelitsha?

What are the factors influencing male involvement in PMTCT services in Khayelitsha?

Study Methodology

1) Study design

This is a cross-sectional qualitative study using focus group discussions and in-depth interviews.

2) Population

The target population for this study will include men, women, mid-wives, doctors and counsellors, community health workers and non-governmental organisations (NGO), in Town Two, Khayelitsha.

3) Sampling and Recruitment

Recruitment will commence once approval for the study has been granted by the Research Ethics Committee of the University of Cape Town.

Purposive sampling will be used to recruit potential participants into the study. This involves the deliberate selection of individuals by the researcher. Purposive sampling will enable the inclusion of individuals with substantial knowledge and/or experience about male involvement in PMTCT programmes.

Participants will be recruited (for focus group discussions and in-depth-interviews) using the researcher's existing working and professional networks in Town Two, Khayelitsha. A research coordinator based in Town Two will identify and approach people to participate in the study, based on already established and existing social networks in the community. An information leaflet giving a broad outline of the purpose, risks, benefits of the study and contact details of the principal investigator, in case of any queries will be given out to potential participants.

The inclusion criteria will be men and women aged 18-40 years living in Khayelitsha. Men of unknown status and HIV-positive women currently accessing PMTCT services or who have accessed/utilised the PMTCT service in the last 1-2 years will be eligible to participate in the study. Key informants involved in PMTCT service provision such as doctors, mid-wives, counsellors, non – governmental organisations and community health workers will be included.

4) Data collection

This study will employ qualitative research tools and techniques of data collection. The entire study will take approximately 9-10 months from recruitment of study participants to data analysis and dissemination. This research will utilize the following data collection tools: in-depth interviews and focus group discussions.

5) Focus group discussions (FGDs)

The focus groups will be stratified by age and sex. Two focus group discussions will be held with men of unknown status, aged between 18-29 years and 30-40 years, respectively. One focus group discussion will be held with HIV-positive women. The groups will consist of 4-8 participants.

A central venue such as the community hall will be used for the discussions. The participants will be provided with refreshments and snacks while attending the discussion and a refund for transport costs if any. Sessions will be scheduled at the convenience of the study participants and will last for about one hour and a half.

6) In-depth interviews

In-depth interviews will be held with 5 to 7 key informants among which will include doctors, mid-wives, community health workers, counselors and couples. These will take place in the community health facilities, lasting for about 45 minutes. Interviews will be scheduled at the convenience of study participants.

7) Data Management

In all the focus groups and interviews, notes shall be taken and responses recorded on tape with respondent's consent. For purposes of security and confidentiality, data from this research shall be managed by the principal investigator and her supervisors who will ensure that all physical data (field notes, digital recordings of all interviews, transcripts etc) are kept and locked in the principal researcher's office for centrality. Access to this material will only be through the principal researcher and her supervisors. Also to avoid accumulation of collected data, transcription of recordings and typing of field notes will begin as soon as possible after each data collection event.

Prior to data collection the researchers will create folders of all necessary forms for each kind of data collection event using large envelopes (archival envelopes). Each of these envelopes will contain materials needed for each data collection event such as questionnaires, interview guides, note-taker form, informed consent forms, reimbursement form and any other materials necessary.

8) Data Analysis

The data will be analyzed through domain analysis. Through the process of performing constant comparative analysis of field notes and questionnaires, we will categorize and code emerging patterns and commonalities. By applying constant comparative analysis, any significant differences or deviations within study participants will be recognised.

Domain analysis involves four steps namely: (1) Identification of the main issues raised by the interviewees, (2) Identification of secondary issues raised by the interviewees, (3) specification of the contents of the interview i.e. what are the opinions/ experiences/ views of interviewees; (4) finding the connection between the main issues and the sub-issues.

As data analysis is an iterative process, constant coding, reading, re-reading, reflecting, rephrasing, analyzing and verifying after each interview and focus group discussion will take place. Data analysis will be done right through the research study to identify themes, to develop tentative explanations and to identify possible gaps in data collection. Attention will be paid to deviant information that emerges and it will be further investigated to yield potential new insights. During all stages of data collection and analysis, there will be a constant search for core meanings of thoughts, feelings and behaviours of the interviewees. This will aid the researcher to identify missing or underdeveloped information.

Ethics

Due to the sensitive nature of the research involving HIV and intimate sexual partners, potential conflicts may arise between partners that may have not disclosed their HIV status. This study will recruit couples that have disclosed their status to minimise such risks.

This study may cause some discomfort and tension arising from discussions among study participants on views that may seem to openly challenge cultural norms of men 'having nothing to do' with pregnancy and child birth.

Men who openly support partner involvement in the lives of their spouses may be stigmatised and ridiculed by their counter-parts in the community. However, study participants will be cautioned to respect various opinions from colleagues in the discussions.

Participants may experience emotional distress arising from community members 'pointing fingers'/associating them (study participants) with being HIV positive and/or isolating and gossiping about them. Personal experiences will be explored in the interviews and focus group topics will consider both HIV- and non HIV-related attitudes and behaviour.

Participants will not receive any immediate individual benefits by choosing to participate in this study. However, refreshments will be given to study participants at the end of each session and a transport refund where necessary.

The benefits would be that the lessons learnt and recommendations from this study will assist the Department of Health, policy makers and program implementers in designing/improving existing services geared towards increased male involvement in antenatal care and improved uptake of prevention of mother to child transmission programs amongst women.

Ethical approval to conduct this study will be obtained from University of Cape Town's Research Ethics Committee. Permission will also be obtained from community leaders and Department of Health.

Informed consent will be obtained from each of the study participants, after addressing them in writing about the study to be undertaken. This will be done a day prior to the focus groups and

interviews in Xhosa and English to give participants time to consider their involvement in the study. It will be emphasized that participation is voluntary and that participants are free to withdraw from the study at any stage without any penalties. Permission will be obtained from participants to record group discussions and interviews and to quote them during the reporting and disseminating phase of the study, without revealing their identity. Participants will be informed that though the research team will do everything possible to guarantee confidentiality, they would not prevent information leakage by other participants in the discussion groups as these will be done within a group setting.

Write-Up and Dissemination

This research will be of interest to a number of stakeholders including the Department of Health, mid-level service providers, PMTCT programme co-ordinators, and non-governmental organisations such as Sonke Gender Justice Network, Men as Partners and Engender Health. All of these groups will be included in the dissemination.

The researchers will organize a workshop in the community to inform study participants of lessons learnt accordingly.

The findings of this study will be presented to management and policymakers within department of health and health care facilities. The aim of the presentation would be to provide management and policymakers with relevant and useful data that will give a glimpse into the social issues influencing active male participation in PMTCT services.

The research findings will also be presented at various seminars and workshops to non-governmental organizations (NGO's) dealing with women and men's health/gender organisations. And lastly, the research findings will be disseminated in AIDS Portal database and through academic journals and conferences.

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Part B: Structured Literature Review

University of Cape Town

LITERATURE REVIEW

Literature review objectives

The objectives of this literature review were to review previous studies that have been done on the role of men in PMTCT and to describe enablers and barriers to male participation. Reviewing existing literature would place this research into context, providing a rationale to conduct this study. Consequently, gaps or areas that need further research on male participation in PMTCT would be highlighted.

Literature search strategy

An electronic search was conducted in the following databases; EBSCO (Academic Search Premier), PubMed, Science Direct (Elsevier), MedLine, Web of Science and Inter-Science (Wiley), to identify relevant studies in peer-reviewed journals and unpublished reports. The following key words were used in various combinations; male, participation, PMTCT, barriers, men, roles, pregnancy, HIV testing, couples, infant feeding, antenatal care and family planning. Additional articles were retrieved from bibliographies of selected articles. Searches were also made on the web pages of international organizations like World Health Organisation (WHO), United Nations Children`s Fund (UNICEF) and UNAIDS. Reports and publications were also taken from South African National and Provincial Department of Health web pages.

Studies included in this literature review consisted of full text articles and abstracts published in English journals and web pages that addressed gender, HIV/AIDS, masculinity, men or partner involvement or participation, couples, HIV testing, infant feeding, antenatal care and prevention of mother-to-child transmission in Africa. Both qualitative and quantitative studies conducted within sub-Saharan Africa were included in this literature review.

HIV/AIDS epidemic in Sub-Saharan Africa

Sub-Saharan Africa shouldered the greatest burden of HIV infections in 2007, accounting for 67% of people living with HIV/AIDS (1). An estimated 22.5 million people were living with HIV in this region in 2009. Research points to 2.3 million children living with HIV and 1.3 million AIDS deaths among children in 2009 (2).

Within Africa, Southern Africa bears the biggest burden of the epidemic. In 2009, Southern Africa had an estimated 11.3 million people living with HIV (2). The literature suggests that women and children again bear a bigger portion of the HIV/AIDS epidemic in Southern Africa, accounting for 60% of all new infections (3).

In South Africa, an estimated 5.6 million people were living with HIV in 2009, while AIDS-related illnesses accounted for 35% of all deaths in children less than five years respectively (4,5). Unprotected heterosexual exposure and mother-to-child transmission (MTCT) are the main routes of HIV transmission in adults and children in Sub-Saharan Africa (6, 7).

1) Programmes to prevent mother-to-child transmission of HIV

Mother-to-child transmission (MTCT) of HIV, also known as vertical transmission of HIV is the primary cause of HIV infection in children under 15 years of age (8). Children acquire HIV from the mother during pregnancy, birth or breastfeeding (9). The risk of MTCT is estimated at 5-10% during pregnancy, 10-20% at birth, and 5-20% during the breast-feeding period (3).

In South Africa, HIV prevalence among women accessing antenatal services was estimated at 29.4%, while an estimated 200,000 children (under-five) acquired HIV in 2007 (10,11). In addition, nearly 75,000 children die annually in South Africa before their fifth birthday as a result of AIDS-related illnesses acquired through MTCT (12). Prevention of mother-to-child transmission (PMTCT) programmes offer a unique opportunity to reduce the number of AIDS-related deaths in children under five years in South Africa. It is, therefore, important to explore different ways in which PMTCT programmes could be enhanced in sub-Saharan Africa in order to improve the outcomes for children born of HIV positive mothers. PMTCT programmes have also been recognized as an entry point to HIV care for mothers and their families, promoting maternal and family health (13) .

Efforts to prevent the transmission of HIV from mothers to infants are often linked to Millennium Development Goals (MDG) four, five and six which highlight the need for countries to reduce child mortality, maternal mortality and combat HIV/AIDS and malaria respectively by 2015 (14).

The scientific literature suggests PMTCT can be effective if a package of evidenced-based interventions is made available and used by HIV-positive women and mothers (15). This package of

interventions is based on the four steps of the United Nations strategic approach for PMTCT. These steps include: primary prevention of HIV infection, prevention of unintended pregnancies among HIV-infected women, prevention of mother to child transmission of HIV, and provision of appropriate treatment, care and support for HIV-infected mothers and their infants respectively (16).

A number of PMTCT programmes in African countries have been shown to focus primarily on voluntary HIV testing and counselling, antiretroviral treatment or prophylaxis for the mother and infant, modified obstetric practices, and modified infant-feeding counselling (17).

The PMTCT programme in South Africa is currently available in 3,000 primary health care facilities countrywide since initial roll-out in 2001 (18). The National Department of Health plans to scale up PMTCT coverage and improve quality of services to reduce mother-to-child transmission to less than 5% by 2011 (19) .

All pregnant women testing HIV positive are supposed to receive a dual therapy protocol of Azidothymidine (AZT) and Nevirapine (NVP) at 14 weeks if they have a CD4 cell count above 350 cells/uL. Women who have a CD4 count less than 350 cells/uL are eligible to be initiated on lifelong antiretroviral therapy (ART) (20,21).

As mentioned above, the PMTCT programme in South Africa is organised around four stages including; primary prevention of HIV, antenatal care, labour and delivery, and post-natal care, respectively. Stages one and two focus more on prevention of HIV and unintended pregnancies through HIV testing, encouraging safer sex practices and contraceptive use. Stages three and four (labour and delivery, postnatal care) focus more on providing ART treatment and care for HIV-positive women to avoid mother-to-child transmission of HIV during delivery and or infant feeding (18).

2) Barriers to PMTCT programmes

Uptake of PMTCT programmes in South Africa, however, has been reported to be low, at 47%, despite a fairly high HIV testing coverage (81%) among pregnant women attending antenatal care in 2008 (11) . Research findings from a study in South Africa showed that inadequate knowledge and awareness of HIV/AIDS, stigma and social exclusion of HIV-positive women were some of the factors

that prompted high dropout rates between HIV testing and uptake of PMTCT. This study further suggested lack of access to clean water and unequal power relations between pregnant women and older women (mothers and mothers-in-law) influenced infant feeding options (22).

Across sub-Saharan Africa, PMTCT programmes face challenges from a wide range of health services barriers and community barriers. Studies carried out in Zimbabwe, Kenya, Ethiopia, Zambia and South Africa, for example, suggest health system-related difficulties in accessing health facilities such as long walking distances, long waiting times, staff attitudes and patients being turned away as important factors in loss to follow up of women utilising PMTCT services in resource-constrained settings (17,23,24,25). Furthermore, in findings from research within sub-Saharan Africa, staff shortages, fear of a breach in confidentiality, and shortages in supplies at health facilities have been noted to undermine uptake of PMTCT services (26,27). Inadequate space to conduct PMTCT interventions such as HIV counseling and testing, infant feeding and ART for HIV-positive pregnant women along with involuntary disclosure of HIV status and labelling of pregnant women accessing the service have also been cited as impacts on PMTCT service delivery (28,29).

There is also a range of important barriers within the community and individual contexts. Women's low status, refusal to test, denial of sero-positive status and non-disclosure of HIV status have been reported to undermine uptake of PMTCT services (30,31). These have been cited as common reasons for both women and men not accessing HIV testing and treatment services. These factors could be a result of some broader forces including social stigma against HIV, competing or alternative explanations for illness, unequal power relations within family relationships (within couples but also within families) and economic marginalization. Although many of the forces are general to these populations, women, especially pregnant women, also face a range of added social and economic vulnerabilities that act as added barriers to accessing PMTCT services.

Male involvement

Recently, greater attention has been paid to the potential impact of male involvement in sexual and reproductive health (32,33). Lack of partner support and men's limited knowledge about the link between antenatal care and prevention of HIV, for example, often acts as a hindrance to seeking early and effective care (34). The broader literature on HIV/AIDS and gender further suggests that the HIV/AIDS pandemic in South Africa is of a gendered nature and as such, it is pivotal to scale up ways of active partner participation and addressing gender issues (33, 35,36).

Global interest in the concept of male involvement in maternal and child health can be traced back to the 1994 International Conference on Population and Development held in Cairo, Egypt and the 1995 Beijing Platform for Action held in Beijing, China. Both conferences recognised the vital roles men play in promoting women and children's wellbeing and stressed the need for governments and civil society organisations to actively involve men in family and reproductive health issues (37,38).

Furthermore, a number of studies have shown that the involvement of male partners of pregnant women can be crucial to the success of PMTCT interventions (39,40,41). The benefits of male involvement include increased knowledge of HIV and ANC within the couple and increased supportive behavior (42). Male partners may be involved in the PMTCT programme at several points including; HIV testing, infant feeding, ART adherence, prevention of unintended pregnancies and provision of care and support during pregnancy (43). Though we have growing evidence that men's involvement in these various stages of the PMTCT process can have an important benefit, we also know that men's involvement in many settings is very low. The sub-sections below review some of the current evidence on men's levels of involvement and explore some of the reasons for their typically low engagement with HIV-related services.

1) HIV counselling and testing

According to Theuring et al (2009), couple testing may serve as an entry point to women utilising PMTCT services in patriarchal communities and in settings where women have limited autonomy in decision-making (44). Women in such settings may have to seek permission from a male figure in the home before accessing medical services. Involving men in couple testing provides a unique opportunity for men to acquire knowledge on HIV and PMTCT and provide support to pregnant partners. Acceptance of couple HIV testing has been noted to help in facilitating disclosure and adoption of less risky sexual behaviour (45,46).

In general, low levels of male HIV testing (even lower in ANC) have been reported in several studies conducted in various parts of Africa despite scale up of the provision of voluntary counselling and testing (VCT) services and educational programmes. Studies conducted in Cameroon, Ivory Coast, Kenya, Tanzania, Malawi, South Africa and Burkina Faso reported low uptake of HIV testing services by men citing a number of reasons such as; fear of knowing one's seropositive status, time constraints, fear of stigma and using the woman's HIV status as a criteria confirming their own status

(referred to as 'proxy testing') (41,47,48,49,50). In addition, Greig et al (2008) argues that men's reluctance to engage with the health services is a barrier to men seeking HIV testing and treatment. Men are reluctant to go to clinics, often regarded as women's spaces, for fear of being labelled as weak (36).

2) ART adherence

According to Byamugisha et al (2010), involvement of male partners of pregnant women attending antenatal care clinics can also improve maternal and infant ART adherence (51). Men's role in providing emotional and material support to partners, including financial support, permission to access health care, monitoring drug compliance and helping out on household chores, have been identified in several studies as ways to improve women's uptake of PMTCT services and reduce loss to follow up (52,53,54) . A cohort study conducted in Kenya showed increased likelihood of uptake of Nevirapine in women who had undergone couple counselling during antenatal care (39). Furthermore, findings from a survey conducted in Tanzania showed that women whose partners were knowledgeable about HIV and had accompanied their wives to antenatal clinics were more likely to accept HIV prevention and treatment messages (55).

3) Infant feeding practices

A qualitative study conducted in five developing countries (Kenya, Cameroon, Cambodia, Cote d'Ivoire and Burkina Faso) found that male partners could exert authority in the community to support their wives' infant feeding choice and insulate them from societal and community pressure (56). This study also highlighted the fact that partner attitude to infant feeding options often determined the woman's decision on whether to breastfeed or use formula feeding. A similar study conducted in Ivory Coast by Traoré et al (2009) found that women whose partners were informed and had tested for HIV were more supportive and respectful of their choice to formula feed the baby and actively participated in feeding the baby, as well as containing family pressure (57) .

Similarly, empirical evidence from research findings conducted in South Africa and West Africa suggest that denial of HIV seropositive status and partner indifference to societal pressure is associated with non-compliance with recommended infant feeding practices among HIV-positive mothers (20, 50).

4) Prevention of unintended pregnancies/contraceptive use

Contraceptive usage and prevention of unintended pregnancies amongst HIV-positive women may be an important strategy of prevention of HIV transmission in infants. There is a consensus that male involvement in family planning usage is vital for both acceptability of contraceptive use and increased uptake of family planning (58).

Low levels of male participation and interest in family planning, however, have been noted in various parts of Sub-Saharan Africa (59,60,61). Literature further suggests that decisions around childbirth and/or number of children are largely determined by men (61,62). Research in Kenya showed that men's desire for children can be significantly higher than that of women (63), which may limit women's ability to prevent unplanned pregnancies in settings where women have less autonomy in decision-making.

Gaps or needs for further research

The studies mentioned above highlight the potential for greater involvement of men in reproductive health decisions and HIV. Male involvement has the potential to bring about change because of the social power men hold in patriarchal settings. Unequal power relations, however, pose a problem when men do not support women or actively intervene in health-seeking actions. The current shape of gender relations in South Africa and Africa makes the role of men in family care and/or PMTCT important.

However, in reviewing these studies, little is known about why some men choose to get involved in PMTCT services while others do not. Although there is increasing evidence that men can make a difference in maternal health, little is known about under what conditions men choose to get involved. Furthermore, little is known about the factors that influence male participation in PMTCT programmes in South Africa, from either client or services' perspectives. The National PMTCT Guidelines call for partner involvement in the expanded package of PMTCT services. However, without an understanding of the barriers and enablers to male participation in PMTCT, it will be difficult to implement these services effectively. This study aimed to explore men's and women's perceptions of male involvement in PMTCT in order to provide insights into possible ways of increasing male partner participation in antenatal care and reduce loss to follow up of pregnant women accessing PMTCT services.

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Part C: Journal “Ready” Manuscript

AIDS and Behaviour

University of Cape Town

**FACTORS INFLUENCING MALE INVOLVEMENT IN PREVENTION OF MOTHER TO CHILD
TRANSMISSION SERVICES IN KHAYELITSHA, CAPE TOWN, SOUTH AFRICA**

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Abstract

Involving male partners of pregnant women accessing PMTCT programs is important to reduce loss to follow up and improve uptake of PMTCT services. This study explored the roles of men in the prevention of mother to child transmission of HIV in Khayelitsha, South Africa. Two focus group discussions were held with 25 men of unknown status and one focus group discussion held with 12 HIV-positive women in the community. In depth interviews were conducted with four HIV-positive couples and five service providers purposely sampled from the community and a health facility, respectively. Both men and women interviewed in this study were receptive towards male involvement in PMTCT. However, men were reluctant to engage with health services due to stigma and negative attitudes from nurses. This study also found HIV testing, disclosure and direct health worker engagement with men increases male involvement in PMTCT.

Keywords

South Africa, PMTCT, Male involvement, Participation.

Background

In South Africa, an estimated 5.6 million people were living with HIV in 2009, while AIDS-related illnesses accounted for 35% of all deaths in children less than five years of age (1,2). Unprotected heterosexual exposure and mother to child transmission are the main routes of HIV transmission in adults and children in South Africa, respectively (3, 4).

Mother-to-child transmission (MTCT) of HIV, also known as vertical transmission of HIV, is the primary cause of HIV infection in children under 15 years of age (5). Children acquire HIV from the mother during pregnancy, birth or breastfeeding (6). The risk of HIV transmission from the mother to the child is estimated at 5-10% during pregnancy, 10-20% at birth and 5-20% during the breastfeeding period (7). Nearly 75,000 children die annually in South Africa before their fifth birthday as a result of AIDS-related illnesses acquired through MTCT(8).

Prevention of mother-to-child transmission offers a unique opportunity to reduce the number of HIV-related deaths in children under five years in South Africa. HIV prevalence among women accessing antenatal services in South Africa was estimated at 29.4% while an estimated 200,000 children (under-five) acquired HIV in 2007 (9,10). However, uptake of PMTCT programmes, has been

reported to be low, at 47%, despite a fairly high HIV testing coverage (81%) among pregnant women attending antenatal care in South Africa in 2008 (10).

Considerable attention has been drawn to the potential influence of male involvement in sexual and reproductive health in Africa (11, 12) . According to Byamugisha, et al, 2010, involvement of male partners of pregnant women attending antenatal care clinics can also improve maternal and infant ART adherence (13) . Men's role in providing emotional and material support to partners including financial support, permission to access health care, monitoring drug compliance and helping out on household chores have been identified in several studies as ways to improve women's uptake of PMTCT services and reduce loss to follow up (14,15,16).

Lack of partner support and men's limited knowledge about the link between antenatal care and prevention of HIV, for example, often acts as a hindrance to seeking early and effective care (17, 18). Low levels of active male participation in antenatal care and PMTCT have been reported in South Africa (18,19) . Exploring these factors is important if appropriate recommendations are to be made. This study explored the role of men in the prevention of mother-to-child transmission of HIV in Khayelitsha, South Africa.

Methods

The study was conducted in the Khayelitsha sub-district of the Western Cape Province in South Africa. Khayelitsha is representative of many poor urban areas in South Africa, with a large proportion of the population having migrated from rural areas. The population is estimated at 500,000, with the majority of inhabitants living in informal dwellings (2 ,20). Poverty, unemployment and crime as well as sexual violence in Khayelitsha are rife. Khayelitsha has a considerably high antenatal HIV prevalence estimated at 31.1% in 2008. Approximately 31% of all adults on antiretroviral treatment in the Cape Town metropolitan area receive ART treatment in Khayelitsha (21).

Data for this study was collected using exploratory qualitative methods: focus group discussions and in-depth interviews between July and October 2010. Focus group discussions were conducted in isiXhosa and transcribed into English by an experienced field worker. In-depth interviews were conducted in English and Xhosa, transcribed by the researcher and a fieldworker, respectively.

Two focus group discussions were held with 25 men of unknown HIV status aged between 18-40 years living in Khayelitsha. Men between ages 18 and 40 were sampled using convenience sampling from the community through an existing local research coordinator. These men were then divided into two age categories: younger men (18-29 years) and older men (30-40 years) and discussions were held separately with each group on different days. 11 younger men participated in one group and 14 older men participated in the other. Only eight participants out of twenty-five men were living with their partners at the time of the discussions. The highest educational level attained in both groups was a high school diploma (Grade 12), with majority of men having completed some secondary schooling. Only two men out of the twenty-five men interviewed were employed.

One additional focus group discussion was held with 12 HIV-positive women, aged between 30-47 years living in Khayelitsha. The women were selected purposively based on criteria of being HIV positive and were either currently accessing PMTCT services or had accessed PMTCT services no more than 2 years prior to this study. Of the 12 participants interviewed, 5 lived with their partners and 7 were employed as community activists for the Treatment Action Campaign (TAC). Three women were pregnant at the time of the discussion, while two women had their babies present during the discussion. Most women had completed some secondary schooling. All men and women in the focus groups were Xhosa-speaking residents of Khayelitsha.

Key Informant interviews were held with five service providers including a nurse, midwife, doctor and two PMTCT counsellors, directly involved in PMTCT work at a clinic in Khayelitsha.

In-depth interviews were also held with four couples. Of the four couples interviewed, three couples were actively involved in a support group and employed as community volunteers, and were hence knowledgeable about HIV, PMTCT, and male involvement.

Ethical approval for this study was obtained from the Research Ethics Committee of University of Cape Town and from the Provincial Department of Health of the Western Cape. Consent was also obtained from participants before the commencement of the study.

All focus group discussions and couple interviews were conducted and recorded in isiXhosa and transcribed into English by an experienced fieldworker. In-depth interviews with service providers were recorded and transcribed in English by the researcher. For the data analysis, common patterns were identified and grouped together to form themes, which were analyzed to generate new ideas

and patterns and conclusions made out of the findings. Emerging findings were reviewed with research supervisors who have extensive experience in HIV and PMTCT research in Khayelitsha as a further form of quality check. Comparison of data collected from men, women and key informants in the focus group discussions and individual and couple interviews was made as a way to improve validity and reliability.

Results

The main findings from the study are presented below and organized into three broad themes: 1) attitudes towards male involvement and PMTCT, 2) enablers, and 3) barriers to male involvement in PMTCT.

1) Attitudes towards male involvement and PMTCT

General attitudes towards male involvement

Most study participants were receptive towards pregnant women accessing PMTCT services like HIV testing, ART treatment, and using milk substitutes. While supportive of pregnant women accessing these services, however, most men perceived their role in PMTCT as consisting of financial and material support.

HIV-positive women becoming pregnant

A majority of men in the focus group discussions were, though, fairly strongly opposed to the general idea of HIV-positive women bearing children. Many men considered it unacceptable for HIV-positive persons to have biological children citing consequences such as placing a burden on social services and the family to care for the baby in the event of the parents' death.

It is upsetting and unacceptable especially if a person knows that she has the virus and still becomes pregnant... **participant 12, older men's focus group.**

A number of men in the older men's group considered it a moral duty for HIV-positive women to give up their right to have biological children. Though many men thought it was a bad idea for HIV-positive women to become pregnant, they did not describe situations where this disapproval translated into neglect or punishment towards pregnant, HIV-positive women in their own lives.

There were some men in the younger men's focus group who supported the idea of HIV-positive women having children on the condition that they sought medical care and followed clinical advice to prevent transmitting the infection to the babies. These men were not only from a younger generation and thus may have had different perspectives on the issue but seemed to also have more information about PMTCT and its effectiveness. They also emphasized the rights of HIV-positive women to bear children regardless of their HIV status.

Men's and women's HIV testing during pregnancy

All men interviewed in this study were in support of pregnant women testing for HIV during antenatal care visits. The primary reason for supporting women's testing was to safeguard the unborn baby from acquiring HIV.

... it is important that she gets checked so that the baby can be helped in time. **Participant 6, younger men's focus group.**

In this study, most men (with an exception of one man) knew what PMTCT was about or had a vague idea of what happened at PMTCT sites. Many of the men interviewed were receptive towards pregnant women accessing these services and mentioned HIV testing, ART treatment, and issuing of formula milk as components of the PMTCT programme.

Although the majority of men in the focus group discussions were in favor of testing for HIV themselves, it is unclear whether they did go to test for HIV during their partner's pregnancy. Such questions were considered too personal and left out in the focus group discussions.

Women and men in the focus groups also expressed difficulties in initiating discussions around HIV testing and contraceptive use with partners. Many feared accusations of infidelity or lack of trust. Decisions on choosing or using a contraceptive method were entirely left to the women (except, of course, for the use of condoms).

However, in the couple interviews, men were asked about their testing practices and three couples (of the four couples interviewed) said they had accompanied their partners for HIV testing. One couple had in fact met at an ARV clinic and both knew their status. It is likely that these men tested

for HIV with partners due to their involvement in community and social movements and in a bid to lead by example.

Men in antenatal care clinics

Most men interviewed in this study acknowledged that it was appropriate for men to accompany their partners to antenatal clinics.

That is the right thing to do, because going there, you are giving support to your partner who will be giving birth to your child and it is also right that when she gives birth you are here next to her... **Participant 9, older men's focus group.**

Almost all male participants in this study supported the idea of men accompanying their partners for antenatal care with an exception of one participant in the young men's focus group that disagreed with this notion due to stigma.

We all don't see it as a good thing to do, because fun is being made by others when they see you with your partner (at the ANC clinic), worse we young people. **Participant 10, younger men's focus group.**

All women interviewed expressed a desire for their partners to be present during antenatal sessions and delivery. Most women in this study had disclosed their status to partners or were single at the time of the discussions and likely to be receptive towards male involvement. There didn't seem to be any feeling in the group of women that it was awkward or inappropriate for men to be involved with the medical care of their pregnant partners.

Though men and women seemed to agree on the general importance of men's involvement in supporting their pregnant partners, their ideas of what support meant were often different. Focus group discussions with both younger and older men of unknown status revealed that men's perception of their role in PMTCT consisted primarily of financial support. This contrasted with what women perceived of men's role in pregnancy and childbirth, which focused more on providing emotional support and attachment with the baby.

Infant feeding

All participants interviewed in this study were in support of and/or highly recommended formula feeding for infants whose mothers were HIV positive. There seemed to be general understanding that this helped to prevent one of the routes of vertical transmission of HIV. Some male participants also argued that since formula is free in all public health facilities, all HIV-positive mothers should refrain from breastfeeding their babies to minimise risks of HIV infection.

Women, on the other hand, felt that they should be able to decide what feeding option was suitable for them based on their own circumstances, especially their occupational requirements. Mothers who were working or studying often chose formula feeding. There was only one instance in this study where a woman chose to exclusively breastfeed her baby for six months as she stayed home with the baby.

Acceptability of interventions and opportunities for engagement

Despite the fact that those men in the focus groups all held generally positive views of PMTCT and partner support, they did convey a sense that the broader community of men was more diverse in their opinion. The findings suggest three kinds of men; men who are or would be actively involved in PMTCT, men who are not involved but could be motivated, and men who are resistant to getting involved in any kind of support for their partners (except perhaps for financial support).

The men who are involved in PMTCT are more likely to have tested for HIV, are knowledgeable about HIV/AIDS, and are generally positive about their involvement in the partner's pregnancy. Men who are not involved and uninterested were more likely to resist intervention messages and/or discussing reproductive health, HIV/AIDS or PMTCT with their partners.

My girlfriend told me that she has STI's, so they are calling you to go check yourself at the clinic. I told her I won't go there and did not care... **participant 7, older men's focus group.**

However, for the men in the middle, they may be less concerned about or aware of PMTCT but may not necessarily resist intervention messages. There is a possibility of them being actively involved if reached out to appropriately.

In this study, men who were married or in a stable relationship and were living together with the partner were more likely to have been involved. Younger men and/or men who had 'grown up' in the urban areas were more open on participation in PMTCT. Men who were in stable relationships but did not live with their partners belonged to the middle group. Older men and/or men with casual partners were more likely not to be involved. These findings may suggest that age and marital status may be correlated with men's decision on whether to participate in PMTCT or not.

2) Enablers to male involvement in PMTCT

This study identified a range of enablers to male participation including: health worker contact, influence from peers within a support group, reaching out to men directly, knowledge and information flow on HIV/PMTCT, trust, and disclosure of HIV status.

HIV testing

Men who had tested for HIV and/or knew their sero status tended to be supportive of their partners throughout pregnancy and childbirth.

I was already aware (of my HIV status) and I had information about HIV/AIDS ... It took time for me to convince her to go for a test, of which she did and she tested HIV positive and was also found to be pregnant ... I knew that it was my chance to play my role as a man, to stand in my shoes, to show my love and support, so now she must not be afraid of anything... **male participant, tested before wife knew status, activist, Couple 1**

In this study, men who knew their status often accompanied their partners to antenatal care, encouraged their partners to test for HIV, and supported their partners in choosing an infant feeding option most suitable to their circumstances.

I told him it's better if we do formula feeding and also breastfeeding would mean I would not have time for my classes. ... so he said that if its okay with you, then its okay with me. **Discordant couple, female participant, actively involved in a teenage support group, Couple 3**

The causal link between HIV testing and male involvement in this study was unclear. It was uncertain whether HIV testing stimulated men's interest and involvement in antenatal care or whether men

who were already predisposed to being involved in their partner's pregnancy were also more likely to have gone for testing. It is likely that men who had already been tested for HIV might naturally be more predisposed to supporting their partners through PMTCT. Even in these cases, though, testing during their partner's pregnancy may have triggered a greater degree of involvement than would have been expected.

Health workers are supposed to encourage pregnant women accessing PMTCT services to invite their partners to antenatal clinics to test for HIV and/or facilitate disclosure (although this does not necessarily happen frequently).

When a man comes we offer him all the support, we give education about HIV/AIDS, explain about the mother, the type of pills she will be receiving and feeding the baby and answer any questions... **Service provider, key informant interviews.**

Men accessing HIV testing at antenatal clinics may have led to more engagement with health workers and this engagement may have also encouraged them to get more involved. One man in the couple interviews claimed that the appreciation he received from nurses and explanations on how to support his wife while accessing couple testing had influenced his decision to be actively involved.

Role of support groups

This study also found that influence from peers within a support group contributed to men's decision to be actively involved during the partner's pregnancy through to childbirth. This may be due to knowledge and 'de-stigmatising' of the issue of men going to antenatal clinics and/or improved communication between partners.

My friend told me to invite my partner to the support group and after the teenage (support) group, I went for a booking date, since then he has been caring for me during pregnancy and after pregnancy, he still cares for me and the baby. **Discordant couple, female participant, actively involved in a teenage support group, Couple 3**

Findings from this study indicate that men who regularly attended some sort of support group gradually adopted the notion of accompanying their partners to clinics. Interactions with other men

actively involved in antenatal care may have influenced their decision to become involved. Peers within a support group often encouraged and motivated each other to support their partners during pregnancy and caring for the baby.

Support groups also helped HIV-positive women cope with discrimination as they provided emotional support to each other. Women had stronger ties with members of the support group compared to family members. This study also found that support groups helped couples overcome stigma by alerting them of some of the possible challenges they were likely to face when accessing PMTCT services as couples.

Accommodative and flexible services

This study also found out that men were more willing to accompany their partners to distant clinics away from the communities in which they were known for fear of a breach in confidentiality from service providers.

...nurses that live closer in the area, she is the one that offered you help. There she goes and have tea with the neighbour about you, for example, you went for a test then the results came out the other way then she will go and tell the neighbour you are infected...but at least if it is far, even if she tells, I'm not known there... **participant 10, younger men's focus group.**

This finding may suggest that a perceived level of trust in service providers may influence some men in seeking health services in distant clinics.

Health worker contact

Discussions with men also found that men were more likely to participate in PMTCT if they received information from health workers compared to receiving information from their partners. Information from service providers was considered more trustworthy and easily understood compared to what their partners told them.

...it is very easy when something comes with the father or man especially if he understands it then brings it into the house ... when this information [PMTCT] are said by women, its very

hard for a man to understand it because they don't give you detailed information about these things, they just force you in doing it... **participant 12, older men's focus group.**

This may suggest that men are more likely to be more engaged if they feel they are being consulted and involved in the information flow and decision-making. This finding suggests that reaching out to men directly may increase male involvement in PMTCT compared to reaching out to men only through women accessing antenatal care. Service providers helped promote men's multiple possible roles in PMTCT using channels such as couple testing and/or invitation letters to men to come to the clinic and learn about how their roles in pregnancy and childbirth might extend beyond finances to consist of psycho-social support in ART adherence, feeding options, and condom use.

Prevention messages

An unexpected finding from this study highlighted the impact of prevention messages in the media that stigmatise and do not include men while relaying PMTCT information. Findings from this study may suggest that using women as 'flag bearers' of PMTCT information in the media may have an unintended consequence of discouraging men from being involved.

If posters could stop putting women only and start putting men who will say I am a man, I am HIV positive and I support PMTCT. That is where I think the men will be strong because they have seen from this guy that have disclosed his status and even those who were afraid maybe, they will come forward and talk about it. **Participant 9, women's focus group.**

This finding may suggest that using men in the media will reinforce the idea that men have a role to play in PMTCT and encourage more men to come to clinics to access services and support their partners.

3) Barriers to male involvement in PMTCT

This study identified a number of barriers to male involvement including; stigma, negative attitudes from nurses, inadequate space, and staff shortages. Men in this study also cited fear of breach of confidentiality, long waiting times, and being uncomfortable attending clinics where a majority of patients were women as reasons for not utilising PMTCT services.

Men's reluctance to engage in the clinic space

Findings from this study confirmed that men were reluctant to go to clinics that were considered to be 'women's spaces'. A number of men interviewed reported feeling uncomfortable attending a clinic with a majority of patients being women.

...when sitting down on the chairs, you see women all around you and you end up shaking because you are asking yourself, are you sure of what you are doing here and you start to have second thoughts and the things they talk about are away from what men talk about.

Male participant, partner pregnant, couple 2.

Almost all men interviewed in the couple interviews confirmed that it was difficult attending antenatal clinics for the first time, though with frequent visits, they became used to being around women. Gender stereotypes still exist concerning men going to clinics 'reserved' for women discouraging some couples from attending antenatal care together. These stereotypes are powerful and sometimes had unintended consequences for those seen to be breaking them. Both men and women were, for example, called names or accused of witchcraft while attending antenatal sessions with partners.

What made me feel the pain was when people thought that I have bewitched this man, why he is here (ANC clinic). **Female participant, partner accompanied her for all ANC visits.**

Couple 3

A majority of women interviewed in this study reported discrimination during delivery and while using replacement feeding for the baby. The Department of Health dispenses one brand of formula milk to HIV-positive women in all public clinics in South Africa, known as Pelagon. This brand has come to be strongly associated with being HIV positive. Some women opted to 're-label' the formula milk received from clinics by using other milk tins other than Pelagon to avoid being labeled as HIV positive.

Almost all participants in the younger men's focus group suggested stigma as a reason for not attending clinics where they lived. Stigma from both peers and health workers discouraged many men from going to test for HIV or attending antenatal clinics with partners, with the exception of one participant who saw the advantage of being helped outweighing the problem of his status being revealed. Some men opted instead to go to distant clinics where they were not known with partners.

In this study, a significant number of men experienced negative attitudes from nurses and/or were denied the opportunity to attend antenatal sessions with their partner.

Some nurses had attitude towards me saying, you can see that it's a clinic for women only and why can't you wait outside for your partner. **Male participant, couple 4.**

In-depth interviews with service providers confirmed that clinics did not have the capacity to accommodate all male partners of pregnant women accessing antenatal care due to inadequate space. Staff shortages were also an issue since involving men required more consulting time. Men were encouraged to come in only during labour or when a partner has had multiple births. Some men in the focus group discussions highlighted long waiting times at the clinic as a deterrent to them accessing services as well.

Non-disclosure

In this study, non-disclosure of HIV-positive status by women was a barrier to male involvement. Discussions with service providers and women revealed that disclosure often served as an entry point to partner involvement during pregnancy.

...it all depends on that person. Does she want to disclose, does she want to be known that she is HIV positive. So you get that problem that they don't disclose ... then it's gonna be a problem to say to the man to come (to the clinic). **Service provider, key informant interviews.**

However, some women in the focus group discussion had problems disclosing their HIV sero-positive status to partners citing fear of abandonment, rejection, and violence as reasons for non-disclosure.

The minute you tell them, they pretend to have accepted it, then telling themselves inside that "I will beat you up and ask you where you got this virus whereby I don't have it". How will he know if he did not go and get tested. ... then he will go to work and never return ... **Participant 10, women's focus group.**

Perceived fear of being blamed for the disease also prevented several women from disclosing their status to partners. Some women gave excuses when asked about the medication (Nevirapine) they were taking during pregnancy, explaining it was 'for the baby's growth'. Mixed feeding was reported to be common in women that had not disclosed their status.

Discussion

In general, both men and women interviewed in this study were receptive towards male involvement in PMTCT. Men in this study were generally supportive of HIV testing as part of PMTCT. However, many were reluctant to test for HIV themselves and did not see the importance of their testing during the partner's pregnancy. They perceived their role to be more of financial and material support.

Findings from this study suggest that disclosure of status by women, HIV testing, and health worker contact enhances increased male participation in maternal and child health. This finding is similar to a qualitative study conducted in Vietnam that confirmed that men who had tested for HIV and/or disclosed status were more supportive of partners throughout pregnancy and childbirth (22). Men's participation could also be shaped by the role of health workers who provide information on HIV/PMTCT and describe men's roles in family care in ways that extend beyond meeting material needs to supporting the pregnant partner in monitoring ART compliance, infant feeding compliance, and emotional support.

In South Africa, antenatal clinics are primarily designed for pregnant women and provisions to accommodate men within the antenatal care setting are still inadequate (18). Current PMTCT guidelines (2010) make mention for the accommodation of partners in ANC (23). However, it remains unclear as to how effectively this is being implemented. This study found barriers to male involvement to include; stigma, negative attitudes from nurses, inadequate space and staff shortages. Although the majority of men of unknown status were reluctant to engage in the clinic space, it is interesting to note that overall men in this study were knowledgeable about PMTCT and their potential roles they could play in the programme. A discrepancy exists in this study, however, between what men know and consider as their roles in PMTCT and what their actions concerning their involvement depict. Men's roles in PMTCT need to be clearly defined and programs expanded to reach out to men in all spheres of life to embrace these new roles in family care.

There were some broader themes that also emerged from this study that point to some of the broader social factors behind the barriers to male involvement in PMTCT. These include: mixed responses to the expansion of men's caring roles, men's inability to provide for their families economically, and weak forms of social relationship and support among men.

Responses to the expansion of men's caring roles

Social relationships of care and decision-making are changing and men are finding themselves in situations where they are being asked to do more in the family than before (24). The demands on men to be actively involved in family care are increasing in light of urbanization, gender equality movements, and the HIV/AIDS epidemic in South Africa (19). Men's roles in Africa are increasingly extending beyond the traditional roles of being the 'bread winner' in the family to attending antenatal care visits, making birth plans, caring for babies and monitoring ART and infant feeding options for the mother and the baby (14,25,26).

In this study, older men of unknown status resisted these new care-giving roles more strongly than younger men claiming it would make them lose respect from their partners. Some older men perceived activities such as caring for the infant and/or going to clinics as a woman's domain and taking up these roles would weaken their position as the head of the family. However, younger men 'sympathized' with HIV-positive women and expressed an interest in offering a helping hand with household chores. It was unclear whether negative attitudes towards HIV-positive women having children affected men's willingness to get involved in PMTCT in this study. Many of the younger men associated these new care-giving roles with adopting 'new' ways of life in the urban settings.

Men's inability to provide economically

Another pressure men faced in terms of their forms of involvement in their relationships was the difficulty many of them had in 'providing' for their families. Social expectations and roles placed on men to provide for their families are perceived as stressful by men and they often cringed at the burden on their shoulders.

Economic and cultural factors hinder many men in their efforts to meet these expectations. Findings from this study suggest poverty, unemployment, gender stereotypes, and discrimination often deter many willing men from fulfilling these expectations. This finding is synonymous with research

findings from a study conducted among HIV-positive men in Cape Town (27). Men's inability to provide emotional and physical support to partners may be interpreted differently and/or labeled generally as their inability to do what they should be doing or as a sign of lack of interest in family care. This study found that men perceived their role in family care as consisting of primarily financial support contrasting with what women perceived of men's role which was aligned to providing both emotional support and material support.

Weak forms of social relationship and support

Weak forms of social relationship and support among men also make it hard for men to have avenues in which they express themselves more openly concerning HIV and other health issues. This also hinders some men who would otherwise have sought health care and/or accompanied their partners to clinics for ANC visits from doing so. This study found, for example, that men who did not belong to a support group were less likely to accompany their partners to antenatal clinics.

In this study, HIV-positive women also had weak social ties with family members but stronger social ties with members of the support group they belonged to. This finding is similar to a study conducted among HIV-positive mothers in Soweto, South Africa (28). The support groups women attend such as those run by the NGO mother2mothers, create a bond among the pregnant women accessing PMTCT. The support groups are like family and often they refer to each other as 'comrades' providing support to members.

Strengths and limitations of this study

This study provides an understanding on the barriers and enablers to male participation in PMTCT in South Africa. The study explored the perceptions of men, women and key informants on male involvement in ANC and PMTCT services that provided an opportunity to compare different views and opinions from participants. The views and opinions expressed in this study may not be generalised nationally, although useful insights can be drawn from it to improve existing PMTCT interventions.

This study used a Xhosa-speaking facilitator enabling participants to express themselves candidly though translating the interviews into English may have affected the originality of the field data collected and limited the researcher's ability to probe.

The selection of couples in this study was particularly skewed towards those who were already activists, potentially creating a bias to the researcher's understanding of the concept of male involvement though this provided an opportunity to understand what made it possible for these couples to be actively involved during ANC .

This study in its original design did not draw deeply from the growing literature on masculinity and HIV in South Africa (29,30), although this literature was used in interpreting some of the findings and developing the discussion sections of the study. This study would have been stronger if it had explored local constructions of masculinity in more detail from the beginning.

Conclusion

Designing interventions to attract more men in antenatal care is a crucial step in scaling up of PMTCT services and may increase uptake of PMTCT interventions and reduce loss to follow up of pregnant mothers accessing services in health facilities (31) . Findings from this study suggest that HIV testing, disclosure, and direct health worker engagement with men increases male involvement in PMTCT.

PMTCT programmes need to strengthen existing avenues of facilitating disclosure by women such as improving partner communication and couples VCT. Service providers need to encourage women to disclose their status and/or invite their partners to clinics to facilitate disclosure.

There is a need to promote the benefits of HIV testing and/or couple testing in antenatal settings so as to increase avenues for disclosure and provide opportunities for men to acquire knowledge on HIV and their roles in PMTCT. In addition, engaging men through support groups might help address issues of stigma and gendered perceptions about their responsibilities during pregnancy.

Equally important is the need for sensitization workshops for health workers involved in PMTCT service provision on the benefits of involving male partners in antenatal services in order to change negative attitudes. Health workers need to be encouraged to engage more directly with men as opposed to only reaching out to men through women accessing PMTCT services.

Lastly, promote the benefits of male participation in the media using couples as flag bearers of PMTCT information to promote family-centred care. Using men in the media and community to reach out to fellow men with prevention messages tailored to suit specific audiences may reduce perceptions of antenatal care as being a woman's domain.

While we did not establish the causal relationship between previous testing and increased partner support for PMTCT, another study found an association (32). Hence there is need to encourage regular, population-based testing campaigns to motivate couples to test prior to pregnancy.

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Part D: Appendices

University of Cape Town

APPENDIX 1: QUESTIONNAIRE/DATA CAPTURE INSTRUMENT(S)

Information leaflet

Do you live in Khayelitsha?

Are you in the age group 18-40 years?

Would you want to do something unique that will benefit every body?

You are being invited to participate in a study about male involvement in antenatal care, conducted by researchers from University of Cape Town.

This study aims to improve uptake of antenatal services by pregnant women in Khayelitsha to reduce the transmission of HIV from mothers to babies.

The study will involve group and couple interviews lasting between 45 minutes and an hour.

It does not require any medical procedures and your participation will be anonymous.

For more information and or questions, please call Alice Ladur, 0761148136.

Interview guide

Men

Knowledge/understanding on PMTCT

What men thought women`s expectations of their roles in maternal and child health were

Child bearing in HIV positive women

Gender roles and norms – access to information, care-giving roles

Men`s perceptions of their role in HIV prevention in infants

Infant feeding in HIV positive women

HIV testing – communication/initiation

Challenges in attending ANC

Women

Challenges in partner involvement in ANC

Men`s role in pregnancy and child birth– ANC and Post natal care

Decision making and choices on infant feeding

What aspects of support did they want from their partner

Gender norms around access to PMTCT

Experiences with health care workers

Health care workers

Benefits of male involvement in PMTCT

Challenges of involving men in ANC

HCW role in enhancing male involvement

Men`s role in PMTCT.

HIV testing and disclosure

University of Cape Town

APPENDIX 2: CONSENT FORM AND PARTICIPANT INFORMATION FORM

University of Cape Town

CONSENT TO PARTICIPATE IN RESEARCH

Factors influencing male involvement in Prevention of Mother to child Transmission services in Khayelitsha, Cape Town, South Africa.

1. Purpose of the study

This study aims to explore male perspectives and to understand factors influencing male participation in PMTCT services in Khayelitsha.

3 Procedures

If you volunteer to participate in this study, we would ask you to do the following things:

You would respond to a series of questions regarding your knowledge and experiences about PMTCT programmes. These questions may come in the form of an interview or a focus group.

If you feel uncomfortable about discussing these experiences, feel free not to participate or to decline to answer any specific questions. Your answers may be recorded on audio tape with your prior permission. Formal interviews will last about 45 minutes and focus groups will last about an hour and a half. Please tell the researcher if you have any time constraints or if you need to leave at any time.

4 Potential risks and discomfort

Speaking about your experiences regarding male participation in antenatal care may be uncomfortable if it is against your values. You may experience some emotional distress arising from talking about HIV and intimate relationships with other participants. If at any time you feel you do not want to answer a particular question, or cannot participate in this study any more, please don't hesitate to make it known to the researcher. You are free to decline to answer any question or to drop out of the study without any penalties.

5 Potential benefits to individual and or society

There are no direct benefits to the subject for participating in this study. However, information from this study will give insights into the social issues that influence men's participation in antenatal care and maternal health.

Payment for participation.

Participants will receive no payment for participating in this study. However refreshments will be served after each interview or group session and a transport refund where necessary.

6 Confidentiality

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of the use of pseudonyms and the removal of identifying information from records. Confidentiality will be ensured by making the collected data available only to the main researcher, research assistants and informants themselves. The recorded (audio) interviews will be made available only to the interviewer, the main researcher and the subject of the interview.

If you participate in a focus group, you may discuss issues raised during the session with people outside of the group, but we request that you maintain the confidentiality of what was discussed in the focus group and the anonymity of the participants.

7 Identification of investigators

If you have any questions or concerns about the research, please feel free to contact

Alice.Ladur

Tel. 076 11 48 136

Email: alice.ladur@uct.ac.za

8 Rights of research subjects

If you have questions regarding your rights as a research subject, contact the Research Office at the Faculty of Health Sciences at the University of Cape Town at 021 650 4015.

Signature of research subject

APPENDIX 3: LETTER OF APPROVAL FROM RESEARCH ETHICS COMMITTEE



UNIVERSITY OF CAPE TOWN

Health Sciences Faculty
Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6626 • Facsimile [021] 406 6411
e-mail: shuretta.thomas@uct.ac.za

08 April 2010

REC REF: 142/2010

Ms A Ladur
c/o Dr C Colvin
Public Health & Family Medicine

Dear Ms Ladur

PROJECT TITLE: FACTORS INFLUENCING MALE INVOLVEMENT IN PREVENTION OF MOTHER TO CHILD TRANSMISSION SERVICES IN KHAYELITSHA, CAPE TOWN, SOUTH AFRICA.

Thank you for submitting your study to the Research Ethics Committee.

It is a pleasure to inform you that the Ethics Committee has **formally approved** the above-mentioned study.

Approval is granted for one year till the 16th April 2011.

Minor Points:

1. We do not believe that it would be appropriate to enrol a participant who would need a legal representative's signature so recommend that this option be removed from the Consent form.
2. Minor typo in Point 5 of the Consent Form: benefit to society and/or to society.

Please submit an annual progress report if the research continues beyond the expiry date. Please submit a brief summary of findings if you complete the study within the approval period so that we can close our file.

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

S Thomas

APPENDIX 4: INSTRUCTIONS FOR AUTHOR OF JOURNAL

AIDS and Behavior

Manuscript Submission

Seth C. Kalichman, Ph.D.
Center for HIV Prevention & Intervention
2006 Hillside Road, Unit 1248
University of Connecticut
Storrs, CT 06269
Email: aidsandbehavior@yahoo.com

Submission is a representation that the manuscript has not been published previously and is not currently under consideration for publication elsewhere.

A statement transferring copyright from the authors (or their employers, if they hold the copyright) to Springer will be required before the manuscript can be accepted for publication.

The Editor will supply the necessary forms for this transfer. Such a written transfer of copyright, which previously was assumed to be implicit in the act of submitting a manuscript, is necessary under the U.S. Copyright Law in order for the publisher to carry through the dissemination of research results and reviews as widely and effectively as possible.

AIDS and Behavior now offers the opportunity to publish abstracts for articles in English and Spanish. Although not required, I am hoping that you will take advantage of this chance to broaden access of your work.

If you would like to include your Abstract in Spanish, please be sure that your Abstract is in the proper format and finalized. Be sure to remove all subheadings from the Abstract so that it reads as a continuous narrative of no more than 150 words in English. Then translate your final Abstract into Spanish. Upload the English version in the Editorial Manager System step for Abstracts and include both the English and Spanish versions in your Manuscript file that you upload into the system. The two abstracts should be placed together, first the English followed by the Spanish on a separate pages. Label the Spanish version "Resumen".

Manuscripts should be submitted to the Editor through Springer's Editorial Manager peer review system at: <http://aibe.edmgr.com>

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., cameraready.

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 CMYK 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.

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