

Male Participation in PMTCT:

*Survey on the experiences, attitudes and perceptions of male partner's participation in antenatal and PMTCT services
Mashonaland East Province, Zimbabwe*

OPHID OR Series 2015: Report 1



September 2015



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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Therapy
ARV	Antiretroviral
DHS	Demographic and Health Survey
EID	Early Infant Diagnosis (of HIV)
FGD	Focus Group Discussion
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counselling
MOHCC	Ministry of Health and Child Care
MTCT	Mother to Child Transmission (of HIV)
OPHID	Organisation for Public Health Interventions and Development
PMTCT	Prevention of Mother to Child Transmission (of HIV)
PNC	Postnatal Care
VHW	Village Health Worker

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Foreword

Zimbabwe has made major progress in the fight against HIV but the prevalence and public health burden of the epidemic remains high. An estimated 15% of adults and 15.9% of women attending antenatal care (ANC) in Zimbabwe are HIV positive. Mother to child transmission of HIV (MTCT) is the second main mode of transmission after heterosexual transmission and more than 90% of these new HIV infections among children occur during pregnancy, at birth or through breastfeeding. Recent national estimates show that the MTCT rate has reduced from 18% in 2011 to 9.61% in 2013.

Zimbabwe is committed to the Global Plan for the elimination of paediatric HIV and keeping mothers alive (eMTCT 2011-2015). In stepping up efforts to eMTCT, Zimbabwe transitioned to a test and treat for life approach "Option B+" at all health facilities by the end of 2014. While great gains have been made, with 2 822 infants tested HIV positive using DNA PCR in 2013, it is acknowledged that effective implementation of the eMTCT agenda requires interventions beyond biomedical approaches.

Male participation in the context of ANC and prevention of mother to child transmission of HIV (PMTCT) interventions, has been shown to positively influence the acceptability of HIV testing and counselling (HTC) among pregnant women, adoption of behaviours that reduce sexual transmission of HIV during pregnancy and support of HIV positive women to adhere to antiretroviral therapy (ART) and recommended infant feeding options for PMTCT. However, the proportion of male partners involved in ANC and PMTCT services is low, and is a major obstacle to a national response to achieving eMTCT in Zimbabwe.

Increasing male partner participation in ANC and PMTCT services requires innovation and evidence-based strategies to overcome barriers to participation towards the eMTCT agenda. The data presented in this report share invaluable experiences, attitudes and perceptions of male partners of women attending ANC in one province of Zimbabwe. Findings provide insights into feasible and acceptable strategies to successfully engage men for increased participation to improve the uptake and effectiveness of PMTCT interventions in a final push towards elimination of new paediatric HIV infections in Zimbabwe.



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Executive Summary

Background

Sub-Saharan Africa experiences one of the worst HIV/AIDS epidemics in the world and is home to approximately 69% of the global population of people living with HIV.¹ It is estimated that 199 000 children of the 21 Global Plan priority countries in sub-Saharan Africa became infected with HIV in 2013.² There is an urgent need to reinforce the efforts towards the elimination of new HIV infections among children by 2015 and keeping mothers, children and their families alive.^{3, 4}

Prevention of mother to child transmission (PMTCT) of HIV interventions include maternal antenatal HIV testing, the uptake of antiretroviral therapy for pregnant women who test positive and their HIV-exposed infants post-delivery and adopting safe infant-feeding methods. These PMTCT interventions have been integrated within maternal and child health services specifically reproductive health and antenatal care (ANC), which traditionally focused on women.^{5, 6}

Zimbabwe adopted the United Nations (UN) four pronged approach to PMTCT as the cornerstone of the country's strategy to eliminate new HIV infections among children.^{7, 8} However, the number of new HIV infections remains relatively high, estimated at 9 000 in 2013⁹ highlighting the need to effectively implement PMTCT interventions towards virtual elimination of vertical transmission of HIV.

Male partners greatly influence the uptake of and adherence to PMTCT interventions by pregnant and lactating women in patriarchal societies such as Zimbabwe and other sub-Saharan countries.¹⁰⁻¹² Since some women who test HIV negative during ANC seroconvert during pregnancy or after delivery, male partners exert a strong influence on the reduction of both the sexual and vertical transmission of HIV.¹³⁻¹⁵ In addition, male partners form an integral part of family planning decisions, which are important in the prevention of repeated pregnancies among HIV-infected women.^{16, 17}

Many studies have demonstrated the association between the increase in women's uptake of and adherence to PMTCT interventions and male partner participation.¹⁸⁻²⁰ Zimbabwe recorded an increase in the proportion of pregnant women who tested for HIV in ANC together with their male partners from 8% in 2010 to 17% in 2013.^{3, 21} However, concern has been raised over the low proportions of men who present themselves with their pregnant partners as they attend ANC, and this has been identified as a barrier to the global and national responses to the HIV epidemic.^{4, 18, 22}

Although there is considerable research on the facilitators and barriers to male involvement in PMTCT programs, limited evidence exists exploring the health system needs, attitudes and perceptions of men. A common barrier that emerged from studies was that the ANC environment is "unfriendly" to male partners, but there is a lack of evidence on which components of the health system render the environment "unfriendly".^{3, 16, 23, 24}

Study Objectives

The principal objective of the study was to examine the health system experiences, attitudes and perceptions of male partner's participation in ANC and PMTCT programs to inform strategies for increasing male participation in ANC and PMTCT services in Zimbabwe.

The specific objectives of the research were as follows:

- To assess knowledge, awareness and perceptions of maternal health and the PMTCT program among men.
- To assess the extent of male partner participation in ANC and PMTCT program at the ANC facilities.
- To examine the determinants of male partner participation in PMTCT program at the ANC facilities.
- To identify the health system factors that facilitate and constrain male partner participation in PMTCT services offered at ANC facilities.
- To make recommendations for health systems strategies that could help improve male partner participation in PMTCT interventions through "male friendly" ANC settings.

Methods

The study employed the mixed method i.e. qualitative and quantitative approach was used to examine the overlapping and different components of the phenomenon under investigation.²⁵ The rationale for mixing is that neither qualitative nor quantitative methods by themselves sufficiently capture the details of the phenomenon of such a complex issue as male participation in ANC and PMTCT programs. The analytical survey was conducted from December 2013 to March 2014 at 12 health facilities that were randomly selected from 120 health facilities offering ANC and PMTCT services in five out of the nine districts in Mashonaland East province in Zimbabwe.

The quantitative part comprised of a total of 309 male partners of pregnant or lactating women who had received ANC at health facilities offering PMTCT services in Mashonaland East province. Exit interviews were conducted with 155 men attending ANC with their pregnant partners. Given that the data from male partners who attend ANC and PMTCT services with their spouses could be different from that of non-attenders, a control group of men who had not attended ANC with their partners during the study period were traced and interviewed at community level (n=154).

To provide depth to the questionnaire data, six focus group discussions (FGDs) were conducted at community level with 59 men, residents of the catchment areas of health facilities that were participating in the study and married/partner to a woman who was currently pregnant, or has been pregnant in the last two years.

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The descriptive analysis from both the quantitative and qualitative data was combined in one report, to provide comprehensive interpretation of the research findings.

Results

Men's knowledge and awareness of PMTCT and Pediatric HIV program

The majority of the participants were aware of the PMTCT program as 92% (n=282) reported that they have heard about the program. However, knowledge levels about specific prevention methods were relatively lower and ranged between 61-69%. In addition, twenty eight per cent (28%, n=87) of the men have what can be considered as good knowledge (PMTCT methods including: uptake of ARVs/ARV prophylaxis by the mother, uptake of Nevirapine at the onset of labour, use of condoms consistently during pregnancy and breastfeeding and exclusive breastfeeding in the first six months and mixed feeding thereafter with the infant on ARV prophylaxis until cessation of breast feeding) of preventing MTCT of HIV. Knowledge of pediatric HIV services was poor as none of the focus group discussants could correctly identify the recommended age for HIV testing among infants and the treatment and care services available for infants.

Men's perceptions and attitudes towards the PMTCT program

There was universal acceptance of the PMTCT program among the men as 99% of the participants perceived that the program was important for the family's good health. Positive attitudes towards ANC and PMTCT were echoed in all the focus groups studied with men reporting that it was protecting children from HIV and communities were experiencing less morbidity and mortality due to HIV.

The data revealed that male attendance in ANC was associated with positive family health attitudes. These include: willingness to practice safe sex as a method of preventing incident HIV infection (89% vs 59%, Chi square $p=0.044$), disclosure of HIV status to partner (95% vs 74%, $p=0.003$), willingness to support wife's uptake of ARVs (80% vs 70%, Chi square $p=0.003$) and support ARV prophylaxis for the infant (78% vs 67%, Chi square $p=0.041$).

Level of male partner participation in PMTCT program

Excluding the exit interviews, less than one third (30%; n=46) reported ever attending ANC with their partner during the current or last pregnancy. In addition, the program data for the sites that participated in the study, January to March 2014 show that 25% of the women who received HTC in ANC presented with their male partners. Male partner antenatal attendance was associated with acceptance of couple HIV testing and counseling (HTC), which was 85% for attendees compared to 34% among those who had never attended ANC at $p<0.05$. Among the participants ever tested for HIV and had not attended any

ANC visit, other sources for HTC for participants included: the New Start Centre 45% (n=38), other clinics or hospitals (excluding ANC) 45% (n=38), stand-alone HTC centres 8% (n=7) and family planning clinic 2% (n=2).

Determinants of male partner antenatal attendance

Findings from logistic regression to identify the socio-demographic characteristics associated with male partner antenatal attendance showed that living within 5 kilometers of the health facility was a significant predictor for male partner attending ANC services (Odds Ratio [OR]=2.39, 95% Confidence Interval [CI], 1.34–4.27). Having two or more children [OR=0.50, (0.28-0.89)] was significantly associated with lower levels of male partner antenatal attendance.

Health system barriers to male participation in PMTCT program

In the context of low levels of male partner attendance at the ANC facilities where PMTCT services are offered, the participants were asked a series of questions regarding health systems factors that deter male antenatal attendance. The composition of health care providers generally female dominated was reported by most study participants, 67% as a hindrance to antenatal attendance. More than half of the participants, 55% reported that the long waiting times discouraged men from accompanying their partners to ANC. Service availability was also a cause for concern for men to participate in the ANC and PMTCT program because nearly half of the participants, 41% reported that the days of service were not suitable for men while a slightly smaller proportion, 37% were not comfortable with the operating times for services.

Among male partners interviewed at community level and had not attended any ANC visit n=108, working during ANC service days and hours ranked highest among the identified barriers reported by 81% (n=87) these participants. Other reasons included: the lack of knowledge on the importance of attending ANC and PMTCT services with pregnant partner 57% (n=62), fear of HIV testing together with wife/partner 20% (n=22) and distrust in the confidentiality of HIV test results 15% (n=17). The reported health system barriers were consistent with those raised during the FDGs including poor attitudes of some healthcare providers and long waiting times.

Suggestions to improve male participation in maternal health and PMTCT services in a “Male friendly” setting

Improving and strengthening the male participation in PMTCT services offered in ANC settings requires a “Male Friendly” approach and the following are suggestion from the study participants gathered through the open ended questions of the quantitative interviews and FDGs.

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Health facility based suggestions to improve male participation included:

- availability of services during non-working hours including weekends was suggested as critical to men's participation in PMTCT in the context of patriarchal societies where men are bread winners
- availability of male health service providers for engaging and offering psychosocial support to men and their partners
- availability of trained, competent and welcoming staff who are able to timely serve couples
- Ensuring privacy and confidentiality was said to be important to improve the confidence and friendliness of the health services in the context of HTC that is offered within the PMTCT program.

Community based suggestions to improve male participation

- The participants suggested that the program should engage the communities to improve knowledge and understanding of the importance of men's active participation in maternal health and PMTCT programs for the good health of their families. Suggestions on community approaches included: Improving the presence of health care providers in the community conducting health education in communities was said to be important for improving male participation in the PMTCT program.
- The participants highlighted the importance of information dissemination into the community through posters and pamphlets, which could be placed in public places such as bars, churches or shops to enable men to access program information at their convenience and share with their peers. The participants also encouraged program implementers to consider other modes of communication to educate the community about the PMTCT program including the use of mobile phone messaging to reach out to the communities.

Recommendations

Based on the findings of this study, the following key recommendations are made:

I. Policy Level

At policy level, there is need to clear guidance and national standards to assist service providers improve and strengthen male participation to contribute to the four PMTCT prongs towards elimination of new HIV infections in children.

II. Health systems and program level action

- **Existing health facilities where ANC and PMTCT services are offered should be more “male friendly” through interventions that create a family oriented and inclusive environment to improve men’s participation.** Such interventions should include extending hours of operation to improve service availability, improved the gender composition of healthcare providers so that the service delivery is not continuously perceived as a female domain. Additionally, the trainings and/or refresher courses for health service providers should include communication and client care skills for improved quality of care, attitudes towards clients and confidentiality.
- **Active invitation to involve men in PMTCT services.** This could include MOHCC standardizing the invitation letters for men to attend ANC.
- **Consideration of the health and other needs of men so that there are personal benefits to their involvement.** Creating or expanding the services offered during ANC and PMTCT service delivery that specifically address men’s sexual and reproductive health needs can create an inclusive environment and responsive to men’s need.
- **Effective outreach services need to be developed to improve men’s participation in maternal health and PMTCT services.** Efforts to bring the couple HTC services closer to the people may improve men’s participation in PMTCT program by mitigating the distance and costs associated with accessing these services with their partners at distant health facilities.
- **Training and supporting village health workers (VHWs)** to strengthen the capacity and confidence among VHWs to mobilise men within their communities based on accurate and up to date information for HIV prevention, treatment and care.

III. Community level action

- **Community awareness campaigns and mobilisation for increasing men’s participation in ANC and PMTCT services.** The men strongly recommended improved visibility of healthcare providers and VHWs in their communities to provide this health information through different community/ward meetings were more men can be reached.
- **Promote changes in community norms on men’s participation in ANC.** Enlisting community leaders and elders as well as opinion leaders who define and reinforce certain codes of conduct within their communities to facilitate in creating a supportive environment and influence changes in practises among men through culturally and socially acceptable approaches.

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- **Engaging men who have been to ANC with their partners to participate in community sensitisations and dialogues.** Building on their positive experiences and shared responsibility behaviour they can communicate and convince fellow men to participate in maternal health and PMTCT issues through peer to peer support.
- **Increase the availability of IEC materials in communities.** Improving the availability of reading IEC materials such as pamphlets and posters in communities will allow men to have alternative sources of information outside the health facilities for informed decision making for better family health outcomes.

1 Background

1.1 Elimination of new HIV infections among children

Sub-Saharan Africa has the highest burden of vertical transmission of HIV from mother-to-child host to 21 of the 22 Global Plan Priority countries where 90% of the pregnant women living with HIV reside.²⁶ It is estimated that the 21 priority countries had 199 000 children newly infected with HIV in 2013.²⁶ More than 90% of new HIV infections among children occur through mother to child transmission (MTCT) during pregnancy, at birth or through breastfeeding. Despite not reaching the Global Plan to eliminate new HIV infections in children by 2015, the region has made important progress, with an estimated 43% decline in number of new HIV infections among children from 2009 to 2013.²⁶

1.2 Zimbabwe PMTCT Context

An estimated 15.9% of women attending ANC in Zimbabwe are HIV positive.²⁷ Zimbabwe adopted the United Nations (UN) four pronged approach to the prevention of mother to child transmission (PMTCT) of HIV as the cornerstone of the country's strategy to eliminate new HIV infections among children (Box 1).^{7, 8}

Box 1.0 - The UN four pronged approach for PMTCT:

Prong 1: primary prevention of HIV infection among women of childbearing age;

Prong 2: preventing unintended pregnancies among women living with HIV;

Prong 3: preventing HIV transmission from a woman living with HIV to her infant; and

Prong 4: treatment, care, and support to women living with HIV, their children, and families.²⁶

Since inception of the PMTCT program in 1999 the country has scaled up to provide comprehensive PMTCT services including HIV testing and treatment to all 1 560 healthcare facilities.²⁸ It is estimated that 82% of HIV positive pregnant women received ARVs for PMTCT and 76% of the HIV exposed infants received ARV prophylaxis in 2013.²¹ However, the estimated number of new HIV infections remains relatively high given the near universal access to PMTCT prophylaxis and infant feeding guidelines for PMTCT, with an estimated 9 000 in 2013.^{4, 9} There is need to effectively implement PMTCT interventions and accelerate the progress towards virtual elimination of vertical transmission of HIV from mother to child.

1.3 Role of male partners in PMTCT

There are numerous ways in which men influence women's reproductive health and the health of children. In patriarchal societies such as those found in sub Saharan Africa, traditional norms and gender roles often result in male partners being the decision makers in access to maternal newborn and child health (MNCH) and sexual and reproductive health services.^{10, 12, 18, 29} Accordingly, male partners play an important role in the reduction of the risk of transmission of HIV to their partners and in the uptake of ANC and PMTCT interventions required in moving towards the elimination of new HIV infections among children.^{19, 20, 30}

Some women who test HIV negative during ANC, subsequently acquire infection i.e. seroconvert during pregnancy or post-delivery and this is associated with increased risk of MTCT. Accordingly, male partners have a role to play in the reduction of both sexual and vertical transmission of HIV.¹³⁻¹⁵ The increased risk of domestic violence and abandonment by male partners associated with disclosure of HIV positive status by

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Survey on the experiences, attitudes and perceptions of male partner's participation in antenatal and PMTCT services

women tested in ANC can act as a major barrier to the uptake of PMTCT interventions among HIV positive pregnant women.^{18, 31} In addition, male partners are an integral part for achieving Prong 2, prevention of unwanted pregnancies through their influence upon access and use of family planning methods.^{16, 17}

In many parts of the world male partners influence women's access to financial resources and this directly or indirectly impacts on the women's capacity to attend the health facilities to obtain PMTCT services.^{32, 33} Male partners are key stakeholders in the uptake of PMTCT interventions as their support is critical to women's use of the interventions. Many studies point to the increase in the uptake and adherence of PMTCT interventions associated with the participation of male partners in the antenatal care of their spouses.¹⁸⁻²⁰ Thus engaging male partners in ANC and PMTCT programs is central to the achievement of virtual elimination on new HIV infections among children in Zimbabwe.

1.4 Male participation in PMTCT interventions

Traditionally, ANC facilities have offered reproductive health services focusing on women, failing to integrate male partners in a family-centred health system.²³ The HIV epidemic shifted policy makers and programmers' attention to the central role of men in improving the reproductive health for their partners and addressing the vertical and sexual transmission of HIV and the need to incorporate men into the reproductive health systems.³² Male participation in ANC and PMTCT activities, has been shown to positively influence the acceptability of HIV Testing and Counselling (HTC) among pregnant women, adoption of behaviours that reduce sexual transmission of HIV during pregnancy and facilitate the support of HIV positive partners to

use PMTCT regimens and recommended baby's feeding options.^{19, 20, 34} However, the proportion of male partners involved in ANC services is low, and remains a major obstacle to the uptake and adherence of PMTCT interventions.^{18, 22}

1.5 Male participation in Zimbabwe's PMTCT Program

Since 2009, various strategies have been employed by the Ministry of Health and Child Care (MOHCC) and its implementing partners to increase male participation. Despite this, male participation in Zimbabwe's PMTCT program remains low, with increases reported from 8%, 14% to 17%, in 2010, 2012 and 2013, respectively.^{3, 21}

1.6 Relevance of Male Participation in PMTCT Study

The need for evidence-based strategies to actively engage men in PMTCT interventions to improve the uptake and effectiveness of the interventions resulted in studies that identified health systems, socio-economic and cultural factors that facilitate and constrain male partners' participation in ANC and PMTCT interventions has been acknowledged.^{11, 30, 35} A systematic review by Morfaw *et al* (2013) concluded that interventions related to health systems were important facilitators to the participation of male partners in ANC services. In addition, a common barrier that emerged from studies was that the ANC environment is "Unfriendly" to male partners.^{16, 23, 24}

There is little to no available evidence regarding the men's experiences, attitudes and perceptions of ANC facilities in Zimbabwe. This evidence gap formed the justification for the Male Participation in PMTCT study, which aimed to help inform program interventions for

increasing male participation and improve the uptake and adherence of interventions to prevent vertical and sexual transmission of HIV in Zimbabwe and elsewhere.

1.7 Male Involvement Study Objectives

The main objective of the *Male Participation in PMTCT* study was to explore the health system experiences, attitudes and perceptions of male partner's participation in ANC and PMTCT program in Mashonaland East Province, Zimbabwe.

The specific objectives of the research were as follows:

1. To assess knowledge, awareness and perceptions

of maternal health and the PMTCT program among men.

2. To assess the extent of male partner participation in ANC and PMTCT program at the ANC facilities.
3. To examine the determinants of male partner participation in PMTCT program at the ANC facilities.
4. To identify the health system factors that facilitate and constrain male partner participation in PMTCT services offered at ANC facilities.
5. To make recommendations for health systems strategies that could help improve male partner participation in PMTCT interventions through "Male Friendly" ANC facilities.

2 Methods

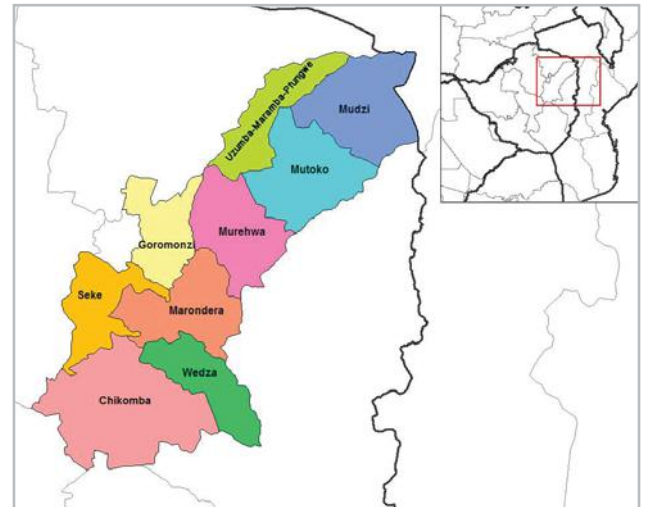
2.1 Research Design and Rationale

The study was a descriptive and analytical research that sought to examine the level of male participation in ANC services and PMTCT programs and the relationships that exist between participation and identified health system factors. The purpose of descriptive studies is to provide information on the behaviour, attitudes, perceptions and other characteristics of a given population as they occur naturally.³⁶ Correlational research explores the relationships that exist between two or more quantifiable variables to provide an in-depth understanding of the nature, extent and direction of these relationships and that could be used to make predictions.³⁷ This design was intended to achieve a detailed understanding of the motivations and underlying reasons associated with the low rates of male participation in ANC and PMTCT programs at the ANC sites.

The study employed a mixed method approach, commonly used to examine the overlapping and different components of the phenomenon under investigation.²⁵ The rationale for mixing is that neither qualitative nor quantitative methods by themselves sufficiently capture the trends and details of complex phenomenon such as male participation in ANC and PMTCT programs. The study results and interpretation contribute to recommendations for feasible and acceptable strategies to increase male partner participation in ANC and PMTCT interventions informed by perceptions and preferences of men. Finally, the study adds to the body of knowledge on health system factors that facilitate and constrain male participation in PMTCT interventions and the relative importance of these different factors.

2.2 Study Population and Sampling Procedure

The research was conducted in Mashonaland East province of Zimbabwe. The province consists of nine rural districts and three urban districts with a population of approximately 1 337 059.³⁸ The utilization of ANC and post natal care (PNC) facilities are lower in the study area compared to the national rates. It was estimated that the 13.2% of the pregnant women in Mashonaland East did not receive ANC from a skilled health provider and 59% of the women delivered in a health facility compared to national figures of 9.9% and 65.1%, respectively.³⁹



Picture 1. Mashonaland East Province, Zimbabwe

In addition, the proportion of women who received postnatal care within the first two days after birth in Mashonaland East, 15.5% was lower than the national estimate of 27.1%.³⁹ HIV prevalence among pregnant women in ANC in 2013 was slightly higher than the national, 14.5% and 13.6%, respectively.²¹ However, it is important to note that the province recorded the highest proportion (27%) of male partners who received HIV testing in ANC together with their partners compared to the other nine provinces in the

country.²¹ The research in this province presented opportunities to learn and identify acceptable interventions to increase male partner participation in this and other provinces in the country.

2.2.1 Study Population and site selection

The study population comprised of 309 men aged 18 years and above with pregnant partners who attended ANC at 12 selected health facilities in Mashonaland East Province. A total of 59 male partners of currently pregnant women or women who had been pregnant in the last two years were purposively in the community of catchment areas of study health facilities participated in FGDs. The study was conducted at 12 health facilities randomly selected from the 120 health facilities offering ANC and PMTCT services in five out of the nine districts in Mashonaland East province. It is estimated that 10% of the population in Mashonaland East province reside in urban areas.⁴⁰ The study included 4 urban health facilities to allow for plausible rural-urban comparisons.

Health facilities in four Districts, namely Hwedza, Seke, Goromonzi and Uzumba-Maramba-Pfungwe (UMP), were excluded to eliminate potential confounding effects, because some implementing partners were conducting programs to mobilize men for participation in the PMTCT program through peer-to-peer education and community sensitizations. Hospitals were excluded in the study as these are associated with referrals due to pregnancy complications which could motivate male partner participation in ANC/PMTCT services hence potentially bias results.

2.2.2 Sample size calculation

The formula for estimating the sample size for this analytical survey was adapted from Gorstein et al. (2007).⁴¹ The parameters used for calculating the sample size include the following: the proportion of men attending ANC with their wives/partners and receiving HIV testing and counseling in Mashonaland East estimated at 17% in 2011, with a margin of error less than 0.05 and at 5% level of significance. The sample size was increased by 14% to cater for

Table 1. Study sites in Mashonaland East Province, Zimbabwe

District Name	Name of Health Facility	Location
Chikomba	Chivhu Clinic	Urban
Chikomba	Nharira Rural Health Centre	Rural
Chikomba	Pokoteke Rural Health Centre	Rural
Marondera	Dombotombo Clinic	Urban
Marondera	Kushinga Phikelela Rural Health Centre	Rural
Marondera	Nyameni Clinic	Urban
Mudzi	Makaha Rural Health Centre	Rural
Mudzi	Suswe Rural Health Centre	Rural
Murehwa	Kadzere Rural Health Centre	Rural
Murehwa	Macheke Clinic	Urban
Mutoko	Makosa Rural Health Centre	Rural
Mutoko	Nyamuzuwe Rural Health Centre	Rural

2 Methods

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anticipated non-response based on the estimate of non-response among adult men.³⁹ The total sample size was estimated to be 147 men, and this number was recruited consecutively at the health facilities until the required sample size was reached. A matching number of the control group of men who had not attended ANC with their partners was randomly selected for follow-up in the community.

2.2.3 Sampling Procedures

The sampling of study participants was done in two distinct research phases:

PART I: Quantitative Survey

An analytical survey of 309 men aged 18 years and above with pregnant partners who had received ANC and PMTCT services at 12 selected health facilities in Mashonaland East Province. Two distinct groups of men were sampled for survey administration:

- i. **Attending Male Partners:** All men aged 18 years and above who attended ANC and with their pregnant spouses at selected ANC facilities over the study period of six weeks.
- ii. **Non-Attending Male Partners:** Male partners of pregnant women attending their third or fourth ANC visit alone during the study period were randomly selected for follow-up in the community. The data collection team was assisted by Village Health Workers (VHWs) to locate the homesteads of the randomly selected women and their male partners were approached and invited to participate in the study.

PART II: Qualitative

Six (6) focus group discussions (FGDs) of 8-12 men who resided in the catchment area of the health facility in the study were conducted. Purposeful sampling was employed to draw the FGD participants from the community with the assistance of the VHWs. The

inclusion criterion was that participants have to be married/partner to a woman who is currently pregnant, or who has been pregnant within the last two years.

2.3 Research procedure and instruments

The research procedures for the study are similarly described according to the method employed as follows:

PART I: Quantitative Procedures and Instruments

1. **Health facility records** on the number of pregnant women who attended ANC and those who received ANC and HIV testing with their male partners were used to estimate the level of male partner participation in the PMTCT program.
2. **Quantitative survey data** collected through:
 - a. *Attendee exit interviews* with male partners who would have attended ANC and PMTCT programs with their pregnant partners. Exit interviews were conducted using pre-tested, structured questionnaires translated into local vernacular (Shona) were administered by an interviewer (OPHID Trust male field officer) after the ANC visit of the couple at the health facility.
 - b. *Non-attendee household-level interviews* among men who did not attend ANC with their partners during the current pregnancy (in its 3rd trimester). Interviews were conducted using pre-tested, structured questionnaires translated into local vernacular (Shona) administered by an interviewer (OPHID Trust male field officer). These data were also used to identify the health system factors that facilitate and constrain their participation in the PMTCT program.



Picture 2. OPHID Operational Research Officer and Study PI, Vivian Chitiyo distributing data collection materials to enumerators of the Male Participation Study

Similarities between Attendee and Non-attendee survey tools:

The variables measured by these two instruments included male participation and health system factors influencing male partner participation being the dependent and independent variables, respectively. The three part approach to health systems assessment by Donabelian was used to examine the health system factors influencing male partner participation as follows.⁴²

1. Structural factors which are defined as the characteristics of the setting in which health services are delivered.
2. Processes define the interaction that occurs between the health care worker and the patients

and what is done in delivering and receiving health care.

3. Outcome reflects on the effects of the health care on the patient's health status and knowledge as well as the extent of client's satisfaction with the health care provided.

Difference between Attendee and Non-attendee survey tools:

The attendee survey tool explored motivational factors and personal experiences of participation in ANC and PMTCT program while that of non-attendees explored the experienced socio-economic barriers and perceived health systems barriers to participation.

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PART II: Qualitative Procedures and Instruments

Qualitative data through focus group discussions with male partners was collected to enhance the interpretive understanding of the influence of health system factors. The qualitative data collected were utilized to generate insights into the shared experiences and community level attitudes and perspectives of the quality of care and what could be done to enhance male partner participation. The FGDs explored:

- Community's knowledge and perceptions on health system factors that influence male partner participation in ANC and PMTCT programs
- Health delivery structures and processes that could support male partner attendance.
- Experiences and perceptions about what makes/could make ANC facilities more "male friendly"

Demographic information was collected from each FGD participant using a written questionnaire. Proceedings of the discussions were taped and notes were recorded after seeking consent from the participants.

2.4 Ethics

The study protocol was submitted to the Medical Research Council of Zimbabwe (MRCZ) as a new application (Approval no. MRCZ/A/1792), together with letters of support from the offices of the Provincial Medical Director's Office of Mashonaland East, Ministry of Health Ministry of Health and Child Care. District health executive permission was sought to collect all data. Written informed consent was obtained from all the study participants.

2.5 Data Analysis

The quantitative data collected was captured using EPI info and analyzed using STATA version 12. Univariate analysis was conducted to describe the demographic characteristics of the sample and identify the health system factors that influence male partner participation. Logistic regression was conducted to examine the determinants of male partner antenatal attendance. Inferential statistics were used to explore the health system factors that constrain male participation in the PMTCT services offered at ANC facilities.

Thematic approach was used to analyze qualitative FGD data. Data was translated and transcribed from local language Shona into English. Interview transcripts, field notes and observations analysis was reviewed and grouped into common themes. Qualitative data was later compared against quantitative survey findings to provide insights into the health systems factors that underlie low male partner participation in PMTCT programs at the ANC facilities and their views of "male friendly" ANC facilities.

3 Results

3.1 Socio-demographic characteristics

A total of 309 male partners of pregnant or lactating women who had received antenatal care at health facilities offering PMTCT services in Mashonaland East province were interviewed. Exit interviews were administered to 155 men attending ANC with their partners. A control group of men who had not attended ANC with their partners during the study period was interviewed at community-level (n=154). Of the 309 participants, 207 (67%) were rural, while 102 (33%) were urban. The majority of respondents 275 (89%) had received secondary or higher education. There were more participants who were informally employed including subsistence agriculture and petty trading 164 (52%) while 128 (41%) were formally employed and only 17 (7%) were unemployed.

To provide depth to the questionnaire data, six focus group discussions (FGDs) were conducted at

community level with 59 men, residents of the catchment areas of health facilities that were participating in the study and married/partner to a woman who was currently pregnant, or has been pregnant within the last two years. The average size of FGDs was 10 participants (range 6 – 15). The median age of the men was 32 years. presents the demographic characteristics of the study participants.

3.2 Knowledge and awareness of maternal health care

3.2.1 Antenatal Care

Good knowledge on importance of uptake of ANC for maternal health and HIV testing

Men's described awareness of ANC care services during FGDs was high, with the majority of participants in all the focus group discussions reporting that the services are important for pregnant women.

Table 2. Demographic characteristics of Male Participation study participants (N=368)

	Structured interviews		Focus group	
	Frequency	Percent	Frequency	Percent
Age group				
15-24	71	23%	8	14%
25-34	164	53%	32	54%
35-44	59	19%	12	20%
45+	15	5%	7	12%
Place of residence				
Rural	207	67%	39	66%
Urban	102	33%	20	34%
Educational level				
Primary or none	34	11%	10	17%
Secondary or higher	275	89%	49	83%
Current marital status				
Divorced/separated	3	1%	2	3%
Married	306	99%	57	97%

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	Structured interviews		Focus group	
	Frequency	Percent	Frequency	Percent
Current employment status				
Formal employment	128	41%	14	24%
Informal employment	157	51%	35	59%
Student	3	1%	1	2%
Unemployed	21	7%	9	31%
Number of children ever born				
0	71	23%	7	12%
1-2	133	43%	23	39%
3+	105	34%	29	49%
Religion				
Traditional/none	66	21%		
Christians (Roman Catholic, Protestants, SDA, Pentecostal)	146	47%		
Christians (Apostolic)	95	31%		
Muslim	2	1%		
Type of union				
Non-polygynous union	285	92%		
Polygynous union	24	8%		

X Omitted because the data was not collected for FGD participants

ANC was associated with HTC of women as this was frequently mentioned as the main reason for women to attend ANC. The participants also reported the importance of men to accompany their partners to ANC so that they can receive HTC as a couple to prevent the transmission of HIV from mother to child. Antenatal check-ups for pregnant women were said to be important for the examination of the foetus and detection of potential complications associated with the pregnancy and access appropriate treatment and care. In addition, ANC check-ups were said to be important for the assessment of gestational age in preparation of the health facility delivery

Limited knowledge on early ANC and 4+ ANC for optimal outcomes among mothers and infants

FGD participants did not describe the importance of early ANC booking as guided by the focused ANC WHO guidelines⁴³ with only one participant responding and correctly reporting early booking as described in Box 3.0.

Box 3.0: Men's voices on... Importance of early ANC booking...

On that issue of registering, I think these days they are encouraging that pregnant women should not spend more than three months without going to register your name. They say this because you have to know your HIV status and so forth. If you test HIV positive they give medication to the woman to prevent the baby from being infected. Those are some of the things that they are encouraging these days. Male partner, (FGD 5)

Survey results also demonstrated limited knowledge of the minimum number of ANC visits expected of pregnant women:

- 24% (n=75) correctly reported four visits as minimum for ANC services.

- 42% (n=131) did not know the expected number of ANC visits for their partners during pregnancy.
- 15% of the study participants (n=46) were not aware of the number of times their partners had attended ANC during pregnancy.
- 60% (n=185) reported less than four ANC visits, however, as the study population included partners of currently pregnant women the majority of the men (75%) reported that their partners were going to attend other ANC check-ups.
- Male partners attributed fewer ANC check-ups to: the partner being healthy and not in need of many check-ups (12%) lack of time to travel to the ANC clinic (4%) and high transport costs or long distance to the ANC clinic (4%).

3.2.2 Pregnancy complications

Awareness of potential complications during pregnancy was explored through asking male participants about signs of danger that can occur during pregnancy. Other reported danger signs included: stomach/abdominal pains (16%); severe

backaches (21%) and vomiting/nausea (30%). Most participants 92% suggested the utilization of health care services provided by the hospital or clinics only upon detection of dangers during pregnancy while 6% suggested visiting the clinic and a faith healer.

3.2.3 Family Planning

During focus group discussions, the majority of the participants were aware of family planning services offered at health sites in their catchment areas. Knowledge of specific family planning methods revealed that the pill and injectables specifically depo-provera were commonly used by couples to prevent unwanted pregnancies as these were mentioned by the majority of men in all the focus group discussions. Fewer study participants identified the use of condoms as a family planning method or as a dual protection method. Knowledge of other family planning methods including Loop, Norplant and both male and female sterilization was low because these were identified by fewer participants during the focus group discussions. Participants expressed concern regarding side effects associated with some of the family planning methods. Some of the side effects reported included longer menstruation periods for women, or continual

Table 3. Male partner knowledge of complications in pregnancy (N=309)

Symptoms of danger during pregnancy	Yes	No	Do not know
Vaginal bleeding	140 (45%)	23 (7%)	146 (46%)
Convulsions	91 (29%)	21 (7%)	197 (64%)
Severe headaches	193 (62%)	11 (4%)	105 (34%)
Dizziness or blurred vision	133 (43%)	16 (5%)	160 (52%)
Generalized oedema	175 (57%)	17 (6%)	117 (37%)
Breathlessness and tiredness	186 (60%)	20 (7%)	103 (33%)

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bleeding and taking unduly long to conceive after stopping the use of contraceptives. The concerns and misconceptions about family planning methods were expressed (Box 3.1).

Box 3.1: Men's voices on... Family planning concerns and misconceptions

After you have used contraceptives, does it not block the uterus such that you won't be able to conceive?(FGD 5)

If you really look at jadelle or no plant, it's a pill that is inserted in a woman's body usually under the left arm. So what then happens is her menstrual cycle will change, but there will come a time when she will have her menstrual cycle for 1 or 2 months and a man might not be patient so it means that that family will have a problem. Some might fail to conceive when they want to have a baby because of the dirt that will be accumulating inside (FGD 4)

3.2.4 Awareness of postnatal care and infant feeding

Most focus group discussion participants expressed awareness that after giving birth, women were encouraged to visit the clinic so that the new born and the mother are examined and monitored. The monitoring of the mother after delivery was said to be important to ensure recovery after giving birth- for example to confirm that stitches were healing well and to screen for other diseases such as hypertension, breast and cervical cancer.

On the issue of breastfeeding, most participants were not aware of the safe infant feeding practices as

recommended by MOHCC⁴⁴ to all women regardless of the HIV sero-status as illustrated in Box 3.2.

Box 3.2: Men's voices on... Awareness of current breastfeeding guidelines

"Give breast milk only in the first 6 months. Introduce solids and liquids from 6 months. Continue breastfeeding up to 34 months or beyond unless counseled otherwise by a health worker".(MOHCW, 2012)

Male partner knowledge on current recommended breastfeeding practice:
I just heard that a child can stop breast feeding after six months (FGD 2)

The time of breastfeeding what I understand from what I heard is if its parent is positive it breastfeeds for less time than those who are not positive, if I'm not mistaken they say it must 6months only and for those who are negative you will limit on your own time when you think it the baby has grown to be weaned. (FGD 1)

3.3 Men's experiences with ANC setting and service delivery

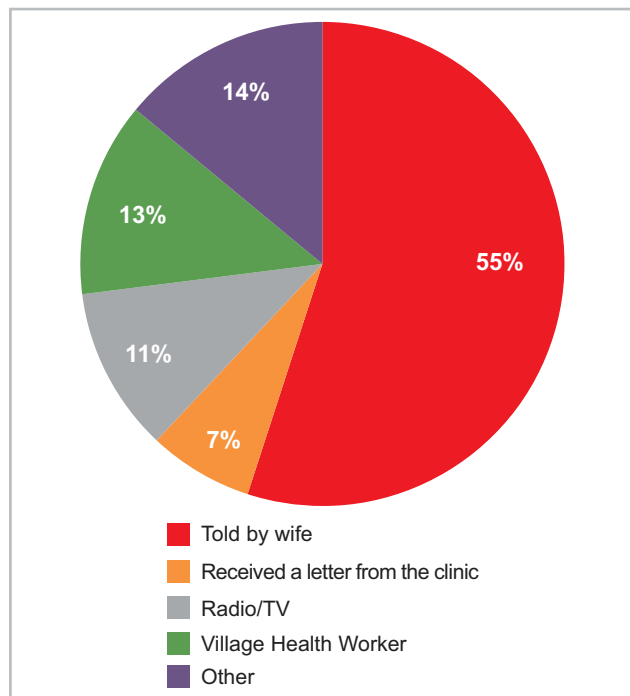
Exit interviews were administered to 155 men attending ANC with their partners during the study period (February to March, 2013).

3.3.1 Motivating Factors for Male Participation in ANC

Ranked self-reported factors which motivated men to accompany their partners to ANC included:

1. Wanting to know more about the pregnancy: 40%;
2. Supporting wife/partner during pregnancy: 36%;
3. Accessing other health services: 14%, and;
4. General health concern: 5%

Figure 1. Source of information on importance of men's ANC attendance with partner (N=155)



Interviewees reported that they heard about the importance of men to accompany their wives/partners to ANC mostly through their wives/partners 55%, Figure 1.

3.3.2 Men's satisfaction with the ANC environment and service delivery

The study used five Likert items to assess men's satisfaction with health facility infrastructure and six Likert items linked to processes at the ANC facility. **Table 4** presents the frequency distribution of the satisfaction ratings and the mean ratings.

In general, the processes including the interpersonal relationships and organization of services had lower satisfaction ratings compared to the infrastructural setting. The time spent before consultation had the lowest mean ranking with half of the participants being satisfied (good/excellent) with the time the spent waiting before consultation. Similarly, half the men who had accompanied their partners to ANC were satisfied with the time the spent at the health facility during the ANC visit. A small but significant proportion of men were not satisfied with the hours and days of ANC and PMTCT service delivery, 27% and 33% respectively.

Forty six per cent (46%) of the men reported waiting for less than 30 minutes before consultation, 25% spent 30-60 minutes and 29% had to wait for more than an hour before consultation at the health facility. During this waiting period 75% of the men reported sitting in the waiting area with wife/partner while 18% waited for consultation outside the waiting places and 7% reported sitting alone in the waiting area. The most frequently cited reason for waiting outside or sitting alone was overcrowding or lack of space in the waiting areas (68%). Twenty eight per cent (28%) of participants attributed their waiting outside the waiting area to difficulties in sitting in a women's environment indicating lack of physical comfort among the male partners who had attended ANC with their partners (Box 3.3).

**Box 3.3: Men's voices on...
Discomfort in feminized service environments**

"Some of us men find it very difficult and we are shy to sit in a place with so many women"

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Table 4. Male satisfaction with ANC and PMTCT service delivery and environment (N=155)

Health care attributes	Poor (1)	Fair (2)	Good (3)	Excellent (4)	Mean Rating
Processes - Interpersonal relationships					
The quickness of staff to assist you	10%	24%	52%	14%	2.7
Willingness of HCW to assist you	13%	36%	37%	14%	2.5
Length of time spent waiting for consultation	16%	35%	39%	10%	2.4
Processes - Organization of service delivery					
Length of time spent for the visit	13%	36%	37%	14%	2.5
The hours of service at this facility (opening & closing time close)	4%	23%	54%	19%	2.9
The number of days ANC & PMTCT services are available to you	10%	23%	56%	11%	2.7
Physical Infrastructure					
The cleanliness of the clinic	1%	8%	59%	32%	3.2
Privacy from having others hear your consultation discussions	0%	8%	55%	37%	3.3
Privacy from having others seeing you in the examination room	1%	10%	54%	35%	3.2
The sanitation facilities for males	0%	26%	59%	15%	2.9
The ease of moving around the clinic with partner	3%	21%	56%	20%	2.9

Participation in ANC activities was high, with 75% reporting that they entered the examination room with partner and an overwhelming majority, 96% (n=112) reported to feel comfortable during the examinations. Among the participants who did not enter the examination room 25% (n=39), the reasons included; not knowing that they could enter the examination room (31%), not feeling comfortable to watch the wife/partner being examined (17%), not being invited to the examination room (11%) and 6% were specifically told not to enter the examination room by the health care worker.

3.3.3 Men's perceptions of quality of care of ANC and PMTCT services

Participant perceptions of health care service provision were assessed using men's experiences and attitudes

of non-medical health care attributes including: provision of care, respect for patient's preferences, emotional support and information and education. The responses were scored on a three point Likert scale, disagree (1), neither disagree/agree (2) and agree (3). As illustrated in Table 5 the majority of participants (95%) were satisfied with the services they were provided during the ANC visit with the pregnant partner. Although emotional support provided to the participants was rated satisfactory, 14% of the men disagreed with the statement, "emotional concern shown by health care workers when disclosing HIV test results".

Perceived respect for patient preferences was very high, with the majority of male partners (96%) agreeing that decisions about their family health were valued by the health care workers (HCWs). One in four

men who accompanied their partners to ANC during the study period felt that the HCWs were not comfortable in caring for women who came to ANC with their partners. With regard to information and education, 91% of the participants agreed that they were satisfied with the responses they received about their questions. However, a relatively smaller proportion (79%) of the participants was satisfied with the level of information on PMTCT of HIV that they received during the ANC visit. When the participants were asked to provide a general opinion of their health care experience during the ANC visit with their partners, 78% of the men were satisfied overall, while 8% were dissatisfied with the services they received (Figure 2).

Figure 2: Distribution of overall male partner satisfaction with health care received in ANC during exit interviews

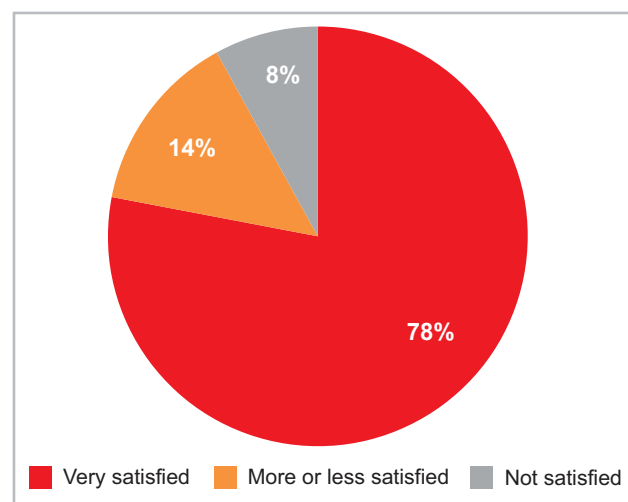


Table 5: Men's perceptions on the quality of care in ANC and PMTCT services, Mashonaland East

Health Care Attributes	Agree	Neither Agree/Disagree	Disagree
Provision of Care and treatment			
HCW gave me opportunity to discuss concerns about pregnancy	90%	3%	7%
HCW provided the service(s) you and your partner needed or wanted	95%	2%	3%
Emotional Support			
HCW was concerned about my emotions in telling me the HIV test results	79%	7%	14%
HCW can maintain your HIV test results confidential	87%	8%	5%
HCW was willing to listen to or talk with you in detail about HIV and PMTCT	97%	2%	1%
Respect for Patient Preferences			
HCW value my decisions about health	94%	5%	1%
HCW were friendly and respect you	86%	2%	12%
Respect for confidentiality			
HCW can maintain your HIV test results confidential	87%	8%	5%
Involvement of Family			
HCW was uncomfortable caring for women who come to ANC with partners	25%	1%	74%
Information and Education			
HCW encouraged me to ask questions	91%	4%	5%
HCW answered my questions	91%	2%	7%
HCW provided information I need on PMTCT of HIV	79%	2%	19%

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To add depth to the understanding of men's experiences of ANC, PNC and PMTCT services, FGD participants were asked to share any experiences of accessing health care services with their partners. There were mixed experiences among men ranging from positive to negative experiences. A major theme in experience was frustration with delays in service delivery acting as a deterrent for male participation. Some participants attributed the long waiting times to staff shortages at the health facilities which resulted in long queues. The poor attitudes of health care workers towards male partners of pregnant women were also reported among the negative experiences faced when they accompanied their partners particularly for labour and delivery. The issue of patient referrals was often reported as negatively impacting on their health care

experience especially in some rural areas where the standby ambulance was not readily available. Participants also raised concerns about the lack of necessary equipment at their clinics required to provide good quality maternity care. Box 3.4 provides some quotes from men relating experiences where they felt dissatisfied with health care services received.

The influence of health care worker attitudes upon demand for and satisfaction with health services was a recurring theme. Participants described positive experiences at their nearest health facilities (Box 3.5), with many commenting that the rural clinics were friendlier than larger referral centres such as district hospitals.

Box 3.4: Men's voices on...Quality of care

Health care worker attitudes:

... when we come to register you will be treating us good but when it's time to deliver they nurses will be harsh to me and the woman in labour (FGD 3)

There is a certain day when I came with my wife when she was ill...a nurse can tell you that I am taking a break. You know that it will take 15-30 minutes. I came and was told that we are taking a break and yet it was way past break time and I had to excuse myself from work (FGD 4)

Availability of skilled attendants and emergency referrals:

I think in clinics especially like these small ones there should be experienced midwives, especially when someone comes and is in labour because what the women does is that they say if you go to the clinic early you will stay for long so they delay and they will come when they are already in pain, but then when they come here, the nurses will say she has to go to the hospital because the case is complicated. The problem now is that as the husband I can't afford to pay the transport costs for her to go the general hospital, the woman will end up giving birth on her way to the hospital.(FGD 6)

...for me to come here I have to walk about 6,5km, I experienced this transport problem last year, my wife was pregnant and she had a still birth, she was in pain from 2am and I came here, I had to wait for about 30 minutes to be attended by the nurses. We came by the tractor there were no nurses so the driver had to go and call the nurse and it took about 30 minutes and by the time the nurse arrived the baby was already dead. (FGD 6)

**Box 3.5: Men's voices on...
Impact of positive attitudes among health care workers**

'The first thing that will make me encourage my relative to come to this clinic is because of the staff at this clinic, they welcome patients very well and treat people in a good manner.'
(FDG 5)

3.4 Knowledge and awareness of PMTCT and Pediatric HIV program

3.4.1 Modes of mother to child transmission

Knowledge of the three modes of mother-to-child

transmission of HIV was reported as follows by men surveyed (N=309):

1. Pregnancy: 68% (n=210),
2. Labour and Delivery: 81% (n=251)
3. Breastfeeding: 73% (n=225).

Fewer than half of men surveyed 45% (n=141) had knowledge of all three main modes of MTCT (comprehensive knowledge) of HIV.

Table 6 presents the demographic and socio-economic differentials in comprehensive knowledge of MTCT of HIV. Primary or no education and rural residence were associated with lower levels of comprehensive knowledge while the Pentecostal religious group had a higher proportion of participants with more knowledge on MTCT of HIV. Age, parity (number of children) and male partner antenatal attendance were not associated with comprehensive knowledge of MTCT of HIV.

Table 6: Socio-demographic differences: comprehensive knowledge* of MTCT of HIV

Characteristics	Number (n/N)	Percent	P value
Age group			
15-24	30/71	42%	0.648
25-34	77/164	47%	
35-44	29/59	49%	
45+	5/15	33%	
Educational level			
Primary or less	7/33	21%	0.003**
Secondary or higher	133/276	48%	
Place of residence			
Rural	83/206	40%	0.007**
Urban	58/103	56%	

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Characteristics	Number (n/N)	Percent	P value
Current employment status			
Formal employment	67/128	52%	0.039**
Informal employment	58/152	38%	
Unemployed excl. agriculture	16/29	55%	
Number of children ever born			
0-1	71/145	49%	0.248
2+	70/164	42%	
Ever attended ANC			
Yes	51/108	47%	0.681
No	90/201	45%	
Religion			
Traditional/None	19/67	28%	0.000**
Christians (Roman Catholic, Protestants)	43/98	44%	
Christians (Pentecostals)	35/48	73%	
Christians (Apostolic)	44/95	46%	

Note: *Comprehensive knowledge defined as stated awareness of 3 main modes of MTCT

**p values < 0.05 are significant. # Pearson's chi-squared test is used as the statistical test of significance

3.4.2 PMTCT Program Knowledge

The majority of men surveyed (92%) reported having heard about the PMTCT program. However, knowledge levels about methods to prevent MTCT were lower, and ranged between 63-69%:

- Maternal ARVs: 69% (n=213)
- Exclusive breastfeeding: 63% (n=195)
- Consistent, correct use of condoms: 67% (n=204)

- Less than one third of men (28%; n=87) had what can be considered as good knowledge (all methods) of preventing MTCT of HIV. Good knowledge of PMTCT was significantly associated with urban residence, attendance at ANC with partner and belonging to the Pentecostal religious group (Table 7).

Table 7: Demographic and socio-economic differentials in comprehensive knowledge of PMTCT of HIV, Mashonaland East

Characteristics	Number (n/N)	Percent	P value
Age group			
15-24	14/71	20	0.137
25-34	48/164	29	
35-44	22/59	37	
45+	3/15	20	
Educational level			
Primary or less	7/33	21	0.342
Secondary or higher	80/276	29	
Place of residence			
Rural	47/206	23	0.003*
Urban	40/103	39	
Current employment status			
Formal employment	39/128	30	0.651
Informal employment	39/151	26	
Unemployed excl. agriculture	9/30	30	
Number of children ever born			
0-1	37/145	26	0.349
2+	50/164	30	
Ever attended ANC			
Yes	24/108	22	0.089**
No	63/201	31	
Religion			
Traditional/None	12/67	18	0.000*
Christians (Roman Catholic, Protestants)	27/98	28	
Christians (Pentecostals)	25/48	52	
Christians (Apostolic)	22/95	23	

Note: **p* values<0.05 are significant.

** *p* values<0.10 are significant. # Pearson's chi-squared test was used as the statistical test of significance

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Focus group discussions reflected men's awareness of the PMTCT program and expressed belief that it was helping women to prevent maternal transmission of HIV to the infant. Most participants said that because of the PMTCT program it was possible for a HIV positive mother to give birth to HIV negative child unlike in the past. Before the advent of PMTCT interventions, HIV positive mothers were reported to often get sick and die together with their children.

Both partners knowing their HIV status was discussed as important among couples for PMTCT (Box 3.6). Participants described that some male partners were not willing to accompany their partners to ANC for fear of testing HIV positive.

Knowledge of pediatric HIV services was poor as none of the focus group discussants could correctly identify the recommended age for HIV testing among infants with one study participants responding to the facilitator's probing with the following comment: "On children we have not said anything everyone is quiet,

Box 3.6: Men's voices on... Couples HIV testing in ANC

We come for HIV testing at 3 months me and my wife we also register our pregnancy during that first visit, then we will be able to know our status and if the child can be prevented from getting the virus then the wife will get the tablets (FGD 6)

I just know a few things. They would first want to know the woman's HIV status so that if she is HIV positive they can prevent the virus from being transferred to the child (FGD4)

For people who are HIV positive they are encouraging us to use protector plus (condoms) so that we can protect the baby (FGD 1)

it means we don't know anything so we will need help" (FGD 3). This was a shared concern among participants in other FGDs as responses showing awareness of pediatric HIV services were not obtained by men.

3.5 Level of male partner participation in PMTCT program

3.5.1 Male participation in ANC and couples HTC

Male participation in PMTCT program was defined as attending at least one ANC visit with wife/partner and receiving couple HIV testing and counseling during that visit. Excluding the exit interviews (as 100% of those men attended ANC with their pregnant spouse), the data show that less than one third (30%; n=46) reported ever attending ANC with their partner during the current or last pregnancy. In addition, the program data for the sites that participated in the study, January to March 2014 show that 25% of the women who received HTC in ANC presented with their male partners.



Picture 3. Men participating in Focus Group Discussions

3.5.2 Determinants of male partner antenatal attendance

Logistic regression was conducted to identify the socio-demographic characteristics associated with male partner antenatal attendance in Table 8. Living within 5 kilometers of the health facility was a significant predictor for male partner attending ANC services (Odds Ratio [OR]=2.39, 95% Confidence Interval [CI], 1.34–4.27). The majority of men reported

travelling to the clinic by foot, 82% (n=254), while 16% (n=48) used motor vehicles. Having two or more children [OR=0.50, (0.28-0.89)] and secondary or higher education [OR=0.40, (0.16-1.00)] was significantly associated with lower levels of male partner antenatal attendance. Age, location of residence, type of marital union and employment status of the participants were not significantly associated with male antenatal attendance.

Table 8. Association between socio-demographic characteristics and male partner ANC attendance

Characteristics	Unadjusted		Adjusted	
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Age group				
15-24	1			
25-34	1.08	(0.60-1.93)	1.68	(0.85-3.33)
35-44	0.79	(0.38-1.62)	1.66	(0.69-3.98)
45+	1.99	(0.51-7.81)	5.07	(1.13-22.69)
Educational level				
Primary or none	1			
Secondary or higher	0.48	(0.20-1.31)	0.40	(0.16-1.00)*
Place of residence				
Rural	1			
Urban	1.50	(0.92-2.44)	1.46	(0.84-2.52)
Current employment status				
Formal employment	1			
Informal employment	0.90	(0.54-1.47)	0.64	(0.37-1.11)
Unemployed	0.74	(0.33-1.68)	0.55	(0.23-1.31)
Type of union				
Non-polygynous union	1			
Polygynous union	0.82	(0.34-1.97)	0.81	(0.32-2.04)
Number of children ever born				
0-1	1			
2+	0.61	(0.38-0.97)*	0.50	(0.28-0.89)*
Distance to nearest health facility				
> 5 km	1			
< = 5 km	2.25	(1.31-3.86)*	2.39	(1.34-4.27)*

Note: * is $P < 0.05$ at 95% significance level

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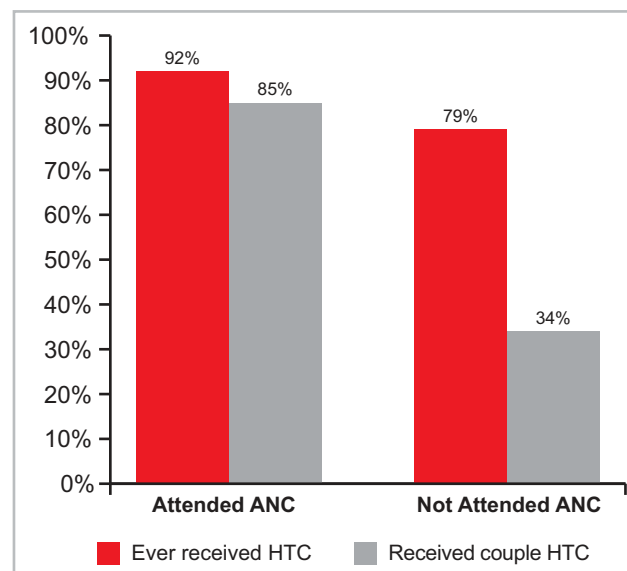
3.5.3 HIV counseling and testing

The majority of the participants reported ever receiving HIV testing and counseling (HTC) 87% (n=270). HIV testing and counseling was higher among male partners who had ever attended ANC 92% (n=184) compared to 79% (n=86) among the men who had not attended any ANC visit with their partners. In addition, antenatal attendance was significantly associated with acceptance of couple HIV testing and counseling (HTC), which was 85% for attendees compared to 34% among those who had never attended ANC at $p < 0.05$, Figure 3. Among the participants who had not attended any ANC visit and ever tested for HIV (n=85), other sources for HTC for participants included: the New Start Centre 45% (n=38), other clinics or hospitals (excluding ANC) 45% (n=38), stand-alone HTC centres 8% (n=7) and family planning clinics 2% (n=2). Reasons for failure to uptake any HTC are presented in Table 9.

Table 9: Frequency distribution of reasons for not receiving any HTC services

Reason not receiving HTC services	Frequency (n)	Percentage
I don't think I am at risk for HIV infection	13	36%
Only wife has been tested for HIV	7	19%
Other reasons	9	25%
Fear of possible divorce/separation	4	11%
Fear of being HIV positive	3	8%
I did not know men could be tested in ANC	3	8%

Figure 3: Frequency distribution of male partners' participation in HTC services (N=309)



3.5.4 Knowledge of HIV testing in ANC and disclosure of HIV test results

Disclosure of HIV test results is important for the adoption of methods to prevent sexual transmission of HIV, support for the uptake of antiretroviral therapy and reduce risk of vertical transmission. There was near universal disclosure of HIV test results among the male participants ever tested for HIV with 97% (n=300) reporting to have disclosed their test results to their wives/partners. Among the few participants who had not disclosed their HIV test results to their wives/partners (3%; n=9), fear of stigma and discrimination was cited as the main reason for non-disclosure.

During the first ANC visit, pregnant women are offered HTC services as the initial step to access comprehensive PMTCT services. We asked the men about their knowledge of HTC of their partners during pregnancy. The majority of the men were aware that their partners had received HTC during the current or last pregnancy 93% (n=285) and most of them, 98% (n=278) discussed the test results. However 7% (n=24)

did not know whether their partners had received HTC during pregnancy indicating weak communication in the relationships and serve as a barrier to male participation ANC and PMTCT services.

3.6 Men's perceptions and attitudes towards the PMTCT program

3.6.1 Male perception and participation in PMTCT programs

Men's perceptions of the PMTCT program were assessed using Likert items while FGD participants discussed their views about the program. There was universal acceptance of the PMTCT program among the men: 99% of the participants perceived that the program was important for the family's good health and 97% agreed to the importance of men's involvement for a successful PMTCT program. However, the perceived importance of male partner participation in the program was relatively lower with 75% of the men agreeing to being involved in the PMTCT program. In addition, 68% of the participants agreed to accompany their wife/partner to ANC, while 32% disagreed with accompanying wife/partner to ANC for PMTCT services. Negative peer influence on male antenatal attendance was low in the study population with the majority of the men, 96% disagreeing with the statement that men who accompany their wives/partners to ANC are weak or bewitched.

Dialogue between couples about HIV and PMTCT was high, with 80% of the of men reporting that they have discussed PMTCT issues with their partners and 87% perceived that it was important to disclose HIV test results to wife/partner. However, a lower proportion, 73% of the men agreed to the use of condoms consistently during pregnancy and breastfeeding to prevent incident HIV infection among children.

3.6.2 Male knowledge and acceptance of ART for PMTCT

There were mixed perceptions about antiretroviral therapy for PMTCT among the men with nearly half of the participants (49%) agreeing that "taking ARV drugs helps to PMTCT", while 41% disagreed and 10% did not know. Despite the low levels of knowledge of the importance of ARV drugs for PMTCT, willingness to support the uptake of ARV drugs was high with the majority of the participants, 77% agreeing to support wife's uptake of ARVs for PMTCT. Seventy four per cent (74%) of men were willing to accept and support the provision of ARV prophylaxis for an infant exposed to HIV and the majority, 83% reported their willingness to support wife/partner practice safe infant feeding methods as recommended in ANC for PMTCT. The vast majority of men, 91% agreed that children born to HIV positive mothers should be tested for HIV. Overall, men had positive perceptions of the PMTCT program and almost all participants believed that male partner participation in PMTCT was beneficial at family and community level, 97%.

3.6.3 Influence of male participation on family health practices and attitudes



Picture 4. Male participation in ANC had benefits on reported health-related attitudes and behaviours related to HIV prevention, care and treatment

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Further analyses of the data reveal that male attendance in ANC was associated with positive family health practices and attitudes. Men who had attended health services with their pregnant spouses consistently demonstrated more positive attitudes towards supporting family health than men who had not. These include: willingness to practice safe sex as a method of preventing incident HIV infection (89% vs 59%, Chi square $p=0.044$), disclosure of HIV status to partner (95% vs 74%, $p=0.03$), willingness to support wife's uptake of ARVs (80% vs 70%, Chi square $p=0.003$) and support ARV prophylaxis for the infant (78% vs 67%, Chi square $p=0.041$), Figure 4.

3.7 Health system barriers to male participation in PMTCT

Survey participants were asked a series of questions regarding health systems factors that deter male antenatal attendance:

- **Feminized health facility environment:** The female dominated composition of health care providers was reported by most study

participants, 67% as a hindrance to male partner ANC attendance.

- **Waiting times:** More than half of the participants, 55% reported that the long waiting times discouraged men from accompanying their partners to ANC. Thirty three per cent (33%) of men who had ever attended ANC with their partners reported that health care providers were not quick to assist them.
- **Service availability:** Forty one per cent (41%) of men reported that the days of service were not suitable for men while a slightly smaller proportion 37% were not comfortable with the operating times for services.
- **Infrastructural barriers:** The main concern was lack of space to move around the clinic for services as a couple reported by 24%.

Pearson's chi-square test was used to assess whether the reported barriers were independent of men's ANC attendance with their partners. The results show that most of the reported barriers were significantly dependent on ANC attendance Table 10.

Figure 4: Comparison of family health practices and attitudes by ANC attendance with partner

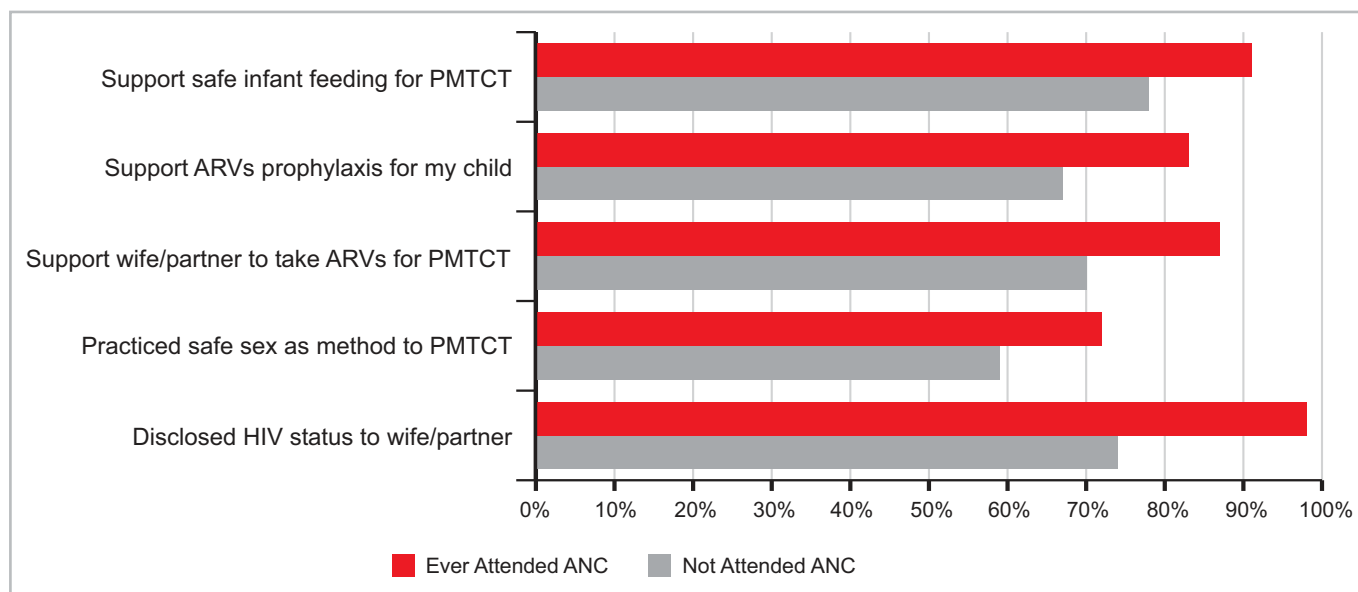


Table 10: Health system attributes hindering male partner participation in PMTCT services

Attributes of health services in ANC	Ever attended ANC n (%)	Not Attended ANC n (%)	Total n (%)
Infrastructure			
Lack of space for moving around the clinic	48 (24)	27 (25)	75 (24)
Lack audio privacy during consultation discussions**	29 (14)	8 (7)	37 (12)
Lack of visual privacy during examination**	21 (10)	7 (6)	28 (9)
Availability of service			
Days for services are not suitable for men**	72 (36)	59 (52)	128 (41)
Hours of services are not suitable for men (opening & closing time)**	53 (26)	60 (56)	113 (37)
Processes			
Long waiting times for ANC and PMTCT services**	97 (48)	73 (68)	170 (55)
Interpersonal relationships with health care providers			
Composition of health care providers uncomfortable **	147 (73)	59 (55)	206 (67)
Staff are not quick to assist you and your partner/wife**	66 (33)	51 (47)	117 (38)
Lack of willingness to help you**	45 (22)	20 (19)	65 (21)
Lack of respect towards men	24 (12)	20 (19)	44 (14)

Note: **Pearson Chi-square test for association significant at 95% significance level

Male partners, who had not attended ANC and were interviewed at community level (n=108), were asked to assess the relative importance of other health-related reasons for failure to participate in ANC and PMTCT services. Working during ANC service days and hours ranked highest among the identified barriers as cited by 81% of the participants (n=87). Other reasons for non-attendance included: the lack of knowledge on the importance of attending ANC and PMTCT activities (57%, n=62), fear of HIV testing together with wife/partner (20%, n=22), distrust in the confidentiality of HIV test results among health care providers (15%, n=17) and poor attitudes by health care providers (7%, n=8).

The health system barriers described by men in FGDs were consistent with men surveyed. Focus

group participants reported that male partner participation in PMTCT services was demotivated by the following factors: poor attitudes of some health workers (Box 3.7); inadequate human resources at the health facilities leading to long waiting times and lack of competent skills at some of the health facilities resulting in frequent referrals to hospitals.

Other factors that constrain the participation in PMTCT services described in FGDs that were not captured in survey responses included inadequate supply of drugs for illnesses and transport costs of accessing services. Concerns were raised regarding the modus of distribution of ARVs practiced by some of the health care facilities (e.g. specified days for collecting drugs) which clients associate with HIV illness (Box 3.8). This resulted in lack of confidentiality

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Box 3.7: Men's voices on...

Health care worker attitudes as deterrent to male participation

"...the way people are treated at the hospitals is what causes them not to want to go there. I went to a certain hospital, I got there around 8am and there were about 10 or 8 of us but I left around 1pm. A person (nurse) was at home cooking when she was supposed to be working. This is what causes other people to think that they will not be treated well if they go to the hospital. We no longer have the motivation to go there".(FGD 2)

"The way the people that work in the hospitals will treat us is not good. Some will be very harsh and I will never be able to come back. We are facing these things. It might be a problem for men not going to the hospital but this is because of the way that we are treated when we get there" (FGD 4)

of HIV status in the communities. The participants' attempt at humour in the statement underscores the HIV-related stigma that remains within communities and provides an indication regarding how existing systems for providing HIV care and treatment create fear of unintended disclosure among men and women, which could discourage male partner participation in PMTCT.

Box 3.8: Men's voices on...

Confidentiality and ARV pick up systems

"Everyone who is HIV positive will be gathered here and if I pass through this place I will see that a certain woman is fat but she is HIV positive. (Others laugh). That is the most difficult part and people do not want to be known like that. A person should just come individually and collect his pills then go away".(FGD 5)

3.8 Suggestions to improve male participation and create "Male friendly" ANC and PMTCT settings

Suggestions on how to improve male participation in PMTCT program and create a male friendly environment originate from the open ended sections of the structured questionnaire and FGDs.

3.8.1 Health facility based suggestions

Waiting times: Long waiting times and inconvenient service opening hours were reported as major barriers to male participation in PMTCT services. Availability of services during non-working hours including weekends was suggested as critical to men's participation in PMTCT, with men describing the competing pressure of successfully providing for their families and participating in ANC and PMTCT service uptake (Box 3.9). The implication of this suggestion within the health system is the careful consideration of the cost-effectiveness and acceptability of extending the hours of operation which could include evenings and weekends before implementation.

**Box 3.9: Men's voices on...
Clinic service times and pressure to provide**

"... The second thing is that most men are the bread winners. Not so many women are employed especially here in, there are no industries. So you might not get time to go the clinic with your wife and when the wife comes back from the clinic she needs food" (FDG 4).

" Even if I decided to come after hours because I will be at work I should get help including weekends... many men will be free they will not go to work. Those are things they are not considering as the health service providers" (FDG 3).

The study participants expressed support for the strategy that was being implemented at some health facilities of offering services first to the women who are accompanied by their partners to ANC. They explained that the intervention was helping men overcome the waiting time barrier and suggested the approach be implemented in all ANC health facilities to improve male participation (Box 3.10).

**Box 3.10: Men's voices on...
No waiting lines for partners attending ANC**

"I think in clinics we could have systems like those in the bank that someone with a gold card will be served as soon as he arrives without waiting in the queue. If they could have a rule/policy that pregnant mothers should not wait in the queue if they come with their husbands. In doing this men will come with their wives so that they can be quickly served. (FDG 6)

A programmatic aside: Complexity of health system changes

In an attempt to improve male involvement the Ministry of Health and Child Care and its partners have instituted multiple pilots to support male participation in ANC and PMTCT programs. Though anecdotal, and requiring more rigorous evaluation and documentation, reports from the field indicate that there is a delicate balance for making health system changes to ensure equity, fairness and benefits to both health-seekers (male and female) and healthcare workers. Here we present some 'reports from the field' regarding some unintended impacts of male involvement initiatives. While the examples below are not being presented as 'evidence' we feel they are highly relevant to the current findings and warrant further research and reflection when designing interventions to increase male participation in PMTCT:

Preferential treatment for couples stigmatizes unmarried women: health care workers at sites where couples attending ANC 'jumped the queue' and were provided immediate care. Similarly, in efforts to reach national targets for increase male participation, health care workers are facing pressure to demonstrate increases in male partner attendance. Nurse 'pressure' to bring in male partners creating unintended stigma among unmarried and single women, who are not in a current relationship with the father of their child. This pressure (as well as the benefit of being served next) has resulted in reported 'male partner rentals' – women presenting with male friends or men around clinic areas in order to gain preferential access to services as well as avoid uncomfortable questions regarding their relationship status.

Extending clinic hours in the context of human resource constraints: Some clinics have voluntarily increased operating hours, or have begun providing services on weekend in a strategic effort to increase rates of male partner attendance in ANC. This however, done outside of a context of increased staff at health centres, is not a sustainable solution. Heavy workload, high existing patient volume, and need to preside over deliveries in the evenings at many rural health sites means that increasing operating hours in the absence of increases in staff compliments, is not a feasible solution for all sites.

These reports from the field underscore the complexity of health system intervention impacts upon a live and dynamic system with multiple actors, as found in healthcare settings. These inevitable catalytic effects should not be used as justification to avoid making progressive health system reforms intended to achieve goals that result in evidence-based improvement in health uptake and outcomes (such as male participation in PMTCT). It does, however, emphasize the complexity of making system changes and underscores the importance of implementation science methods for assessing the processes, costs and effectiveness of such health system changes.

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3.8.2 Healthcare worker skills and composition

The participants emphasized the need for trained, competent and welcoming staff who are able to timely serve couples as an essential component for male friendly service provision.

The men suggested that it was important to have more male service providers for engaging and offering psychosocial support towards a male friendly health facility. They felt that the availability of male service providers specifically for couples HIV testing and counseling in ANC would make them more comfortable and could influence the uptake of PMTCT interventions. The availability of male health care workers to discuss men's concerns and needs were suggested as a potential motivator for men to utilize other reproductive health services essential for preventing HIV transmission.

Another clear theme that emerged with regards to health care workers was the need to improve numbers of staff at the health facilities (Box 3.11).

Box 3.11: Men's voices on... Shortage of health care worker staff

The other problem is when pregnant women attend they go there early at the time the clinic is opened but the nurses are few so they come back home late because of the long queue. If they were many nurses they would help each other (FDG 2)

That's the same point the nurse are too few when we come to be treated. We take more time in the queue and when they do teachings as you are saying we will not receive adequate education because of the short time because the nurse will be hurrying to other patients because the queue is long. They do not do procedures fully some will also be running out of time and the queue will be long (FDG 3)

Men reported the shortage of health care workers to contribute to the poor service and long waiting times that were described as deterrents to male participation in PMTCT.

Finally, privacy and confidentiality was valued by men and regarded as part of what constitutes friendliness of the health services. This was even more pronounced given that many HCWs reside in the communities they provide services for. Staff rotation was perceived to aid confidentiality – see Box 3.12.

Box 3.12: Men's voices on... Shortage of health care worker staff

The moment you stay in here for 3-6months you will be known some of us grew up here and some of the nurses were there when we were born and they were the midwives so you see now the trend, we know each other. If it could happen like what happens in the police force that they rotate every 6months and the men will be free at the health facilities (FDG 3)

The other thing that happens is, there is someone who mentioned that these people (nurses) have to rotate. If I get infected with an STI, the whole village will end up knowing about it (FDG 4)

Rotation of health staff is necessary so that staff do not get used too much to the community (FDG 2)

3.8.3 Community-based suggestions to improve male participation

The participants suggested that the program should put in place systems to provide information in the community on the importance of men's active

participation in maternal health and PMTCT programs. Specific strategies highlighted during focus group discussions are summarized below with voices of men provided in Box 3.13:

Suggestions on community sensitization approaches included:

- **Raise awareness on importance of male involvement:** Community knowledge and awareness specifically among men about the benefits of antenatal care and the PMTCT program was said to be important for

mitigating the effects of socio-economic and cultural factors that deter their active participation in the program. Some of the cultural norms described by men include the view that ANC was a women's environment and childbearing and rearing was the role for women. To mitigate these barriers, men called for sensitization campaigns to raise awareness of health services available in the context of HIV prevention and treatment including that of infants and children, importance of men's involvement and their benefits to the family as a whole.

Box 3.13: Men's voices on... How to improve male participation

Information on importance of male involvement

'Surely people do not have this information, maybe there are only a few women who know about this, probably because they are told about it when they come to the hospital but most men do not know about these things'.(FGD 5)

On VHWs

The health workers are not visible in the community you will only get the information when you come to the clinic. We rarely see them in the community, we used to see VHW sometime ago moving around in the villages maybe in the 80s, but nowadays we can't see them (FGD 6)

When we were growing up we knew that there are those women that moved around to monitor hygiene. They moved door to door giving information, pills and so forth but people would get information. They are no longer doing that these days (FDG 4)

On need for written information targeted to men:

"Those booklets that have been mentioned before should be given to people so that information can be spread on PMTCT and people know how to prevent new infections" (FGD 2)

On using alternative methods to reach men with information and key messages:

"This information should be brought to our communities so that more people can hear about PMTCT, especially at the ward meetings. Most men come to these meetings because we respect our village head and issues that affect us in the villages and families are discussed. I say this because I first heard about PMTCT at our village meeting. (FGD1)

"People can also receive messages on their phones just like ECONET sends advertisement messages to people and people read them because they will be expecting communication from their loved ones" (FGD 4)

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- **Alternative strategies for community-based health education:** Improving the visibility of health care providers in the community conducting health education in communities was said to be important for improving male participation in the PMTCT program. Participants suggested to actively engage community leaders so that where possible the health education could be allocated time during community meetings. Men suggested that in order to reach larger numbers of men, health education sessions should be held at community forums both related and unrelated to health, for example the ward and agricultural meetings in the rural areas.
- **Active participation of VHWs** in their communities was also called for by the participants as they narrated that VHW used to provide vital health information in communities.
- **Community-based information dissemination:** The participants highlighted the importance of information dissemination into the community through posters and pamphlets, which could be placed in public places such as bars, churches or shops. This was said to be important because few men reach the health facilities where health education was conducted. The few that attended viewed the group health education as taking their much needed time to receive services. The availability of pamphlets could enable men to access program information at their convenience and share with their peers.
- **Reaching men through health promotion in non-health related contexts:** The participants also encouraged program implementers to consider other modes of communication to educate the community about the PMTCT program including the use of mobile phone messaging to reach out to the communities.

4 Discussion

4.1 Knowledge, attitudes and perceptions of maternal health and the PMTCT program among men

Male partners greatly influence the access, uptake and adherence to maternal health and PMTCT interventions by pregnant and lactating women in patriarchal societies such as Zimbabwe and other sub-Saharan countries.¹⁰⁻¹² Men are key decision makers of family sexual and reproductive health issues and have been shown to regulate women's access to health care services.^{10,12, 18, 29} Knowledge, attitudes and perceptions of men are therefore important for informed decision making for programs aimed at increasing the uptake and support of maternal health and PMTCT services in Zimbabwe.

Key Finding 1: Gaps in male knowledge and awareness

Areas for programmatic action:
Health information to improve men's knowledge on:

- ✓ All 3 modes of MTCT
- ✓ Long term family planning and use of dual protection
- ✓ Danger signs in pregnancy
- ✓ Need for early ANC booking
- ✓ 4+ ANC visits
- ✓ Current infant feeding guidelines
- ✓ Pediatric HIV services including Early Infant Diagnosis (EID)

Overall, study participants demonstrated moderate levels of knowledge regarding maternal health services

including family planning, ANC and PNC. While men were knowledgeable about family planning services offered to their partners by the health care providers, the concerns and misconceptions raised by the participants reflect the knowledge gaps that exist among men. In addition, the FGDs participants shared lack of information regarding the long term family planning methods indicating missed opportunities in men's support for preventing unwanted pregnancies among their partners in the context of preventing unintended pregnancies among women living with HIV.

The majority of the men reported that their partners had accessed ANC, 96% indicating that the service was acceptable and supported by men as a good health service for women's preparation for safe labour and delivery. However, there was relatively low knowledge of the different danger warning signs that can be experienced by women during pregnancy. Low levels of knowledge of danger warning signs during pregnancy among men have been observed in other studies and have been associated with poor pregnancy outcomes.⁴⁵ Men do not know enough about the benefits of engaging timely and frequently in antenatal care.

Men had good knowledge of the importance of PNC for examination and monitoring of the mother to ensure recovery after birth and infant growth. However, men were not knowledgeable about the safe infant feeding practices recommended by the MOHCC which includes exclusive breastfeeding for the first six months of life and complementary feeding thereafter. Studies have shown that lack of knowledge on maternal health issues negatively impacts on male partner's support for access to maternal health care and life saving treatment among those living with HIV.^{45, 46}

Knowledge about transmission of HIV from mother to child and reducing the risk of transmission using antiretroviral drugs, adoption of safe sexual behaviours

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and safe infant feeding practices is critical towards PMTCT.^{19, 35} The study findings show high levels of knowledge of the main modes of MTCT of HIV ranging between 68%-81%. However, comprehensive knowledge (knowing the three main modes) was low among study participants, 45%. Targeted interventions to improve knowledge levels among men with primary education and rural residents who had lower comprehensive knowledge compared to their counterparts are required.

It was encouraging to note that the majority of the study participants were aware of the PMTCT program, with 92% of the men reported that they have heard about the program. This was consistent with the awareness levels shown during all the focus group discussion where the PMTCT program was reported to be associated with women's attendance at ANC and HTC. Although the knowledge of specific methods of PMTCT was high with more than half of the participants being aware of at least one of the methods, again comprehensive knowledge was low as only 28% were aware of the three main methods to PMTCT (use of ARV prophylaxis, consistent use of condoms during pregnancy and breastfeeding and safe infant feeding practices). In addition, the study participants had limited knowledge of pediatric HIV services because none of them knew the recommended age for HIV testing among exposed infants and use of ARV prophylaxis among these infants.

Low levels of knowledge and awareness of PMTCT have been observed in other studies in sub-Saharan African and cited as a major barrier to male involvement and hence support for uptake and adherence to interventions among women.^{11, 45, 47} Thus increasing the level of knowledge about PMTCT among men is critical to improve their understanding of their role and the importance of their active participation towards elimination of new pediatric HIV infections.

Generally, men had positive attitudes and perceptions towards their partners receiving maternal health and PMTCT services. The majority of the study participants 92% supported the utilization of health care services upon detection of danger warning signs during pregnancy. This was echoed by the FGDs participants who perceived that accessing maternal and PMTCT services was important for the family's good health and better survival of women living with HIV and their children. Men emphasized the importance of their participation in the PMTCT program as they are the decision makers in the families and it was their responsibility to prevent new HIV infection by means of being faithful although condom use was rarely mentioned. These positive findings could be utilized in further attempts to actively involve male partners in MNCH and PMTCT services.

4.2 Extent of male partner participation in ANC and PMTCT program

With integration of PMTCT services into MNCH services, for which ANC is the initial point of contact,²³ male partner antenatal attendance is a crucial component for the understanding, uptake and utilization of PMTCT services.⁴⁸ In the Zimbabwean context, male partners participate in the PMTCT program by accompanying wife or partner to ANC visits, participating in individual and/or couple-testing for HIV during one or more ANC visits. This facilitates uptake, adherence and support for PMTCT interventions because of the shared information and understanding about PMTCT and women's HIV status with their male partners.^{13, 29, 49}

The findings revealed that men generally recognise their key role in PMTCT. The importance of their accompanying pregnant partners to ANC was acknowledged by the majority of the participants (95%). Evidence from FGDs showed that most men were strongly in favour of their wives/partners having

access to ANC care and PMTCT services and perceived that it could be beneficial to accompany them. The findings are consistent with those of earlier studies in the region.^{24, 27, 30}

However, in practice the proportion of men that attended ANC at least once with their partner during pregnancy was low: 30% for the sampled population; and 25% for all the participating health facilities during the data collection period. This study reports relatively higher level of male attendance of ANC compared to the currently available national estimates of 17% possibly because of the diffusion effects of the programs to mobilize men for participation in PMTCT through peer-to-peer education and community sensitizations in the neighboring districts that were not participating in this study.²¹ The problem of low male partner involvement in PMTCT services has been reported in other studies in sub-Saharan African.^{18, 35}

**Key Finding 2:
Discrepancy between perception and practice for male participation**

Areas for programmatic action:

- ✓ Need for increased peer-to-peer and community mobilization for active male participation

**Key Finding 3:
Men who attend show improved behaviours and beliefs**

Areas for programmatic action:

- ✓ Community dissemination of positive influence of male participation in other areas
- ✓ Research to demonstrate impact of male participation on health outcomes: improved family health for men, partners and children

The current study demonstrates that male partner antenatal attendance was significantly associated with couple HTC which facilitates disclosure of HIV status and understanding of PMTCT interventions. In addition, male antenatal attendance was shown to increase the acceptability, uptake and adherence to PMTCT interventions through supportive family health attitudes such as willingness to practise safe sex to prevent transmission of HIV to women of child bearing age and hence contribute towards the elimination of new HIV infections among children. The findings corroborate with previous research findings in the region.^{19, 20} This reflects the importance of antenatal attendance and couple HTC, for successful implementation of the PMTCT program.⁴

4.3 Examine determinants of male partner participation in PMTCT

Analysis of the socio-demographic factors associated with male partner antenatal attendance and participation in PMTCT is important for informing program management because it provides evidence for populations in need of targeted interventions to improve men's understanding and active participation in the PMTCT program. The study results demonstrate that shorter distances to the nearest health facility were significantly associated with male partner antenatal attendance. This is consistent with Tweheyo *et al.* (2010) who observed that short distance to the nearest health facility improved male antenatal attendance and could be attributed to minimal or no cost and shorter times required for seeking health services. The data highlight the challenge of promoting male partner participation in PMTCT program in populations where the ANC services are distant. The effectiveness of outreach programs to improve men's participation and increase couple HTC within the PMTCT program should be explored.

Male partners with secondary or higher education were less likely to attend ANC compared to the male partners with primary or no education. The result is not consistent with those of other studies that

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observed that more years of education was associated with increased participation in ANC and PMTCT services.^{35, 45} However, this could be a result of a disproportionately small number of men who had none or primary education in the current study. Male partners who already had two or more children were less likely to attend ANC with their partners compared to partners with zero or one child, a result that is consistent with Katz *et al.* (2009). This suggests the need for continued emphasis on the importance of men's participation in maternal health care and PMTCT in stable relationships which are likely to have more children to prevent new HIV infections. Although, place of residence was not a statistically significant factor in male partners participation in ANC and PMTCT services, one observes that urban men were more likely to participate compared to their rural counterparts. This reinforces the need for outreach interventions to improve male partner participation in the rural areas where distance to the health facilities contributes to their lower participation rates.

Key Finding 4:

Discrepancy between perception and practice for male participation

Areas for programmatic action:

- ✓ Need for increased peer-to-peer and community mobilization for active male participation

Key Finding 5:

Men who attend show improved behaviours and beliefs

Areas for programmatic action:

- ✓ Community dissemination of positive influence of male participation in other areas
- ✓ Research to demonstrate impact of male participation on health outcomes: improved family health for men, partners and children

4.4 Identify health system factors constraining male partner participation in PMTCT

This study demonstrates that the female-dominated ANC service environment ranked highest among the health-related barriers to male antenatal attendance at 67%. Given that more of the male partners who had attended antenatal care, namely 73%, identified this as a barrier compared to the 55% who had never attended ANC reflects the negative personal experiences of the ANC environment among men. This suggest that men maybe more receptive to ANC/PMTCT services in the presence of fellow men as health care providers and this could be explored towards improving male friendliness of the ANC facilities.

Processes, specifically the long waiting times at the ANC facility, represented a major barrier to male partner antenatal attendance and were reported by more than half of the study participants (55%). A similar finding has been reported as a hindrance to male partner involvement in the PMTCT program in other research reports.^{24, 30} This highlights the importance of improved service quality to minimize the waiting times in order to improve male partner participation in PMTCT services.

Another barrier to male partner antenatal attendance was service availability. Forty-one percent of the study participants reported that the ANC/PMTCT days were not suitable for men while 37% identified the service hours as a barrier to antenatal attendance. This was supported by the majority of participants who attributed their failure to attend any ANC/PMTCT services to working during the times or days when these take place. And presents a conflict between expectations for men to act as financial providers.¹⁸

**Key Finding 6:
Need for gender-balanced ANC service environment**

Areas for programmatic action:

- ✓ Increase number of male health care workers available to serve male partners accompanying partners to ANC

**Key Finding 7:
Hours of operation and long waiting times “unfriendly” to men**

Areas for programmatic action:

- ✓ Explore cost and effectiveness of extended hours of operation and systems to reduce waiting time among accompanying male partners to support male attendance
- ✓ Implementation research to understand the impact of male friendliness efforts on multiple stakeholders (including pregnant women and health care workers)

**Key Finding 8:
Health care worker attitudes, not infrastructure are greatest deterrents to male participation in PMTCT**

- ✓ Improved health care worker attitudes for timely services, patient rapport and care

**Key Finding 9:
Men require additional confidentiality assurances for HTC and HIV Care and Treatment in MNCH settings**

- ✓ Assessment of privacy and confidentiality in MNCH settings and how it can be enhanced

**Key Finding 10:
Men still require knowledge regarding importance and benefits of their participation**

- ✓ Innovative community outreach and education to sensitize and engage men

Offering services during non-working hours and weekends has been found to increase male partner participation in PMTCT programs in Zambia and Rwanda.^{35, 49, 50} Such interventions could be explored in other sub-Saharan countries seeking to improve male partner participation in PMTCT programs, including Zimbabwe.

Poor interpersonal relationships between patients and healthcare providers have been observed and are often cited as a barrier to male involvement in the PMTCT program.^{18, 24} The current study found that the slow response of healthcare providers was the main concern of the patients, followed by their lack of willingness to assist patients. Fifteen per cent (15%) of those men, who had not attended ANC identified distrust in the confidentiality of HIV test results as a barrier to ANC attendance. This was echoed by FGD participants who emphasized the need for healthcare provider rotation to improve the confidence in the confidentiality of HIV test results in the communities. This distrust has negative implications for the acceptability of couple HTC and hence participation in the PMTCT program.

The other barrier to male partner participation in ANC and PMTCT services was the lack of knowledge of the importance of male partner attendance that was reported by more than half (57%) of the study participants who had not attended any ANC visit. Additionally, FGD participants attributed non-participation of male partners to the lack of knowledge in the communities. The results corroborate those of a study in Uganda where knowledge of ANC services was significantly associated with accompanying spouse to ANC.⁴⁵ The results therefore reinforce the need to improve the knowledge and awareness of the program and its benefits to increase male partner participation.

Although studies have frequently reported that the ANC environment was unfriendly to men, the current study revealed that the infrastructural components of

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the ANC facility had a lower impact as barriers to antenatal attendance compared to the processes, service availability and interpersonal relationships. This is because fewer men cited reasons related to the physical infrastructure of the facility for their non-attendance. Additionally, FGD participants were silent about the infrastructural components of the health facilities as barriers to their participation in ANC and PMTCT services.

4.5 Strengths and Limitations

The Male Participation in PMTCT study was the first investigation reporting on the knowledge, attitudes and behaviours of both men who have attended ANC/PMTCT and those who have not in Zimbabwe. This comparison of attendees and non-attendees allowed us to examine the differences and similarities between the two groups and report on the socio-demographic factors significantly associated with non-attendance. Another major strength of the study was its assessment of specific elements of the

healthcare system amenable to change which acted as barriers to male participation, such as healthcare provider gender composition, waiting times and service availability. These barriers have been masked in previous studies that reported the ANC environment as unfriendly to men as such studies did not consider the specifics of the health system. Furthermore, the current study allowed for ranking of the health system barriers and thereby assessed the extent to which they demotivate male participation in ANC/PMTCT services based on both men's experiences and perspectives.

Although the study contributes to the understanding of male participation in ANC and PMTCT services, the defined geographical coverage (one province) limits national generalizability of the results. Another potential limitation was social desirability bias among attending men, with exit interviews conducted at the health facility where they had accessed care. This may have led to men underreporting negative experiences for fear of future impact upon quality of care received at that facility as noted in previous investigations.^{51, 52}

5 Recommendations

The following are recommendations for action at various operational levels that can be made based on study findings.

5.1 Policy Level

At policy level, there is need to clear guidance and national standards to assist service providers improve and strengthen male participation to contribute to the four PMTCT prongs toward elimination of new HIV infections in children. The current strategic plans allude to the need to improve and strengthen the involvement of men in PMTCT program but do not provide specific guidance on evidence-based programmatic activities, nor a framework or implementation tools for standardized service provision.^{7,8}

5.2 Health systems and program level

- Existing health facilities where ANC and PMTCT services are offered should be more “male friendly” through interventions that create a family oriented and inclusive environment to improve men’s participation. Such interventions should include exploring the cost effectiveness of extending hours of operation to improve service availability. Men were emphatic on the need to improve the gender composition of healthcare providers so that the service delivery is not continuously perceived as a female domain thereby creating an inclusive environment where men are more comfortable to access health services with their partners. Scheduling of men’s clinic times or day at the health facilities was recommended by study participants to motivate their health seeking behaviors

including accessing HTC for PMTCT. In addition, the trainings and/or refresher courses for health service providers should include communication and client care skills to ensure improved quality of care and confidentiality to improve male participation.

- **Improving male involvement in maternal health and PMTCT services requires active invitation to involve men in PMTCT activities through different approaches.** These could include MOHCC standardizing the invitation letters for men to attend ANC as this approach has been tested and piloted in health sites in the country by other researchers and was found to increase male involvement.^{29, 53, 54} Evidence from the current study has shown that only half of the men who attended ANC had been told to do so by their partners highlighting the importance of other channels of communication to encourage men to participate in MNCH and PMTCT services.
- **Efforts of engaging men should consider the health and other needs of men so that there are personal benefits to their involvement.** Existing service provision has focused on men accompanying their partners for women’s or infant’s health outcomes. Creating or expanding the services offered during ANC and PMTCT service delivery that specifically address men’s sexual and reproductive health needs can create an inclusive environment where men are comfortable to engage with healthcare providers.
- **Scale up the efforts of designing and implementation of information, education and communication (IEC) strategies to intensively reach out to men and raise men’s awareness of reproductive and maternal health including PMTCT.** Since men are and view themselves as

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the decision makers of family health issues, healthcare providers should intensify reproductive health education including education about PMTCT with the concept of shared responsibility for their own reproductive health (direct beneficiaries) and that of their partners. The health education should ensure that there is a clear understanding of the services that are provided, when and how these can be accessed. This will facilitate informed decision making and prompt action to utilize and support access to health services including ANC and PMTCT. Reaching out to men with information through the workplace including those in informal employment and or men's groups were recommended by men as important pathways to improve knowledge.

- **Effective outreach services need to be developed to improve men's participation in maternal health and PMTCT services.** Evidence from the factors associated with male participation show that short distance significantly influences men's participation in ANC and PMTCT services. Efforts to bring the couple HTC services closer to the people may improve men's participation in PMTCT program by mitigating the distance and costs associated with accessing these services at distant health facilities.
- **Training and supporting village health workers (VHWs)** on relevant health information for maternal health and PMTCT issues to complement the health education provided by healthcare providers at the health facilities. This will strengthen the capacity and confidence among VHWs to mobilise men within their communities based on accurate and up to date information.

5.3 Community level

- **Community awareness campaigns and mobilisation for increasing men's participation in ANC and PMTCT services.** Community-based efforts to increase male partner participation in ANC and PMTCT services should focus on providing information on their roles and the importance of men's active participation in these programs through awareness campaigns. The men strongly recommended improved visibility of healthcare providers and VHWs in their communities to provide this health information through different community/ward meetings were more men can be reached.
- **Promote changes in community norms on men's participation in ANC.** Since the community norms are set by community leaders and elders as well as opinion leaders who define and reinforce certain codes of conduct within their communities, strategies to increase men's participation in ANC and PMTCT services should enlist and train the community leaders and elders. They can facilitate in creating a supportive environment and influence changes in practises among men through culturally and socially acceptable approaches.
- **Engaging men who have been to ANC with their partners to participate in community sensitisations and dialogues.** Building on their positive experiences and appealing to a sense of shared responsibility, men who have participated in the PMTCT program, can act as role models and convince fellow men to participate in maternal health and PMTCT issues through peer to peer support. This can facilitate creation of a supportive environment where it is socially acceptable for men to accompany their partners to ANC and thus improve male involvement in maternal health and PMTCT services.



Picture 5. Men who participate in ANC and PMTCT with their partners can serve as positive role models in their communities

- Increase the availability of IEC materials in communities. Improving the availability of reading IEC materials such as pamphlets and posters in communities is essential to strengthen men's knowledge and promote their active participation in reproductive health issues including maternal and PMTCT. This will allow men to have alternative sources of information outside the health facilities for informed decision making for better family health outcomes.

5.4 Further Research

Further research on approaches to improve male participation in maternal health and PMTCT services could investigate the possible and effective community mobilization models, peer support, and male engagement interventions that improve uptake of and retention in MNCH and PMTCT services. Other studies could innovate and evaluate the promising interventions for engaging men in MNCH and PMTCT beyond antenatal HIV testing and HIV couple counselling and testing.

6.0 Conclusions

The study findings demonstrate universal acceptance of the PMTCT program among men. However, low male attendance at ANC with partners represents missed opportunities for the uptake and support of PMTCT interventions towards virtual elimination of new HIV infections among children. Socio-demographic determinants highlight the need for targeted interventions to support increased male participation among men particularly with two or more children and reside in remote areas with longer distances to the health facilities. Improving and strengthening male participation in PMTCT services offered at ANC settings requires a “male-friendly” approach. This could be achieved by building on the positive attitudes and perceptions demonstrated by the study participants. Addressing the health system barriers to a “male-friendly” ANC environment should

be actively pursued, including exploring the feasibility of increasing operating times and intensified community awareness campaigns to increase the understanding and knowledge of ANC/PMTCT programs. The recruitment of more male health service providers and refresher courses for health service providers, which include client care skills, has the potential to promote male partner participation in PMTCT services. Increasing male partner participation in ANC/PMTCT programs urgently needs targeted interventions going beyond structural components and addressing processes, service availability and interpersonal relationships. Further studies to evaluate the institutional capacity of implementing ANC/PMTCT interventions in an inclusive or male-friendly environment are needed to provide evidence based guidance for a defined policy framework.



Picture 6. Benefits of male involvement in family health extend beyond PMTCT throughout the life of the child

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