

**MALE PARTNER INVOLVEMENT IN THE PREVENTION OF MOTHER
TO CHILD TRANSMISSION ON HIV IN LAGOS**

STATE, NIGERIA

BY

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ABSTRACT

Several studies have shown that male partner involvement (MPI) in the PMTCT activities, couple counseling and testing for HIV increases use of intervention for HIV transmission prevention during pregnancy. Male partner involvement has the potential to bring about change because of the social power men hold in our society settings. Therefore, this study was conducted to determine the level of male involvement and to identify factors associated with male involvement in the PMTCT programme in Lagos State.

The study was a facility based descriptive cross-sectional study using a multi-stage sampling technique to select 320 pregnant women assessing PMTCT services in secondary health facilities in Lagos state. A pretested, interviewer, administered questionnaire was used to collect data consisting of socio-demographic characteristics, self reported disclosure of HIV status to partner, and level of HIV related communications with partners. A male partner involvement index score was constructed using 7 structured questions. The questions were scored one point each. Scores between 0-4 were classified as low MPI and 5-7 as high MPI. Three focus group discussions were also conducted. Data were analysed using descriptive statistics such as means, standard deviations and proportions. The chi squared test and binary logistic regression were used to investigate the association between MPI and selected explanatory variables. All analyses were conducted at the 5% level of significance.

The respondents had a mean age of 31 ± 4.6 years. Many (42.5%) were between age group 30-34, 64.4% were Christians and majority was Yoruba (61.6%). Male partner involvement was 16.6%. Disclosure of HIV status to partners, having HIV related discussion and being on ARV before this current pregnancy were significantly associated with male partner involvement ($p < 0.05$). Majority (60.9%) had been pregnant before this current pregnancy and 57.5% tested positive before this current pregnancy but only 55.3% had disclosed their HIV status to their partners with less than half the respondents 43.8% had ever discussed testing with their partners. Only 35.7% of the respondents reported HIV prevention discussion with partners, with about 43.8% respondents ever discussed testing with their partners. A total of 21.6% reported high level of HIV related discussion. Education, having been on ARV before the current pregnancy,

having a positive partner and respondents who reported high level of HIV related discussion as well as high male involvements were significantly associated with disclosure of HIV status to partners at $p < 0.05$.

More than half of the respondents (68.4%) had been on ARV before this current pregnancy and 55.0% respondents reported complete adherence of ARV during this current pregnancy, having a previous positive child, good knowledge of HIV transmission and high level of male partner involvement were all significantly associated with adherence to ARV at $p < 0.05$. Logistic regression showed disclosure of HIV status to partner (AOR = 4.0; 95% CI: 0.11-0.56) significantly predicted male partner involvement of PMTCT in Lagos state, being on ARV before current pregnancy (AOR = 4.30; C.I: 2.17 – 8.52) and high level of HIV discussion predicted disclosure as well as having a previous positive child and knowing father's status (AOR = 1.97; C.I: 1.04 – 3.72) predicted adherence to ARV use.

Level of male partner involvement, disclosure and adherence in PMTCT programme in Lagos state was low, and HIV related communication among partners was also low. This study also provides evidence that emphasis should be placed on disclosure among partners as well as HIV related communication among partners should be encouraged and the need for Lagos state to have programmes that will facilitate male partners' involvements as integration of male partners will strengthen all four pillars of PMTCT.

Keywords: Male partner involvement, disclosure, adherence.

Wordcounts: 495

DEDICATION

To Oluwanifemi, Oluwasemilore and Mofeoluwa with love and also dedicated to all women living with HIV in Nigeria with the believe that this study will make a contribution to programme development and implementation.

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I am tremendously thankful to my able and industrious supervisors, Dr O.B Yusuf and Dr. B.O Adedokun for their efforts, technical guidance and brilliant contributions towards the successful completion of this dissertation. Indeed, the duo is more than a supervisor; they are role models and mentors. Also, I appreciate the contributions made by Dr. M.D Dairo to the success of this dissertation and the MPH programme at large.

The role played by Dr. Patrick Nguku, Resident Advisor of NFELTP towards taking all residents to the desired standards is worth appreciating. He is a teacher, a coach, a mentor and not a tutor alone. Sir, your contribution is highly appreciated.

I sincerely appreciate the motivation, support and encouragement received from my hubby of life, my support system Maxwell Babatunde Okunromade and my precious children, Oluwanifemi, Oluwasemilore and MofeOluwa. Special appreciation to my parents – Elder and Deaconess Sunday Oyeniya. You will live long to reap the fruit of all your labour.

My profound gratitude also goes to my field site contributors in this study Dr. Yeside Shogbamimu and Dr Latifah Adeleye for their contributions, also my program supervisor, Prof Olufunlayo Fawole for the knowledge gained through her during the programme.

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CERTIFICATION

We certify that this work was done by **OKUNROMADE OYELADUN FUNMI** in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, University of Ibadan, Nigeria under our supervision.



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LIST OF ABBREVIATIONS

AIDS	-	Acquired Immune Deficiency Syndrome
ART	-	Anti Retroviral Therapy
FMOH	-	Federal Ministry of Health
HCT	-	HIV Counseling and Testing
HIV	-	Human Immunodeficiency Virus
LGA	-	Local Government Area
LSACA	-	Lagos State Agency for the Control of AIDS
MARPS	-	Most at Risk Populations
NACA	-	National Agency for the Control of AIDS
NARHS	-	Nigerian HIV and AIDS and Reproductive Health Survey
NDHS	-	Nigeria Demographic and Health Survey
NGO	-	Non-Governmental Organizations
NPC	-	National Population Commission
PLWHIV	-	People living with HIV and AIDS
PMTCT	-	Prevention of Mother to Child Transmission of HIV infection
UNAIDS	-	United Nations Programmes on HIV/AIDS
UNICEF	-	United Nations Children Fund
VCT	-	Voluntary HIV Counseling and Testing
WHO	-	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The Human Immunodeficiency Virus (HIV) epidemic continues to grow despite several decades of advocacy, awareness raising and investment in programmes to control the spread of HIV (Pustil, 2016). By the end of 2015, 36.7 million (34.0 – 39.8 million) people were living with HIV globally (UNAIDS, 2016), a threefold increase since 1995.

Two third of the people living with HIV are in sub-Saharan Africa, and thus the HIV epidemic in this region is outpacing the treatment and prevention response, which is partly explained by the lack of alignment between programmatic and financial HIV prevention needs and the prevailing prevention responses (Pustil, 2016). Sub-Saharan Africa continues to bear the burden of the HIV pandemic, twelve million women aged 15 years and over were estimated to be living with HIV in sub-Saharan Africa, and of the 330,000 new HIV infections among children (under 15) globally in 2015, over 90% were in sub-Saharan Africa. The vast majority of new HIV infections among children occur through mother-to-child transmission (MTCT) (Gourlay et al., 2013).

Nigeria has the second highest HIV burden in the world and about 29% of HIV transmission in Nigeria is believed to be due to mother to child transmission. The prevalence is 3.1 per cent among the general population (4.1 per cent females, 3.2 per cent males) and 4.1 per cent among pregnant first-time antenatal care attendees (Milazzo, 2014). The transmission of HIV from a HIV-positive mother to her child during pregnancy, labor, delivery or breastfeeding is called mother-to-child transmission. In the absence of any intervention, transmission rates range from 15% to 45%. This rate can be reduced to below 5% with effective interventions during the periods of pregnancy, labor, delivery and breastfeeding (WHO, 2016).

These interventions primarily involve antiretroviral treatment for the mother and a short course of antiretroviral drugs for the baby. They also include measures to prevent HIV acquisition in the pregnant woman and appropriate breastfeeding practices. The new Sustainable Development

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Goals place heightened emphasis on prevention of mother-to-child transmission (PMTCT) in the context of better health for mothers and their children (WHO, 2016).

Antiretroviral therapy (ART) is the core intervention of the prevention of mother-to-child transmission (PMTCT) service package to reduce vertical transmission among HIV-positive pregnant women, alongside other programme covering HIV prevention in women of reproductive age, family planning, and long-term HIV care and treatment (Gourlay et al., 2013) Antiretroviral (ARV) drugs can reduce the likelihood of HIV vertical transmission from 15 to 45% in the presence of intervention, to <2% (WHO, 2016).

The initiative for the establishment of PMTCT program in Nigeria started with the inauguration of the PMTCT National Task Team (NTT) in December 2000. The PMTCT NTT was saddled with the responsibility of developing the proposal, framework, guidelines, monitoring and evaluating (M and E) the PMTCT program (GARPR, 2014). Actual PMTCT services in Nigeria commenced as a pilot project in July 2002 (Ogunbosi et al., 2014) The goal, objectives and targets of the PMTCT program have undergone some review over time in line with national realities and international demands such as the global initiative for the elimination of MTCT by the year 2015 (FMOH, 2015.) The current overall goal as documented in the 2010-2015 scale-up plan is to contribute to improved maternal health and child survival through accelerated provision of comprehensive and integrated PMTCT services with male partner involvements (UNAIDS, 2014).

1.2 Problem statement

In Nigeria, of the 190,000 pregnant women living with HIV in 2013, only 27% of them received antiretroviral treatment to prevent the transmission of HIV to their child and only 19% of these women are still taking their medication when breastfeeding, emphasizing a lack of drug supply and a lack of knowledge of the transmission routes of HIV (UNAID, 2014.). Twenty two percentage of all new child HIV infections globally during 2013 were in Nigeria (51,000) with only a 19% decline in child HIV infections since 2009, it is clear that Nigeria is not progressing fast enough with its PMTCT programme (Luzuriaga & Mofenson, 2016). Nigeria is the second

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worst performing Global Plan priority country after Chad. Only 12% of children who are born HIV-positive are receiving treatment to control their HIV infection (Hardon et al., 2012). Improvements in the uptake of HIV testing and counselling, and scaling up access to the most effective antiretroviral regimens among pregnant women are essential targets Nigeria must meet if they are to halt the rising numbers of children born with HIV.

Lagos State is one of the 12+1 states, which accounts for 70 per cent of Mother –to-Child Transmission of HIV burden in Nigeria with its HIV prevalence of 5.1 per cent with about 54,071 pregnant women was infected with the virus (Bustreo et al., 2013). This translates to over 16,468 preventable HIV infections among infants in the state during 2013 alone.

Despite the campaign to accelerate the elimination of mother-to-child transmission of HIV and to reduce maternal deaths in Lagos State, there is still low utilization of PMTCT and family planning services in the state. However, implementation of these guidelines remains inadequate, with pregnant women in commonly presenting for their first ANC visit well into their second trimester or later, delaying HIV diagnosis, AZT prophylaxis and lifelong ART initiation (Clouse et al, 2013). In addition to late presentation for ANC services, some studies suggest that pregnant women have poorer retention in HIV care than men and non-pregnant women (Dionne-Odom et al, 2016; Phillips et al, 2014).

Little is known about the role of Male Partner Involvement in the context of PMTCT in Lagos State and other parts of the region (Dunlap et al., 2014; Makoni et al., 2016a), other researches has focused on qualitative documentation of male attendance at antenatal clinics and male HIV testing and difficulties in attending antenatal appointments (Nkuoh et al, 2010).

A broader view of MPI is hereby needed. Retention in HIV care during pregnancy is paramount, as HIV-positive pregnant patients require routine management and daily adherence to ART once initiated for optimum outcome. Lack of partner support and men's limited knowledge about the link between antenatal care and prevention of HIV, for example, often acts as a hindrance to seeking early and effective care (Ongweny-Kidero, 2014). Low levels of active male

participation in antenatal care and PMTCT have been reported in South Africa (Colvin & Stinson, 2011).

Studies conducted in Cameroon, Ivory Coast, Kenya, Tanzania, Malawi, South Africa and Burkina Faso reported low uptake of HIV testing services by men citing a number of reasons such as; fear of knowing one's seropositive status, time constraints, fear of stigma and using the woman's HIV status as a criteria confirming their own status (referred to as 'proxy testing') (Ladur et al, 2015; Mambanga et al, 2016).

Although there is increasing evidence that men can make a difference in maternal health, little is known about under what conditions men choose to get involved. Furthermore, little is known about the factors that influence male participation in PMTCT programmes in Nigeria, from either client or services' perspectives. Without an understanding of the barriers and enablers to male participation in PMTCT, it will be difficult to implement PMTCT services effectively. The male partner plays a role in terms of lowering a woman's risk of acquiring HIV, prevention of unplanned pregnancies, joint decision making on HIV testing, ART treatment and infant feeding method (PEPFAR, 2010; Richey & Setty, 2010.)

1.3 Justification for the study

Africa men tend to have upper hand in sexual and reproductive health decision making and the uptake of reproductive health services including PMTCT by their partners (Theuring et al, 2009). Without working with men, change will be very difficult or impossible. HIV prevalence among women accessing antenatal services is still high at 27% with 190,000 pregnant women requiring treatment for prevention of mother-to-child transmission of HIV in 2013 (Milazzo, 2014). Despite the progress made in improving PMTCT coverage in Lagos state, studies shows that a considerable number of women report late for the first antenatal care visit, are initiated on ART late and are loss to follow up upon delivery (UNAIDS 2008).

The study conducted by Clouse et al, 2013 reported a median gestational age at HIV testing of 26 weeks and a high rate of loss to follow up at 57% suggesting missed opportunities in the

programme. One of the major factor that prevents some women from accepting HIV testing is the need to seek their partner consent or assent (Bolu et al., 2007).

Studies in Uganda, Malawi and Nigeria have shown that the utilization of PMTCT services by pregnant women is influenced by individual factors such as fear of disclosure of HIV results, lack of male partner support, fear of violence, abandonment and stigmatization (Byamugisha et al, 2010; Ditekemena et al, 2012; Kalembo et al, 2013). In Sub-Saharan Africa women economic vulnerability and overdependence on men coupled with traditional male superiority over women increase their vulnerability to HIV by constraining their ability to negotiate the use of a condom, discuss fidelity with partners or even leave risky relationship (Peacock & Levack, 2004).

It is, therefore, important to explore different ways in which PMTCT programmes could be enhanced in order to improve outcomes for women and men accessing PMTCT services in Nigeria. Considerable attention also needs to be drawn to the potential influence of male involvement in sexual and reproductive health in Nigeria. Male involvement has the potential to bring about change because of the social power men hold in our society settings. According to Theuring et al. (2009), couple testing may serve as an entry point to women utilizing PMTCT services in patriarchal communities and in settings where women have limited autonomy in decision-making (Theuring et al., 2009). Men's role in providing emotional and material support to partners including financial support, permission to access health care, monitoring drug compliance and helping out on household chores have been identified in several studies as ways to improve women's uptake of PMTCT services (Anígilájé et al, 2016; Kirsten et al, 2011; Reece et al, 2010).

In Lagos state, HIV prevalence among cohabiting individuals is notably high of who about 33.2% of the cohabiting couples are discordant (Ujah et al, 2015). In urban areas, 5.6% of HIV negative married men are living with infected wives and 2.2% of Married HIV negative women are living with infected husbands (Ujah et al., 2015). This shows that, screening the mother only to prevent mother to child transmission of HIV does not safeguard the child from acquiring HIV.

For this reason, for effective PMTCT interventions, male partners should be involved in their partners ANC/PMTCT care.

Male Partner Involvement is a feasible intervention in the PMTCT programme and understanding factors that promote increased involvement of male partner can be used as a priority intervention to promote MPI in PMTCT programme and to drive PMTCT policy across Nigeria. The information from this study will help policy makers and others stakeholders in the design and implementation of contextual specific interventions on PMTCT programme and in carrying out behavioral change communication programs to improve the male partner involvement. This study will also contribute to the growing body of research which is attempting to shift the discourse from a negative view of HIV stigmatization to a more positive and holistic view. This will improve partner communication on their HIV status, in turn help reduce the adoption of health-compromising sexual behaviors and consequently have a long-term impact on the health of HIV positive female across the life-course.

There is therefore a need to evaluate the role of male partners in PMTCT services in Lagos State and to determine the level of involvement of Male Partner in PMTCT, and to determine factors associated with MPI so as to provide insights into possible ways of increasing male partner participation in antenatal care and improve outcomes of pregnant women accessing PMTCT services.

1.4 Research Questions

The research questions that guided the conduct of this study were:

1. What is the level of male partner involvement among pregnant women attending PMTCT services in Lagos State?
2. What proportions of HIV pregnant women disclose their status to their partners in Lagos State?
3. What proportions of HIV positive pregnant women adhere to their anti-retroviral drug?
4. What are the factors that are associated with disclosure in the PMTCT services in Lagos state?

5. What are the factors that are associated with adherence in the PMTCT services in Lagos State?
6. What are the associated factors with the male partner involvement among HIV pregnant women attending PMTCT in Lagos State?

1.5.1 General Objective

The general objective of the study was to determine level of male partner involvement and associated factors in the utilization of PMTCT services among HIV positive pregnant women and also to generate a broader understanding of women's experiences of male partner involvement in Lagos State.

1.5.2 Specific Objectives

- 1) To determine the level of MPI among HIV women during PMTCT care in Lagos State.
- 2) To determine pregnant women's disclosure of their HIV status to their male partner.
- 3) To ascertain women's adherence to ARV during pregnancy.
- 4) To identify the predictors of disclosure in PMTCT services in Lagos State.
- 5) To determine factors associated with adherence in PMTCT services in Lagos State.
- 6) To assess the factors associated with MPI in the context of PMTCT in Lagos State.

CHAPTER TWO

LITERATURE REVIEW

The World Health Organization (WHO) works together with partners to set global standards for HIV prevention, care and treatment for pregnant women, mothers and their children; and to develop evidence-based strategies and define global targets, baselines and indicators that promote the integration of PMTCT into maternal, newborn and child health services, thus strengthening health systems.

2.1 Mother to Child transmission of HIV

The transmission of HIV from a HIV-positive mother to her child during pregnancy, labour, delivery or breastfeeding is called mother-to-child transmission. In the absence of any intervention, transmission rates range from 15% to 45%. This rate can be reduced to below 5% with effective interventions during the periods of pregnancy, labour, delivery and breastfeeding (WHO, 2016).

In 2012, about 260,000 new HIV infections had occurred among children globally; of which 230,000 are from sub-Saharan Africa (UNAIDS, 2013). There is a declining trend in the occurrence of new infection and AIDS related mortality among children in the region. Although the mortality rate in 2012 was said to be 20% less compared to 2013, 330,000 children died of AIDS related causes. By 2015, over 9,500 Nigerian children were estimated to acquire new HIV infections from their mothers.

According to the UNAIDS progress report of 2016, Nigeria is among the ten countries in the world with the highest burden of HIV infection and new HIV infection among children (Pustil, 2016). The high prevalence of HIV among pregnant women, high total fertility rate, culture of prolonged breast feeding/missed feeding, non-use of modern health facilities for antenatal and delivery purposes have contributed to the high rate of MTCT in Nigeria and it is estimated that without effective interventions, between 67,500 and 125,000 infants will be infected in a year in Nigeria (Agboghoroma et al, 2013). PMTCT was introduced as a comprehensive package of

intervention known as Prevention of Mother to Child Transmission (PMTCT) programme with an aim of reducing MTCT.

2.2 Prevention of Mother-to-Child HIV Transmission Programmes (PMTCT)

The Prevention of mother-to-child transmission (PMTCT) of HIV program is one of the health sector responses to the HIV/AIDS epidemic in the country. A four pronged comprehensive strategies encompassing primary, secondary and tertiary preventions where mother's and infants' survival are at the core have been proposed for PMTCT. To facilitate implementation of these strategies, guidelines have been developed internationally by the Joint United Nations programme on AIDS and the World Health Organization (WHO), and at national levels governments adapt the international guidelines taking into consideration the local contexts (WHO, 2016).

The initiative for the establishment of PMTCT program in Nigeria started with the inauguration of the PMTCT National Task Team (NTT) in December 2000. The PMTCT NTT was saddled with the responsibility of developing the proposal, framework, guidelines, monitoring and evaluating (M and E) the PMTCT program. Actual PMTCT services in Nigeria commenced as a pilot project in July 2002 (Agboghoroma et al., 2013). One of the main outputs of the PMTCT NTT was the development of National Guidelines on implementation of PMTCT. The national guidelines took into consideration the World Health Organization four-prong strategy on PMTCT. The first guideline was produced in 2001 and was reviewed in 2005, 2007 and 2010 in line with scientific development and international best practices based on WHO recommendations. National PMTCT standard operating procedure was also developed to assist with the implementation of the guidelines (FMOH, 2010).

The overall goal as documented in the 2010-2015 scale-up plan is to contribute to improved maternal health and child survival through accelerated provision of comprehensive and integrated PMTCT services (FMOH, 2010). These prevention strategies are integrated in existing maternal and child health programmes and are implemented mainly under the help of the health system. These are known as the four prongs of PMTCT which include:

(1) Prevention of HIV among women of reproductive age

- (2) Prevention of unintended pregnancies among HIV-positive mothers,
- (3) Prevention of vertical transmission, and
- (4) Provision of treatment, care and support to HIV-positive mothers, their children and family.

The effectiveness of the PMTCT programmes is largely dependent on proper implementation and utilization of the recommended services. In developed countries, where the recommended services are properly implemented, MTCT is on the verge of elimination, whereas it still represents a threat to child survival in many developing countries like Nigeria (AVERT, 2015).

However, the recent UNAIDS report has created optimism about the success of the PMTCT programmes all over the world (Pustil, 2016). The report highlights 43% reduction in global incidence of MTCT and 38% reduction in the sub-Saharan African region in the past three years which is largely due to proper implementation of the third and the fourth prongs (PEPFAR, 2010). The third prong addressing the prevention of vertical HIV transmission has four major components. These are HIV counseling and testing; provision of prophylactic/therapeutic ARV drugs for mothers and their infants; safe obstetric practices for HIV-positive mothers and infant feeding counseling and support. Moreover, male partner involvement in PMTCT and exposed infant follow up are important aspects of the prevention of vertical HIV transmission programmes (PEPFAR, 2010).

Following the release of new guidelines in 2015, WHO no longer recommends different choices for PMTCT, but instead advises that all pregnant and breastfeeding women should receive ART irrespective of clinical stage of disease or CD4 count. This approach, first pioneered by Malawi, has been subsequently adopted by most countries with a high burden of HIV including Nigeria (Kellerman *et al.*, 2013; WHO, 2010).

Much progress has been made in prevention of mother to- child transmission (PMTCT) programmes over the past decade. Without intervention, HIV-infected mothers have a 35% overall risk of transmitting HIV to their child during pregnancy, delivery, and breastfeeding. Clinical trials have demonstrated that ARV prophylaxis, when administered to mothers and their newborn babies, can reduce the risk of MTCT by approximately 75% (Anoje *et al.*, 2012; McIntyre, 2010). However, an effective prevention of MTCT can occur when HIV testing and other preventive interventions form part of comprehensive maternal and child health

programmes. HIV prevalence among antenatal clients in Nigeria was 4.6% as at November 2011, while the number of pregnant women who received antiretroviral drugs (ARVs) for PMTCT was 30%, while estimated number of HIV exposed infants at risk of MTCT annually was 85,450 (NACA 2015).

2.3 Male Involvement in PMTCT

Male involvement from the PMTCT programme perspective may mean men supporting choices and rights of the female partners or men doing something about their own reproductive and sexual behaviours as a way of protecting their partners and their babies against HIV which is one of the agenda of the global health strategy of the SDG (Temmerman,2012).

There has been lack of consensus about definition of male partner involvement and about what activities constitute 'involvement' (Alio et al, 2013). Male involvement can be open communication within couple which can build equal and safe partnership in homes. It also means providing financial or psycho-social support in paying for health care services, supporting and promoting contraception to avoid unwanted pregnancies within HIV positives couples and practicing of safe sex to avoid re-infection and other sexually transmitted infections during pregnancy. It also means jointly participating in antenatal clinic visits and undergoing counseling and HIV testing for better understanding and promotion of the female partner's adherence to antiretroviral therapy and supporting and promoting safe infant feeding options (Kalembo *et al.*,2012).

PMTCT programmes focuses on women research has highlighted the beneficial impact of male involvement in programmes to prevent the mother-to-child transmission of HIV to tackle new infections among infants and this has called for men's engagement in the service to realize the programme's objectives and not only to reduce the incidence of infection among women and infant but also to meet the HIV prevention and care needs of the family unit (Kalembo et al., 2013).

A study of different countries found that supportive male partners who were willing to get an HIV test and communicate with their partner about sexual and reproductive health issues,

increased the commitment of pregnant women to PMTCT programmes (Auvinen et al, 2010; Ditekemena et al, 2012 and Koo et al., 2013) also reported that mothers that adhered to PMTCT programmes are more often accompanied by their husbands to ANC/PMTCT clinic than those who do not adhere (Rebecca et al, 2007; Ditekemena et al., 2012; Koo et al,2013).

By comparison, women in relationships with unsupportive males who did not discuss reproductive issues have reported violence, abandonment or fear of abandonment (Auvinen, 2014). Some studies have also reported shock, disbelief, violence and discrimination among male partners of pregnant women who disclose their HIV status (Chukwuemeka et al, 2014; Nkwo, 2012). Inviting men to use voluntary HIV testing and counselling services, offering PMTCT services at sites other than antenatal care ones (such as bars, churches and workplaces), as well as prior knowledge of HIV and HIV testing facilities have all been identified as ways of increasing male involvement (Makin et al., 2008; Visser et al , 2008).

It has been observed that there is low male partner involvement in PMTCT services in many sub-Saharan countries where male participation levels in hospital settings were reported to vary between 12.5% and 18.7% (Kalembo et al., 2012). Although it has been recognized as beneficial, however, the extent of MPI remains low, and attempts to increase male partner attendance of antenatal care have been largely unsuccessful. The South African PMTCT guidelines include the promotion of MPI but MPI has not exceeded 17% (Avert, 2016). MPI is also part of the PMTCT national policy in Tanzania, but this has not translated into actual male participation (Van den Berg et al., 2015). Early studies conducted in Tanzania (2002-2004) and Kenya (2001-2002) reported that the proportion of male partners presenting at antenatal clinics was only 12.5% (Gupta et al., 2014) and 16% (Poulsen et al, 2010) respectively. Similarly, multiple strategies to encourage MPI have been implemented in Cameroon, but these have led to only limited success, with MPI not exceeding 20% (Brittain et al., 2015). No documented studies of MPI in PMTCT services in Nigeria.

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2.4 Benefits of male partner participation in PMTCT

Male participation in child-bearing decisions is crucial and also has a positive impact on the acceptability of PMTCT interventions. Women with supportive partners will be more motivated to undergo HIV testing, to return for the HIV test result and to disclose the HIV result to their partner. Also, well-informed couples may be more likely to adopt a low risk behavior and increase mutual support, regardless of the test result (WHO, 2012). Studies have shown that in countries with high HIV prevalence there is also a high incidence of HIV infection in women during pregnancy or in the postpartum period. Indeed in this period women are particularly vulnerable to become HIV infected (Ditekemena et al., 2012). Several benefits of male partner involvements have been highlighted below.

2.4.1. Male Partner Involvements and Disclosure

In order for male partners to become involved in PMTCT with their pregnant partners, they must first have been informed of their partner's HIV status. Disclosure is thus a prerequisite for MPI, and non-disclosure may be a significant barrier to MPI. Disclosure is a neutral term, in the context of HIV/AIDS, it refers to the act of sharing of an individual's HIV positive status to another person or organization (e.g. healthy authority, employer sexual partner, etc.) (UNAIDS, 2016).

The purpose and the consequences of disclosure may either be beneficial or harmful. Beneficial disclosure involves occasions where an HIV + person informs a sexual partner about his/ her status for prevention purposes or inform family members or health care workers to share vital information and obtain support. Harmful disclosure involves cases, where disclosure is made without the consent of the person who is HIV + and leads to adverse consequences for that person such as stigma, abandonment loss of job, furthermore harmful disclosure may also impair prevention and care activities (WHO, 2016) encourages beneficial disclosure that is, a disclosure which is voluntary, respect the autonomy of the individual and the dignity of the affected individuals, maintain confidentiality as appropriate and leads to beneficial results for those individuals their families, sexual and drug- injecting partners. It also leads to greater openness about HIV/AIDS in the community and meets the ethical requirements in the situation where there is a need to prevent forward transmission of HIV(UNAIDS, 2006).

An early review of disclosure reported fear as the most common barrier to disclosure, namely fear of abandonment, rejection, violence, stigmatization and upsetting family members (Theuring et al., 2009). While many women desire support from their partners, others indicate that they do not want their partners to be involved in their antenatal care and PMTCT, for reasons which include prior experiences of violence from their partners as well as non-disclosure of their HIV status, often because they fear their partner's reaction (Nkwo, 2012). A study of HIV-positive pregnant women in Tanzania, for example, found a low rate of disclosure to male partners, with only 41% of participants having disclosed (Gupta et al., 2014). A low rate of disclosure (46.2%) has similarly been reported in Cote'd Ivoire (Cartoux et al., 2008).

While the above studies reported fairly low rates of disclosure, vastly different rates have been found in different contexts. In a study conducted in Nigeria, for example, 66.7% of female participants had reportedly disclosed to their partner, with the major reason put forward being to ensure emotional and economic support (Nasir Sadiya, 2012). In contrast, a study conducted in Tshwane, South Africa, found that only 59% of newly diagnosed HIV-positive pregnant women had disclosed their HIV status to at least one person at the time of interview, with the major reasons for partner disclosure being to inform partners of the risk of infection, and to encourage them to be tested and to change their risk behaviours, very few women reportedly disclosed in order to obtain support for PMTCT activities, and the major reasons put forward for non-disclosure were fear and not yet being ready to disclose (Brittain et al., 2015). The trends and rates of HIV status disclosure reported in these studies is impossible to compare directly because, the studies differed on how they measured rates of disclosure and time frame used however it is clear the low rate of HIV disclosure were reported among women in antenatal care across Africa.

Efforts to decrease MTCT have led to increasing numbers of women discovering that they are HIV-positive during pregnancy, this may be particularly traumatic as there is little time to deal with the diagnosis while simultaneously preparing for the birth of the child. Women are likely to discover their HIV status before their partners, as a result of being routinely tested at antenatal services, and are then burdened with the responsibility of disclosing (Colvin & Stinson, 2011). Other studies similarly suggest that women who are diagnosed during

pregnancy have a relatively short period of time to deal with their diagnosis before the birth of their child, but that hiding their diagnosis may lead to a greater risk of MTCT if they are unable to adhere to their antiretroviral regimen correctly because they fear inadvertent disclosure (Makin et al., 2008).

Despite these concerns, however, a study conducted in Pretoria, Tshwane, found that 59% of female participants who were diagnosed during pregnancy had disclosed their diagnosis early, and that the majority (81%) had disclosed by three months postpartum. Although the majority of women who disclose report supportive reactions from their partners (Makin et al., 2008), fears related to disclosure should nonetheless be taken into account during HIV counselling and testing, as they represent a major barrier to disclosure and subsequent MPI.

There is an association between partner disclosure and HIV prevention. Women who disclosed their HIV status to their partners were more likely to return for post-test counselling, accept antiretroviral prophylaxis, modify infant feeding practices and increase condom use in the postpartum period than those who did not (Kiula et al., 2013). It was also found that women who had disclosed their HIV status and who reported less HIV-related discrimination were more adherent to antiretroviral prophylaxis to prevent MTCT. Similarly women whose male partner was involved in antenatal care were more adherent to both the maternal and infant nevirapine doses (Peltzer et al, 2010).

Strong association was also found between prior communication about HIV testing with partner and HIV seropositive disclosure women who had prior communication about HIV testing with their partner were twelve times more likely to disclose their HIV status than those who had not communicated, likewise participants who had smooth relationship with their partners were six times more likely to disclose than the counterpart (Kiula et al., 2013). Women who disclosed to their partner were almost five times more likely to participate in PMTCT than the non-disclosed (Maman, 2007). Out of 78 study participants 42 equivalent to 53% reported supportive reactions from their partner after disclosure, and felt free following disclosure, only 15% reported some negative reactions from their partner such as yelling, worried about his status, talked about divorcing (Maman, 2007). Similar results were found in a cross sectional study conducted in

2013 at Morogoro region in Tanzania about Predictors of HIV serostatus disclosure to partners among HIV positive pregnant women. In this study a total of 250 participants were enrolled, 41% (one hundred and two) participants had disclosed their status to their partner. HIV disclosure to sexual partners was more likely among pregnant women who were less than 25 years, knew their HIV status before the current pregnancy, discussed with their partner before testing, secondary or higher education and had partner with higher or secondary education and high income. Participants who discussed about HIV testing with their partner before testing were six time more likely to disclose to their partner than the counterpart. Dependency on the partner for food, rent, had lower odds of disclosure. A cross-sectional study, spousal disclosure of HIV serostatus among women attending antenatal care in urban Nigeria (Afe, 2015), found that a majority of participants had disclosed their status to a sexual partner, (88%) equal to 146 participants out of 166 participants. The higher rate of disclosure reported in this study was the likelihood of high rate of partner support which will encourage adherence to antiretroviral therapy and other PMTCT interventions (Afe, 2015).

4.2.2. Male Partner Involvements and Adherence to ARV Therapy

Male involvement in PMTCT improves ARV prophylaxis uptake, adherence and promotes compliance for family planning, and optimal infant nutrition (Ditekemena et al., 2012). Male partner involvement (MPI) has been proposed as a priority intervention, although MPI could strengthen multiple aspects of PMTCT especially adherence to ARV therapy by pregnant women, but rates of MPI remain low worldwide (WHO, 2012) and MPI, where present, is largely limited to financial support (Byamugisha et al., 2010a; Nkuoh et al., 2010) and little is known about the role of MPI in the context of PMTCT in Nigeria and there is a lack of consensus about its definition of MPI (Brittain et al., 2015).

The majority of research has focused on quantitative documentation of male attendance at antenatal clinics and male HIV testing thus a broader view of MPI is needed (Brittain et al., 2015). Men are decision makers in many of the African settings where PMTCT programmes are offered. Without working with men, change would be very difficult or impossible. In addition, risk behaviors' change dramatically among couples where partners' supports were involved. With male partner involvement in a PMTCT programme, a couple has a chance to make

informed decisions jointly on living positively with HIV, share responsibility for preventing HIV in the unborn child, discuss safer sexual practices and make informed decisions to access care and treatment. Men can play an important role in supporting HIV-positive pregnant women to get to clinics or hospitals where chances of safe delivery are higher and can also assist HIV-positive pregnant women to choose safe infant feeding methods as well as compliance with ARV treatment (Osoti *et al.*, 2014).

A study by the World Health Organisation in 2014 indicates that when men know that their spouses are HIV-positive and involved in the PMTCT project, they play an active role in applying the advice received, particularly related to exclusive breastfeeding and early weaning (WHO, 2016).

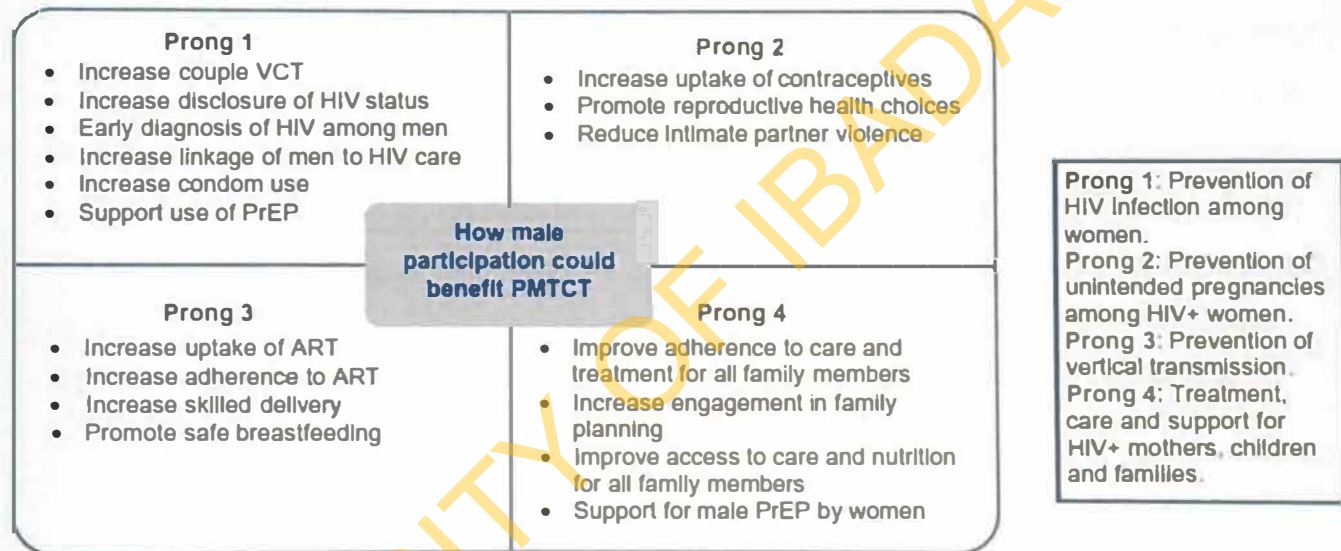


Figure 2.1 Benefits of male partner participation in PMTCT efforts within the WHO comprehensive four-pronged approach to virtual elimination of vertical HIV transmission.

2.5 Factors that Influence Male Involvement in ANC /PMTCT

Several potential factors influencing male involvement in PMTCT were identified. These factors include lack of awareness about PMTCT, educational level, males' negative attitude toward

PMTCT, and fear of testing for HIV, time constraints to attend the antenatal clinics with their spouses, marital problems, stigma, cultural norms, socio-economic factors, health systems, lack of trust and communication within relationship and lack of incentives. The potential factors that associated with male involvement in ANC/PMTCT:

2.5.1. Socio-Cultural and Male involvement

All cultures have values that give meaning and provide guidance to humans as they interact with the social world. Socio-cultural factors relate to male opinion on and perceptions of their role in PMTCT, on women's right to access PMTCT services, on couple communication, counseling and testing, and their potential reactions to a positive HIV test in their female partners.

A number of cultural factors that limit men's ability to take an active role in PMTCT have been documented. A man attending an ANC clinic with his partner is reportedly perceived as weak by society and to avoid being ridiculed, men do not attend ANC clinics (Adeleke et al, 2009). A study conducted in 2011 found that male involvement is inhibited by cultural norms and that antenatal services are not males responsibilities but a womens domain (Kalembo et al., 2012). Similar findings have also been confirmed in 2014 on study on barriers to male involvement in the uptake of PMTCT of HIV in Sub-Saharan Africa where men were reportedly faced with difficult challenges hence their major reason to keep away from involvement in PMTCT programmes (Rebecca et al., 2010).

Men have the believe that ANC / PMTCT is culturally a woman's activity and is exclusively for women and that only weak men, controlled by their partners, visit such clinics and this has led to gender-based stigma (Reece et al., 2010). Social and cultural beliefs are reported in Kenya as a factor hindering men from actively participating in PMTCT. Men have a perceived superiority complex, which dictates that they would be lowering their dignity and self-esteem by accompanying their wives to health facilities (Ongweny-Kidero, 2014). Gender roles and a man's identity as the head of the house, rooted in the notion of masculinity, are found to inhibit males in the PMTCT programme in Nigeria, because these services target women, and when the men are to attend these programmes, this would undermine their position and masculinity (NACA, 2011).

2.5.2 Socio-economic factors and male involvement in the PMTCT

PMTCT services are offered free of charge in all Sub-Saharan African countries, the indirect cost of transport and the loss of income while waiting for long hours at the clinic are so high that many males are not encouraged to attend. (Avert, 2015).

In Nigeria, men are reported to have no time to attend ANC with their partners since they utilise the time to source money to take care of their families (Fagbamigbe & Idemudia, 2015). In South Africa and Uganda; distance, poor roads, undeveloped transport systems, and the cost of getting to the hospital prevented men from being involved in the PMTCT, since most of them have few resources to travel and live a distance from the clinic or a hospital (Nkuoh et al., 2010). In Cameroon men complain of high ANC and obstetric care bills, overbearing demand of their wives for ANC money, and long waiting hours at the health facilities as obstacles to their participation in PMTCT (Kalembo et al., 2012).

Traditionally, males are the bread-winners of the household, and any work hours lost in a day are likely to cost the family much-needed income and related to socio-economic factors is the time factor which seems to be another reason why men are not participating in the PMTCT. In South Africa, Nigeria, and Zambia waiting time during the provision of the service is cited as a barrier to male involvement in the PMTCT. Men are reported to be unwilling to wait for long hours at the health facility (Adelekan et al, 2014; Anigilájé et al., 2016; Auvinen et al., 2010; Makoni et al., 2016b). Men would have loved to attend the clinic with their partners but are too busy to wait while they have jobs to do and that the requirements of men's jobs make it difficult to accompany their wives to PMTCT appointments, particularly the perception that an extended amount of time would be consumed at the clinic.

2.5.3 Health System Related Factors

The PMTCT programmes are not friendly and accessible to males. In Uganda men were excluded from the session where their wives were examined and had to wait outside without any information about what was happening to their pregnant wives. (Byamugisha *et al.*, 2010)

Lack of adequate space in the antenatal clinics coupled with shortage of health workers and an increase in women attending antenatal care discourage men from attending ANC with their

spouses since they have to wait for a long time before they are attended to (Kalembo et al., 2012). Furthermore, health workers mistreatment of the spouses made them feel uncomfortable and embarrassed (Theuring et al., 2009).

Stigma and lack of confidentiality on the service provision hinder men's from seeking services. A study conducted in rural western Uganda, AIDS related stigma and lack of confidentiality created barriers to seeking VCT among men. More than half of the men feared to test for HIV because of stigma. Men were worried of being labelled HIV-infected because they would lose their social privileges. They expressed fear of meeting familiar people in HIV testing clinics, and preferred to test in distant clinics where they were not known by the staff (Bwambale et al., 2008; Byamugisha et al., 2010a).

Some study also reported that the negative attitudes of health care providers discouraged them to actively participate in these services (Ongweny-Kidero, 2014). A systematic review has also identified barriers and facilitators of male participation in the PMTCT of HIV and ANC services as being male unfriendly, lacking in customer care and attention to male partners, and not trusting the health system confidentiality (Badalà et al, 2008). In the same study, ANC services are reportedly not supportive of men that their presence at ANC are not recognized and respected by the health professionals and other pregnant women attending the clinic. Most of the workers at ANC clinics are female nurses who do not openly share information about reproductive health with men (Ongweny-Kidero, 2014) This is an issue that could have probably also contributed to the disparity of the knowledge among men as they are not well motivated to attend ANC where information on the PMTCT is easily accessed.

Another major important factor related to PMTCT programming that affect men's involvement in the PMTCT turns out to be health education songs. Men reportedly state that nurses expect them to sing along with their spouses before the PMTCT service providers start their work. This makes them feel embarrassed, uncomfortable, and they are brand the whole thing as childish (Bhardwaj et al, 2015). As a result, male participation on the program is very low and the male involvement as the key component for achievement of the programme is minimal.

2.6 Theoretical Framework

2.6.1 Social Network Theory (SNT)

The social network theory will be used as a frame work to guide the study to address social behavior through relationship and appreciates that HIV risk behavior, unlike many other health behaviors, directly involves two people.

With respect to sexual relationships, social networks focus on both the impact of selective mixing (i.e. how different people choose who they mix with), and the variations in partnership patterns (length of partnership and the overlap). Although the intricacies of relations and communication within the couple, the smallest unit of the social network, is critical to the understanding of HIV transmission in this model, the scope and character of one's broader social network, those who serve as reference people, and who sanction behavior, are key to comprehending individual risk behavior (Auerbach, 1994).

Social network shows how networking help people cope with stressful events and it provides different types of support.

- Emotional support which is associated with sharing life experiences. It involves the provision of empathy, love, trust and caring.
- Instrumental support involves the provision of tangible aid and services that directly assist a person in need. It is provided by close friends, colleagues and neighbors.
- Informational support involves the provision of advice, suggestions, and information that a person can use to address problems.
- Appraisal support involves the provision of information that is useful for self-evaluation purposes: constructive feedback, affirmation and social comparison.

Social relationships have a great impact on health education and health behavior. Social Networks Theory is especially relevant to women's HIV status disclosure, which has been associated with significant improvements in PMTCT utilization (Peltzer et al., 2011; Theuring et al., 2009).

Ujiji et al. (2011) found that the type of relational ties that exist between the HIV pregnant woman and her network determines disclosure of an HIV diagnosis. Social influence describes how the actions of others affect women's thoughts and actions towards PMTCT (Glanz et al., 2008). Lastly, social undermining is the expression of negative affect or criticisms from others that may hinder pregnant women's utilization of PMTCT. For example, pregnant women are often reluctant to disclose HIV status for fear of family exclusion (Msellati, 2009). Social stigma and discrimination are widely discussed as perceived barriers to PMTCT. In addition, fear of partner's reaction or fear of violence/conflict with the woman's partner may also prevent women from utilizing these services. Thus, theories regarding social networks and social support are useful in understanding the interpersonal influences on HIV-positive pregnant women's decision-making and health-seeking behaviors.

2.7 Conceptual framework factors affecting male involvement in ANC and PMTCT

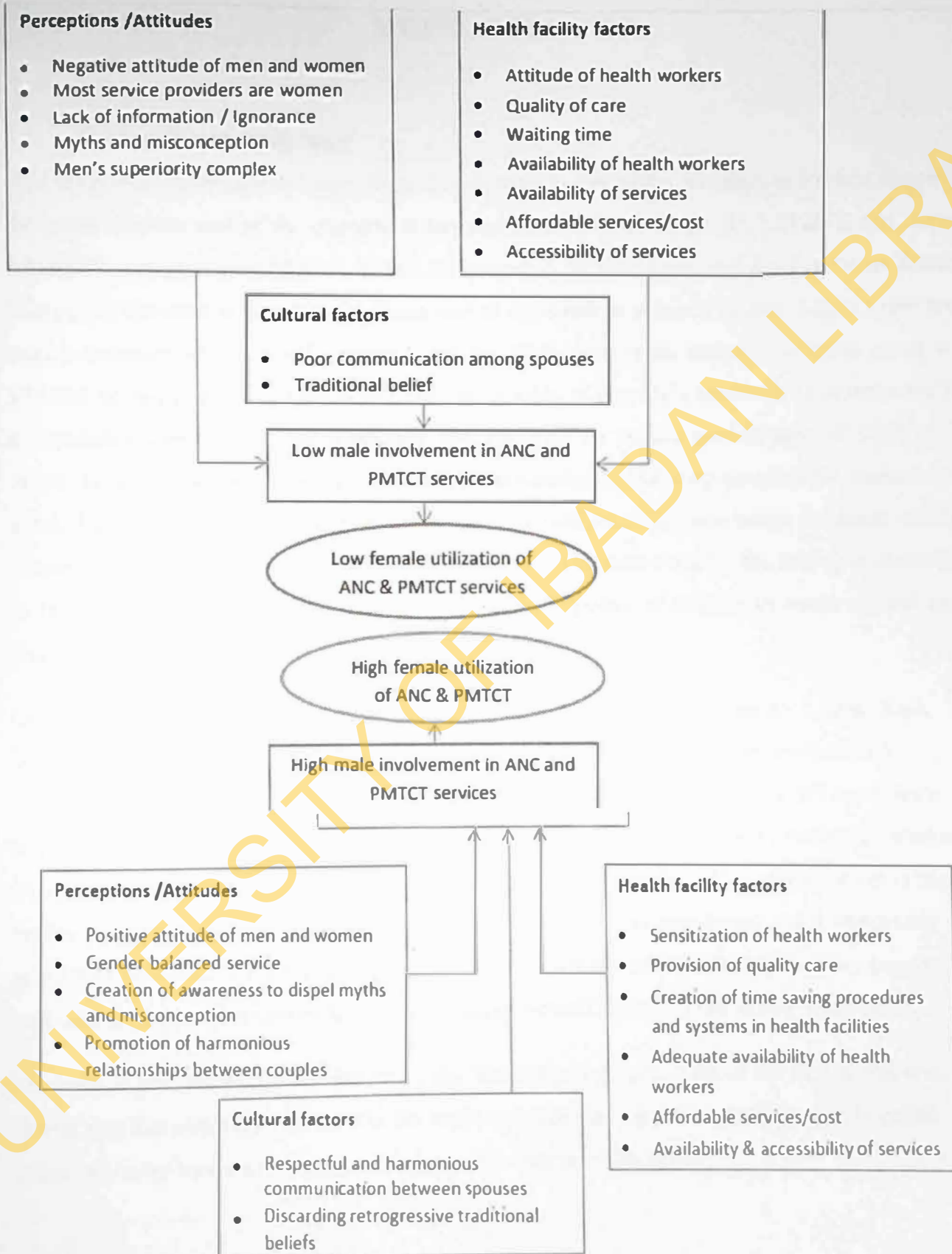


Figure 2.2: SOCIAL NETWORK THEORY FRAMEWORK

CHAPTER THREE

METHODOLOGY

3.1 Description of study area

The study was conducted in Lagos State. Lagos State is one of the 36 states in Nigeria located in the south western part of the country. It lies approximately on longitude 3.2128°E and latitude 6.5192°N respectively (LSMOH, 2016). Its boundary in the North and East is Ogun State of Nigeria, to the west is Republic of Benin and to the south is Atlantic Ocean. Lagos State has a total population of 9,113,605 according to the 2006 population census, occupies an area of 358,862 hectares or 3,577sq.km which represents 0.4% of Nigeria's territorial land mass and has a population density of 2,593.5 persons per km² with an annual growth rate of 3.2% (NPC, 2015). However, according to the parallel count conducted by the state government carried out in 2006, Lagos State has a total population of 17.5 million. The population pregnant mothers constitute 4.1% of the total population of Lagos State. The state remains the most populous State in Nigeria but also the smallest State in the Federal Republic of Nigeria in terms of land space (Akinkuotu, 2015).

Lagos is a metropolitan city made up of five administrative division - Lagos, Ikeja, Ikorodu, Epe and Badagry which were created in May 1968 by virtue of promulgation of Administrative Divisions (Establishment) Edict No . 3 of April 1968. (*History of Lagos State*, n.d.). In line with the nation's three-tier federal structure, the divisions were further divided into 20 Local government area (LGA), 4 of which are rural and 16 urban. This stratification is based on the availability of social amenities and infrastructure such as pipe borne water, electricity and good road networks. Lagos State is divided into three senatorial district, Lagos west, Lagos East and central and has the twenty Local Government Areas(LGAs) spread across each them.

The state is predominantly dominated by the Yoruba which comprises of the Eguns, Aworis, Ijebus, and Egbas(Eades, 1980). It is the socio-cultural melting pot attracting other Nigerian tribes, minority tribes and foreigners from various parts of the world.

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The study was conducted in Lagos State. Lagos State is one of the 36 states in Nigeria located in the south western part of the country. It lies approximately on longitude 3.2128°E and latitude 6.5192°N respectively (LSMOH, 2016). Its boundary in the North and East is Ogun State of Nigeria, to the west is Republic of Benin and to the south is Atlantic Ocean. Lagos State has a total population of 9,113,605 according to the 2006 population census, occupies an area of 358,862 hectares or 3,577sq.km which represents 0.4% of Nigeria's territorial land mass and has a population density of 2,593.5 persons per km² with an annual growth rate of 3.2% (NPC, 2015). However, according to the parallel count conducted by the state government carried out in 2006, Lagos State has a total population of 17.5 million. The population pregnant mothers constitute 4.1% of the total population of Lagos State. The state remains the most populous State in Nigeria but also the smallest State in the Federal Republic of Nigeria in terms of land space (Akinkuotu, 2015).

Lagos is a metropolitan city made up made up of five administrative division - Lagos, Ikeja, Ikorodu, Epe and Badagry which were created in May 1968 by virtue of promulgation of Administrative Divisions (Establishment) Edict No . 3 of April 1968. (*History of Lagos State*, n.d.). In line with the nation's three-tier federal structure, the divisions were further divided into 20 Local government area (LGA), 4 of which are rural and 16 urban. This stratification is based on the availability of social amenities and infrastructure such as pipe borne water, electricity and good road networks. Lagos State is divided into three senatorial district, Lagos west, Lagos East and central and has the twenty Local Government Areas(LGAs) spread across each them.

The state is predominantly dominated by the Yoruba which comprises of the Eguns, Aworis, Ijebus, and Egbas(Eades, 1980). It is the socio-cultural melting pot attracting other Nigerian tribes, minority tribes and foreigners from various parts of the world.

The State is the commercial and industrial hub of Nigeria and enjoys a concentration of over 70% of commercial and business activities in the country with over 2000 manufacturing industries and 200 financial institutions.

The State has two teaching hospitals, a Federal Medical Centre, twenty-five general Hospitals, two hundred and seventy-six primary health centers (PHC) which is spread across the twenty-three LGAs in the state. Each LGA has one PHC which is designated to provide counseling and PMTCT services to pregnant women and several privately owned health facilities. In total Lagos state has 56 PMTCT centers across primary, secondary and tertiary facilities. The PMTCT services in Lagos state is sponsored by UNICEF and FHI. The study was conducted in PMTCT centers in secondary facilities in Lagos state due to large catchment of the study population.

3.2 Study design

This was a facility-based, descriptive cross-sectional study on Male Partner Involvements in the context of Prevention of Mother to Child transmission. The study extended over a period of three months from March – May, 2017. The study was a mixed-method that utilized both quantitative (questionnaire) and qualitative (Focus Group Discussion) data collection methods.

3.3 Study Population

The study population consisted of HIV positive pregnant women attending ARV clinic and have a male partner during the data collection period, where “partner” was defined as a primary sexual partner.

3.3.1 Inclusion criteria

HIV positive women

- A positive woman in her reproductive age between 15-49 years of age, pregnant and attending ARV clinic.
- A positive woman living together with her male partner in the study area.

3.3.2 Exclusion Criteria

HIV positive pregnant women with no male partner.

3.4 Sample size estimation

Sample size was calculated using the formula with the assumption of 95% confidence level (z), 5% precision (d), and 25% proportion of women with male partner involvement in PMTCT(p) (Staveteig *et al*, 2013).

$$n = \frac{(Z_{\alpha})^2 \times p \times q}{d^2}$$

where:

Z_{α} = the standard normal deviate set at 1.96 which corresponds to the 95% confidence level

p = proportion of the women with male partner involvement which was 25% (Staveteig, et all, 2013)

q = 1-p = 1.0 - 0.25 = 0.75

α = desired level of significance of 5%

N = desired sample size

$$\begin{aligned} n &= \frac{(Z_{\alpha})^2 \times p \times q}{d^2} \\ &= \frac{1.96^2 * .25 * 0.75}{0.05^2} \\ &= 288 \end{aligned}$$

Adjusting for a 10% Non-response rate (r)

$$N_{\text{new}} = N / (1 - 0.10)$$

$$\text{Non-response rate} = 288 / 0.9$$

$$= 320$$

Therefore, total sample size = 320.

3.5 Sampling technique

Multi-stage sampling was used for the selection of study participants

Stage 1: Selection of Local Government Areas

There are twenty local government areas across the three senatorial districts in Lagos State. Selection of one local government area each from the three senatorial districts by simple random sampling via balloting: Ikeja, Surulere and Lagos Island local government area selected.

Stage 2: Selection of Wards

Two wards each was selected from the list of wards from each of the selected local government area by simple random sampling by balloting. Selection of Ogunsanmi / karounwi and Gbaja /Obele Odan wards, Ajara vedo and Posukoh wards and Onilekere and Oke- ira central wards in Surulere, Lagos Island and Ikeja LGAs respectively.

Stage 3: Selection of facilities

Selection of one facility was done in each ward selected, ward without any facility was skipped and another one chosen.

Oke-ira central ward - General hospital, Ikeja

Ajara vedo central ward – Lagos Island Maternity Hospital, Lagos Island

Gbaja ward – Mother and Child Hospital, Gbaja.

Stage 4: Selection of study participants

In each facility selected, proportional allocation technique of the sample sizes was done to the selected facilities based on the population of each ANC/PMTCT clients.

PMTCT FACILITIES	Total number of clients	Ratio of the three facilities	Respondents per facility
General hospital Ikeja	180	$180/600 = 0.30$	96
Lagos Island Maternity	250	$250/600=0.42$	134
Mother and child hospital, Gbaja	170	$170/600 = 0.28$	90
Total	600		320

Focus Group Discussion

The participants for the Focus Group Discussion (FGD) were selected by purposive sampling with the aid of the facility health worker, with the criteria being of HIV positive women attending ARV clinic who is pregnant and have a male partner during the data collection period, that was willing to share experiences of their male partners during pregnancy, issues surrounding HIV testing and their communication behavior – disclosure of their HIV status. Participants were invited across the three health facilities in each of the three LGAs. One Focus Group Discussion (FGD) was conducted in each selected facility, with an average of six to twelve persons participating in each Focus Group Discussion (FGD). A total of three FGD was conducted.

3.6 Data collection method and instruments

Research assistant were trained on the data collection and interview techniques while clinic staffs providing PMTCT services assisted in order to identify the eligible participants during antenatal clinic. Interviewer administered structured questionnaire was used to collect the data. The questionnaire was divided into 7 sections which included socio-demographic characteristics; history of pregnancy, antenatal care, HIV testing and ARV use; knowledge of HIV transmission and prevention; Knowledge of PMTCT (UNGASS, 2000 Indicator 8 items); PMTCT adherence; HIV related communications and disclosure; level of male partner involvement.

3.6.1 Study variables

The following variables were assessed in the study

Outcome variables:

- Male Partner involvement
- Adherence to ARV drugs
- Disclosure of HIV status to partners

Independent variables:

- Socio-demographic characteristics of the respondents: age, religion, marital status, educational status, occupation, monthly income, age of marriage, duration of stay together.
- History of pregnancy, antenatal care, HIV testing and ARV drug: number of weeks of the pregnancy, gravidity, any previous HIV positive child, age tested positive.
- Knowledge of HIV, Knowledge of PMTCT, discussion on HIV.

3.7 Focus Group discussion guide

Focus group interview guide was used to explore issues on factors surrounding HIV testing and disclosure, a broader explanation of MPI in PMTCT and pregnancy as well as their view of couple counseling and testing for HIV.

Focus group guide was adapted from a study on male partner involvement during pregnancy: The missing component in PMTCT adherence in Khayelitsha, Cape Town.

3.8 Data management Technique

Data were entered, cleaned and analyzed using Epi info version 7.2.1. Proportions, means and standard deviations were used to summarize the data. Data was disaggregated based on age into groups of ≤ 15 , 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45+.

Knowledge of HIV and PMTCT were scored using UNGASS scoring where a score of 1 was assigned to every correct response and a score of 0 was assigned to an incorrect response or I don't know response for the knowledge items. The sum of the scores was determined. The total

maximum obtainable score is 8 and 10 respectively respondents with maximum obtainable score – those that identified correct response to all the items were referred to as having “good” knowledge while those that provided incorrect response to at least one knowledge item were referred to as having “poor” knowledge (UNGASS, 2010).

Male Partner involvement was determined by using a range of activities based on previous published research by Byamugisha et al, which included:

- Partner providing financial support for respondents’ antenatal visits
- Partners know when respondents’ antenatal visits are due
- Partners remind respondent of their antenatal visits
- Partners accompany respondents to ante natal care visit
- Partner freely discuss what happens during antenatal visits
- Partners remind respondents to take ARV
- Partners freely discuss PMTCT with respondent (Byamugisha et al., 2010).

The number of activities that partners report was summed to calculate an MPI score, such that 0–4 indicated low and 5–7 indicated high involvement. (Byamugisha et al, 2010)

Disclosure was reported into binary categorization of disclosure (yes) and non-disclosure (no). Adherence was measured using questions based on the NIAID clinical trial group adherence interview (NIAID,2010). Level of HIV related discussions were assessed too with a series of 3 questions:

- Have you ever discussed HIV testing with your partners?
- Have you ever discussed ways to prevent partner transmission of HIV with the father of your unborn child?
- Have you ever discussed ways to prevent transmitting HIV to your unborn child with the father of your child?

A score of 1 was assigned to every yes response, a discussion score was calculated by summing the number of topics the participant had discussed with her partner (maximum of 3). A score of 0-2 indicated low level of discussion and a score of 3 indicated a high level discussion (Brittain et al., 2015).

A FGD guide was developed on four thematic areas to obtain similar information but more in-depth. Focus group disclosure was digitally recorded.

Chi square test was used to investigate associations between MPI and selected explanatory variable, as well as variables which were associated with other outcomes. The associations that were significant with a p-value less than 0.05 were considered statistically significant. Chi-square findings which showed significant association were further analyzed using logistic regression to measure strength of the association and to identify independent factors that influence male partner involvements among HIV positive pregnant women attending PMTCT services in Lagos state. Three logistic regression models were built, one in which the outcome was disclosure, adherence and the other with male partner involvements outcome. Hosmer Lemeshow test was used to assess model fit. Variables that had been significantly associated with each of the outcomes in bivariate analysis were included in the logistic regression models. All analyses were done at the 5% level of significance.

The FGD data were transcribed and analyzed using thematic analysis.

3.9 Ethical consideration

Ethical approval was obtained from the Health Research and Ethics Committee, Lagos State University Teaching Hospital, and also social approval was also obtained from the Ministry of Health, Alausa. Approval was also obtained from each facility used from the Medical Director in charge of each health facilities. Participation was voluntary after each respondent has received detailed information on the purpose of the study. Then a written informed consent was obtained from each respondent before questionnaires were administered. Name and addresses were not included in the data collection instruments and thus the collected data cannot be linked to any individual person.

CHAPTER FOUR

RESULTS

4.2 Sociodemographic characteristics among participants and partners

Three hundred and twenty HIV positive pregnant women participated in the study, while 26 women from the same population participated in the Focus group discussion (FGDs).

Detailed sociodemographic characteristics of these participants are presented in Table 1.

The mean age for participants and partners were 31.1 ± 4.6 years and 36.7 ± 5.1 years respectively. Majority (98.3%) of the respondents was married and the highest level of education attained was tertiary education – 55.3% of the respondents and 65.6% of the respondents' partners' attained tertiary education. Yoruba ethnic group were the majority of the participants (61.6%) and their partners, 64.4% were Christians. Almost half of the respondents were business owners and 59.7% earned less than #50,000 as monthly income as compared to their partner where majority of them earned between #50,000-#99000. About 72% were married by age 20-29yrs. The mean age of marriage was 27.03 ± 3.96 yrs and 32.61 ± 4.64 yrs for their partners. Over half of the respondents were married for less than five years with a mean length of marriage of 4.46 ± 3.36 yrs.

Table 4.1a: Frequency Distribution of Participants' and partner characteristics

Variable	Respondents		Partners	
	Frequency (N=320)	Percentage (100%)	Frequency (N=320)	Percentage (100%)
Age				
15-19	1	0.3	0.0	0.0
20-24	22	6.9	0.0	0.0
25-29	90	28.1	12	3.8
30-34	136	42.5	97	30.3
35-39	59	18.4	118	36.9
40-44	9	2.8	71	22.2
45+	3	0.9	22	6.9
Education				
No formal Education	1	0.3	2	0.6
Primary education	31	9.7	12	3.8
Secondary Education	111	34.7	96	30.0
Tertiary Education	177	55.3	210	65.6
Marital Status				
Married	308	96.3	308	96.3
Cohabiting	12	3.7	12	3.7
Religion				
Christian	206	64.4	198	61.9
Muslim	113	35.3	121	37.8
Traditional	1	0.3	1	0.3
Ethnicity				
Yoruba	197	61.6	187	58.4
Igbo	90	28.1	85	26.6
Hausa	8	2.5	9	2.8
Others	25	7.8	39	12.2
Occupation				
Daily labour	19	5.9	35	10.9
Formal employment	65	20.3	95	29.7
Business owner	147	45.9	173	54.1
Housewife	53	16.6	0	0.0
Student	22	6.9	4	1.3
Others	14	4.4	13	4.1

Table 4.1b: Frequency Distribution of Participants' and partner characteristics

Variable	Respondents		Partners	
	Frequency (N=320)	Percentage (100%)	Frequency (N=320)	Percentage (100%)
Income				
<50000	191	59.7	55	17.2
50000-99000	51	15.9	117	36.6
≥100000	9	2.8	59	18.4
I don't know	69	21.6	89	27.8
Age at marriage				
<20	7	2.2	1	0.3
20-29	229	71.6	72	22.5
≥30	84	26.3	247	77.2
Length of marriage				
<5	191	59.7	193	60.3
5-9	96	30.0	94	29.4
10-14	28	8.8	28	8.8
≥15	5	1.6	5	1.6
Duration of living together				
<5	176	55.0	178	55.6
5-9	109	34.1	107	33.4
10-14	29	9.1	29	9.1
≥15	6	1.9	6	1.9

Table 4.1b: Frequency Distribution of Participants' and partner characteristics

Variable	Respondents		Partners	
	Frequency (N=320)	Percentage (100%)	Frequency (N=320)	Percentage (100%)
Income				
<50000	191	59.7	55	17.2
50000-99000	51	15.9	117	36.6
≥100000	9	2.8	59	18.4
I don't know	69	21.6	89	27.8
Age at marriage				
<20	7	2.2	1	0.3
20-29	229	71.6	72	22.5
≥30	84	26.3	247	77.2
Length of marriage				
<5	191	59.7	193	60.3
5-9	96	30.0	94	29.4
10-14	28	8.8	28	8.8
≥15	5	1.6	5	1.6
Duration of living together				
<5	176	55.0	178	55.6
5-9	109	34.1	107	33.4
10-14	29	9.1	29	9.1
≥15	6	1.9	6	1.9

4.2 Pregnancy, antenatal care and HIV testing among respondents

Most of the participants (60.9%) had been pregnant before this current pregnancy and about half (53.4%) were in their second trimester as at the time of the study and half the respondents 51.9% registered for antenatal clinic during their first trimester. Most of the current pregnancies were unplanned (88.7%) and about 7.5% had a previous positive child. About 57.5% of the participants knew their HIV status prior to this current pregnancies and majority (43.1%) were tested between 25-29 years of age and the mean age of HIV testing was 24.4 ± 3.85 yrs (Table 2).

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Table 4.2: HISTORY OF PREGNANCY, ANTENATAL CARE AND HIV TESTING AMONG THE RESPONDENTS

Variables	Frequency N=320	Percentage 100%
Gestational age of current pregnancy		
First trimester	11	3.4
Second trimester	171	53.4
Third trimester	138	43.1
Gestational age of current pregnancy at booking		
First trimester	166	51.9
Second trimester	146	45.6
Third trimester	8	2.5
Gravidity		
First Pregnancy	125	39.1
Not First	195	60.9
Previous positive child		
Yes	24	7.5
No	296	92.5
Number of positive children		
1	7	30.4
More than 1	16	69.6
HIV test done		
During this pregnancy	136	42.5
Before this pregnancy	184	57.5
Age tested positive		
<20	33	10.3
20-24	117	36.6
25-29	138	43.1
30-34	29	9.1
≥35	3	0.9

4.3 Knowledge of HIV and PMTCT among respondents

HIV was assessed using 12 knowledge items as shown on Table 4.3.1 below on three thematic areas: knowledge of mode of transmission, prevention of transmission and HIV/AIDS related beliefs and PMTCT knowledge was assessed using 8 indicator knowledge items. On mode of transmission, 264 (82.5%) of the respondents disagreed with mosquito bites as a mode of transmission of HIV while 269 (84.1%) agreed that regular use of condom prevents transmission of HIV and two sixty-six (83.1%) respondents indicated that HIV/AIDS has no cure.

Almost all (92.5%) respondents had poor knowledge of HIV transmission and prevention, mean score of HIV knowledge was 13.6 ± 1.97 . Knowledge of PMTCT among participants was also poor for majority of the respondents (80%) while 20% had good knowledge of what PMTCT is all about, with a mean score of 6.8 ± 1.88 shown on Tables 4.3.2 and 4.3.3.

Table 4.3.1a Knowledge of HIV/AIDS and PMTCT among respondents

N = 320	Correct (%)	Incorrect (%)
Mode of Transmission		
Mosquito bites	56 (17.5)	264 (82.5)
Sharing plates and cutleries	82 (25.6)	238 (74.4)
Unprotected sex	304 (95.0)	16 (5.0)
Unscreened Blood transmission	310 (96.9)	10 (3.1)
Mother to child transmission	258 (80.6)	62 (19.4)
Sharing needles and syringes	307 (95.9)	13 (4.1)
Multiple sexual partners	309 (96.6)	11 (3.4)
Sharing razor blades	280 (87.5)	40 (12.5)
Prevention of transmission		
Abstinence	302 (94.4)	18 (5.6)
Regular condom use	269 (84.1)	51 (15.9)
Fidelity	295 (92.2)	25 (7.8)
HIV related beliefs		
AIDS is curable	54 (16.9)	266 (83.1)
Carrier can be known by look	30 (9.4)	290 (90.6)

Table 4.3.1b: Knowledge of HIV/AIDS and PMTCT among respondents

Knowledge of PMTCT	N = 320	
	Correct (%)	Incorrect (%)
HIV can be acquired while pregnant	254 (79.4)	66 (20.6)
Transmit HIV to unborn child during pregnancy	209 (65.3)	111 (34.7)
Transmit HIV to unborn child during delivery	241(75.3)	79 (24.7)
Transmit HIV to unborn child during breastfeeding	257 (80.3)	135 (42.2)
ARV prevents MTCT	185 (57.8)	135 (42.2)
Heard of PMTCT before	320 (100.0)	0 (0.0)
PMTCT is partners HCT together	166 (51.9)	154 (48.1)
PMTCT is mothers HCT only	107 (33.4)	213 (66.6)

Table 4.3.2: KNOWLEDGE OF HIV & PMTCT TRANSMISSION/PREVENTION AMONG RESPONDENTS

Knowledge of HIV	Frequency N=320	Percentage
Good	24	7.5
Poor	296	92.5
Total	320	100.0
KNOWLEDGE OF PMTCT		
Good	64	20.0
Poor	256	80.0
Total	320	100.0

Mean HIV/AIDS knowledge score 13.6 ± 1.97 ; Mean PMTCT knowledge score 6.8 ± 1.88

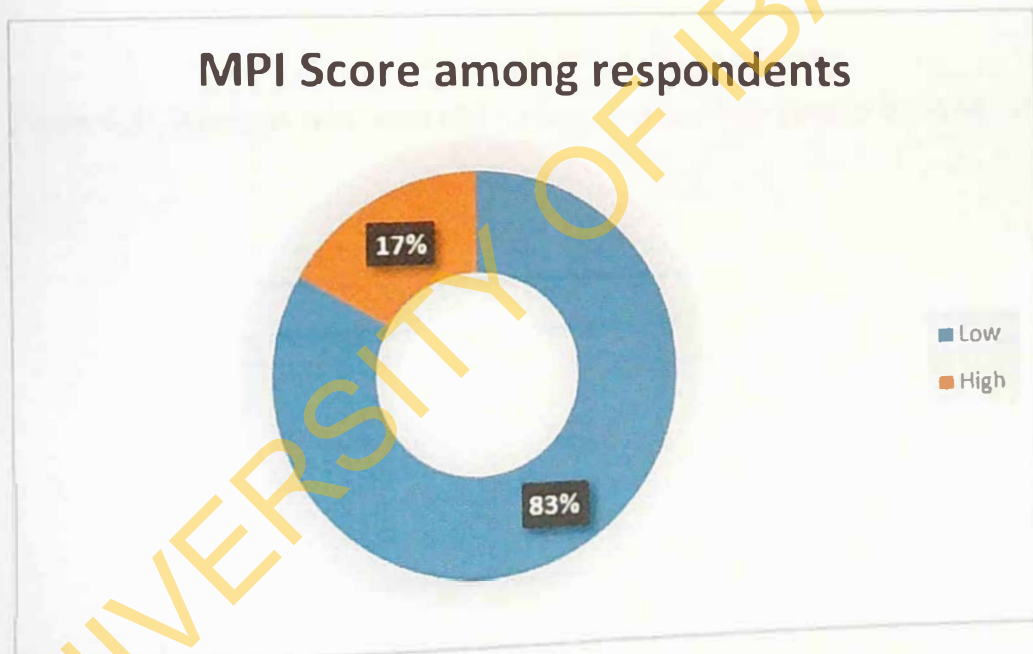
4.4 Male Partner Involvement among respondents

The level of male involvements was assessed using the variables shown in Table 4.4.1. Only 39.1% of men had accompanied their partners to ANC which was mainly for the first antenatal visit. Reasons for men accompanying their partner for ANC were given in Figure 4.2.

The reasons reported by respondents were: Men had to go to work (37.2%) and ANC is seeing as a woman's problem (19.4%) as well as the time spent at the health facilities (15%) Figure 4.2. Almost all (92.5%) men provided generous financial support to their spouses to attend ANC, 63.4% knew when their partners ANC visits were due and 56.3% reminded their partners of ANC. The majority of respondents (70%) do not freely discuss what happened during ANC with their partners, 76.6% do not remind their partners of their ARV treatment and 78.4% had not asked their partners if they could use condoms during sexual intercourse. Only 16.6% of the respondents had a high male involvement. The mean MPI score was 3.26 ± 1.38 (Figure 4.1).

Table 4.4.1: Frequency distribution of level of male involvement among respondents

MALE INVOLVEMENT (N = 320)	Yes N(%)	NoN(%)
Accompanies partner to antenatal visits	125(39.1)	195(60.9)
Partners provide financial support for ANC visits	296(92.5)	24(7.5)
Partners know when ANC visits are due	203(63.4)	117(36.6)
Partners remind respondents of ANC visit	180(56.3)	140(43.7)
Freely discusses what happens during ANC	96(30.0)	224(70.0)
Remind respondents of ARV drugs	75(23.4)	245(76.6)
Discusses ways to prevent PMTCT respondents	69(21.6)	251(78.4)



Mean MPI score 3.26+1.38

Figure 4.1 Male Partner Involvement score among respondents

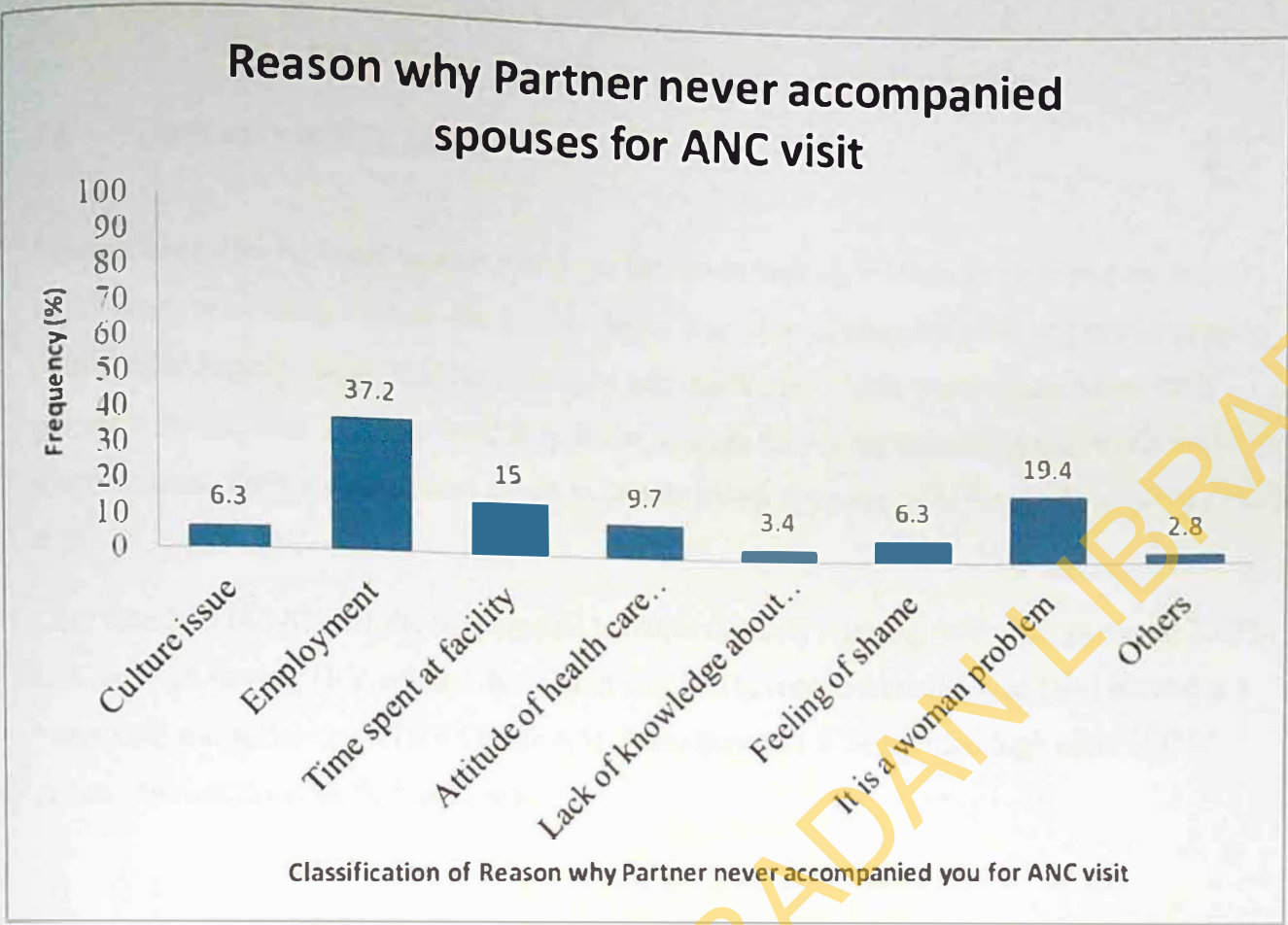


Figure 4.2: Reasons why men did not accompany their partner for ANC visits

4.5 Disclosure of HIV Status

Respondents who reported that they had not disclosed their HIV status to their partner were 55.3% and the reasons for non-disclosure ranges from fear of abandonment, stigmatization at matrimonial home, fear of violence. Despite non-disclosure 76.3% participants knew their partners' status, with 18% reported they knew because they were tested together while majority knew because their partners were asked to donate blood as a prerequisite for ANC booking (Table 4.5).

Less than half (43.8%) of the participants had discussed HIV testing with their partners, 35.7% had reported having HIV-related discussion and 34.1% reported having discussed preventing horizontal transmission of HIV (Table 4.5). Participants 21.6 % reported high rates of HIV related discussion with their partners.

Table 4.5 HIV TESTING, DISCUSSION AND DISCLOSURE OF STATUS TO PARTNERS AMONG RESPONDENTS

Variables	Frequency (N=320)	Percentage (%)
Disclosure of HIV status to partners		
Yes	143	44.7
No	177	55.3
HIV status disclosed		
Before current pregnancy	69	37.3
During current pregnancy	116	62.7
Knowledge of partner HIV status		
Yes	244	76.3
No	76	23.8
Route of knowledge of partner HIV status		
He told me	59	24.2
We were tested together	44	18.0
Others	141	57.8
Respondent's Partners HIV status		
Positive	23	9.5
Negative	220	90.5
Participants discussed testing with partners		
Yes	140	43.8
No	180	56.3
Participants discussed HIV prevention with partners		
Yes	114	35.7
No	205	64.3
Participants discussed PMTCT with partners		
Yes	109	34.1
No	211	65.9
Discussion score		
Low	251	78.4
High	69	21.6

Mean of discussion is 1.13+1.25

4.6 Adherence to ARV Therapy among respondents

All the respondents were on ARV, 68.4% of the participants had been on ARV before this current pregnancy and most participants 75.9% were on fixed dose combination of ARV and a single daily dose. 61.9% of the respondent reported they had never missed a dose of ARV in the last 30 days and 55% of respondents reported complete adherence during this current pregnancy (Table 4.6) while the 45% who reported ever missed their ARV during this current pregnancy gave reasons such as travelling out of state and did not travel with their ARV, and forgot medication due to newly initiated and were not yet accustomed as the major reasons for non adherence Fig 4.3.

Table 4.6: ARV DRUGS ADHERENCE AMONG RESPONDENTS

Variable	Frequency	Percentage
ARV commenced before this current pregnancy		
Yes	219	68.4
No	101	31.6
ARV regimen at the time of interview		
Short course AZT	7	2.2
Life – long ART	70	21.9
Fixed dose combination	243	75.9
No of doses missed in the last 30 days		
0	198	61.9
1	74	23.1
2	48	15.0
Complete adherence during current pregnancy		
Yes	144	45.0
No	176	55.0

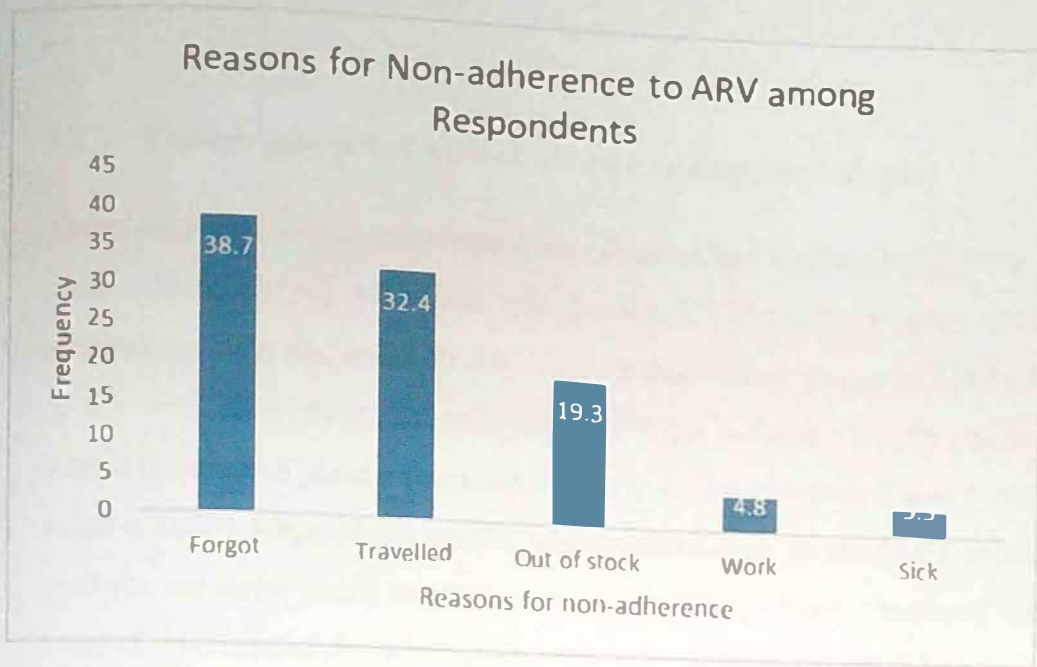


Figure 4.3: Reasons for Non-adherence to ARV among Respondents

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4.7 Factors associated with disclosure among respondents

About 46.5% of respondents who were educated had disclosed their HIV status to their partner as compared to 53.5% who had not disclosed ($X^2= 3.9$; p-value <0.000). About 75.0% of respondents who had been on ARV before this current pregnancy ($X^2= 30$; p-value <0.000) and 52.5% who knew their partner's status ($X^2= 25$; p-value <0.000), as well as 18% respondents with HIV positive partners were more likely to disclose their status to their partners ($X^2= 6.7$; p-value <0.000), respondents 68.0% who reported high level of HIV related discussion with their partners are more likely to disclose status to their partners compared with 42.0% who had low level of HIV related discussion ($X^2= 103.5$; $P < 0.000$) (Table 4.7.1).

In a multiple logistic regression model (Table 4.7.2), respondents who had been on ARV drugs before this current pregnancy predicted disclosure. Those who had been on ARV drug were four times (AOR 4.29; CI: 2.167-8.524) more likely to disclose their HIV status to their partners as compared to those who had not taken the drug before as well as those with low level of HIV discussion with partners were over ten times (AOR 0.007; CI: 0.001-0.055) less likely to disclose their HIV status to their partners.

Table 4.7.1a: FACTORS ASSOCIATED WITH DISCLOSURE AMONG THE RESPONDENTS

Variables	DISCLOSURE			X ²	p-Value
	Yes	No	Total		
Age					
15-30	66(45.8)	78(54.2)	144(100.0)	0.1	0.71
31+	77(43.7)	99(56.2)	176(100.0)		
Total	144(45.0)	176(55.0)	320(100)		
Education					
Little/No formal Education	9(28.1)	23(71.9)	32(100)	3.9	0.04
Formal education	134(46.5)	154(53.5)	288(100)		
Total	143(44.7)	177(55.31)	320(100)		
Married	135(43.8)	173(56.2)	308(100)	2.4	0.12
Not married	8(66.7)	4(33.3)	12(100)		
Total	143(44.7)	177(55.3)	320(100)		
Income					
≤50,000	82(42.9)	109(57.1)	191(100.0)	0.3	0.61
50,000+	28(46.7)	32(53.3)	60(100.0)		
Total	110(43.8)	141(56.2)	251(100.0)		
Gravidity					
First Pregnancy					
Yes	57(45.6)	68(54.4)	125(100)	0.1	0.79
No	86(44.1)	109(55.9)	195(100)		
Total	143(44.7)	177(55.3)	320(100)		
Previous positive child					
Yes	11(45.8)	13(54.2)	24(100.0)	0.0	0.91
No	132(44.6)	164(55.4)	296(100.0)		
Total	143(44.6)	177(55.3)	320(100.0)		
ARV before pregnancy					
Yes	75(34.3)	144(65.7)	219(100)	30.0	<0.001
No	68(67.3)	33(32.7)	101(100)		
Total	143(44.7)	177(55.3)	320(100)		
Adherence					
Disclosed	60(41.7)	84(58.3)	144(100)	1.00	0.32

Table 4.7.1a: FACTORS ASSOCIATED WITH DISCLOSURE AMONG THE RESPONDENTS

Variables	DISCLOSURE			X ²	p-Value
	Yes	No	Total		
Age					
15-30	66(45.8)	78(54.2)	144(100.0)	0.1	0.71
31+	77(43.7)	99(56.2)	176(100.0)		
Total	144(45.0)	176(55.0)	320(100)		
Education					
Little/No formal Education	9(28.1)	23(71.9)	32(100)	3.9	0.04
Formal education	134(46.5)	154(53.5)	288(100)		
Total	143(44.7)	177(55.31)	320(100)		
Married	135(43.8)	173(56.2)	308(100)	2.4	0.12
Not married	8(66.7)	4(33.3)	12(100)		
Total	143(44.7)	177(55.3)	320(100)		
Income					
≤50,000	82(42.9)	109(57.1)	60(100.0)	0.3	0.61
50,000+	28(46.7)	32(53.3)	191(100.0)		
Total	110(43.8)	141(56.2)	251(100.0)		
Gravidity					
First Pregnancy					
Yes	57(45.6)	68(54.4)	125(100)	0.1	0.79
No	86(44.1)	109(55.9)	195(100)		
Total	143(44.7)	177(55.3)	320(100)		
Previous positive child					
Yes	11(45.8)	13(54.2)	24(100.0)	0.0	0.91
No	132(44.6)	164(55.4)	296(100.0)		
Total	143(44.6)	177(55.3)	320(100.0)		
ARV before pregnancy					
Yes	75(34.3)	144(65.7)	219(100)	30.0	<0.001
No	68(67.3)	33(32.7)	101(100)		
Total	143(44.7)	177(55.3)	320(100)		
Adherence					
Disclosed	60(41.7)	84(58.3)	144(100)	1.00	0.32

Table 4.7.1b: FACTORS ASSOCIATED WITH DISCLOSURE AMONG THE RESPONDENTS

Variables	DISCLOSURE			X²	p-Value
Not disclosed	83(47.2)	93(52.8)	176(100)		
Total	143(44.7)	177(55.3)	320(100)		
Knowledge of Partner status					
Yes	128(52.5)	116(47.5)	244(100)	25.4	<0.0001
No	15(19.7)	61(80.3)	76(100)		
Total	143(44.7)	177(55.3)	320(100)		
Father status					
Positive	18(78.3)	5(21.7)	23(100)	6.7	<0.0001
Negative	110(50.0)	110(50.0)	220(100)		
Total	128(52.7)	115(47.3)	243(100)		
HIV related discussion					
High	68(98.6)	1(1.45)	69(100)	103.2	<0.00*
Low	75(29.9)	176(70.1)	251(100)		
Total	143(44.7)	177(55.3)	320(100)		
Knowledge of HIV					
Good	17(70.8)	7(29.2)	24(100.0)	7.2	<0.001
Poor	126(42.6)	170(57.4)	296(100.0)		
Total	143(44.7)	177(55.3)	320(100.0)		
Knowledge of PMTCT					
Good	25(39.1)	39(60.9)	64(100.0)	1.0	0.31
Poor	118(46.1)	138(53.9)	256(100.0)		
Total	143(44.7)	177(55.3)	320(100.0)		

*Fisher's exact test value

Table 4.7.2 LOGISTIC REGRESSION ANALYSIS OF FACTORS ASSOCIATED WITH DISCLOSURE AMONG THE RESPONDENTS

Variables	AOR	95% CI LOWER	UPPER	p value
Educational level				
No formal/Little education	0.523	0.169	1.618	0.2609
Formal education(ref)	1.000			
Marital status				
Married	2.043	0.420	9.943	0.376
Not married(ref)	1.000			
Knowledge of partner status				
No	0.208	0.093	0.467	<0.001
Yes(ref)	1.000			
Knowledge of HIV transmission				
Good	0.335	0.110	1.021	0.524
Poor(ref)	1.000			
ARV use before pregnancy				
Yes	4.298	2.167	8.524	<0.001
No(ref)	1.000			
HIV Discussion				
Low	0.007	0.001	0.055	<0.001
High(ref)	1.000			

4.8. Factors associated with adherence among respondents

All participants were on ART, adherence was significantly more likely among the 75.0% respondents with previous HIV positive child before ($X^2=9.4$; $P < 0.05$), among respondents 42.0% who had been of ARV drugs before this current pregnancy ($X^2 =2.5$; $P < 0.05$), among respondents 53.2% who had knowledge of their partner status ($X^2= 28.4$; $P < 0.05$) and among the respondents with good knowledge of HIV transmission ($X^2 = 3.2$; $P < 0.05$). Table 4.8.1.

In a multiple logistic regression model (Table 4.8.2), respondents who had a prior knowledge of partner HIV status and those with a previous positive child predicted adherence to ARV drug use. Those who knew their partners' status were two times (AOR 1.97; CI: 1.043-3.723) more likely to adhere to ARV drug use compared to those who had no prior knowledge of partner HIV status. Also respondents with a previous positive child were three times (AOR 2.707; CI: 1.094-7.370) more likely to adhere to ARV drug therapy than those without a previous positive child.

Table 4.8.1a FACTORS ASSOCIATED WITH ADHERENCE OF ARV DRUGS IN PMTCT

Variables	ADHERENCE			X ²	p-value
	Yes	No	Total		
Age					
15-30	54(47.8)	59(52.2)		0.5	0.46
31+	90(43.5)	117(56.5)			
Total	144(45.0)	176(55.0)	320(100)		
Education					
Little/No formal Education	14(43.8)	18(56.2)	32(100)	0.0	0.90
Formal education	130(45.1)	158(54.9)	288(100)		
Total	144(45.0)	176(55.0)	320(100)		
Married	139(45.1)	169(54.8)	308(100)	0.0	0.8
Not married	5(41.7)	7(58.3)	12(100)		
Total	144(45.0)	176(55.0)	320(100)		
Gravidity					
First Pregnancy					
Yes	54(43.2)	71(56.8)	125(100)	0.3	0.60
No	90(46.2)	105(58.8)	195(100)		
Total	144(45.0)	176(55.0)	320(100)		
Previous positive child					
Yes	18(75.0)	6(25.0)	24(100.0)	9.4	0.00
No	126(42.6)	170(57.4)	296(100.0)		
Total	53(16.6)	267(83.4)			
ARV before pregnancy					
Yes	92(42.0)	127(58.0)	219(100)	2.5	0.01
No	52(51.5)	49(48.5)	101(100)		
Total	144(45.0)	176(55.0)	320(100)		
Disclosure					
Disclosed	60(42.0)	83(58.0)	143(100)	1.00	0.32
Not disclosed	84(47.6)	93(52.5)	177(100)		
Total	144(45.0)	176(55.0)	320(100)		

Table 4.8.1b FACTORS ASSOCIATED WITH ADHERENCE OF ARV DRUGS IN PMTCT

Variables	ADHERENCE			X²	p-value
Knowledge of Partner status					
Yes	130(53.2)	114(46.7)	244(100)	28.4	<0.0001
No	14(18.4)	62(81.58)	76(100)		
Total	144(45.0)	176(55.0)	320(100)		
Father status					
Positive	10(43.5)	13(56.5)	23(100)	1.0	0.31
Negative	120(54.5)	100(45.5)	220(100)		
Total	130(53.5)	113(46.5)	243(100)		
HIV related discussion					
High	35(50.7)	34(49.2)	69(100)	1.2	0.28
Low	109(43.4)	142(56.6)	251(100)		
Total	144(45.0)	176(55.0)	320(100)		
Knowledge of HIV					
Good	15(62.5)	9(37.5)	24(100.0)	3.2	0.05
Poor	129(43.6)	167(56.4)	296(100.0)		
Total	144(45.0)	176(55.0)	320(100.0)		
Knowledge of PMTCT					
Good	33(51.6)	31(48.44)	64(100.0)	1.4	0.24
Poor	111(43.4)	145(56.6)	256(100.0)		
Total	144(45.0)	176(55.0)	320(100.0)		

Table 4.8.2 LOGISTIC REGRESSION ANALYSIS OF FACTORS ASSOCIATED WITH ADHERENCE AMONG THE RESPONDENTS

Variables	AOR	95% CI LOWER	UPPER	p value
ARV use before pregnancy				
Yes	1.390	0.823	2.344	0.2174
No(ref)	1.000			
Positive child				
Yes	2.707	1.094	7.370	0.0106
No(ref)	1.000			
Knowledge of partner status				
Yes	1.970	1.043	3.723	<0.001
No(ref)	1.000			
Knowledge of HIV transmission				
Good	0.599	0.240	1.500	0.2720
Poor(ref)	1.000			

4.9 Factors associated with male partner involvements among respondents

About 28.0% of respondents who had disclosed their HIV status to their partner had high male involvement as compared to 7.3% who had not disclosed ($X^2 = 24.4$; p-value < 0.000). About 51.8% who reported high level of HIV related discussion with their partners had high male partner involvement compared with 32.8% who had low level of HIV related discussion ($X^2 = 11.0$; $P < 0.000$) (Table 4.9.).

High involvement of male partner at 13.2% was significantly more likely among participants who had been on ARV before this current pregnancy ($X^2 = 5.5$; $P < 0.01$) Table 4.9.

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Table 4.9a: FACTORS INFLUENCING MPI IN PMTCT PROGRAMME AMONG RESPONDENTS

Variables	MPI			X ²	P-Value
	High	Low	Total		
Age					
15-30	19(16.8)	94(83.2)		0.0	0.93
31+	34(16.4)	173(83.6)			
Total	53(16.6)	267(83.4)	320(100)		
Education					
Little or No formal Education	4(12.5)	28(87.5)	32(100)	0.4*	0.62
Formal education	49(17.0)	239(83.0)	288(100)		
Total	53(16.6)	267(83.4)	320(100)		
Married					
Not married	50(16.2)	258(83.8)	308(100)	0.3*	0.43
Total	3(25.0)	9(75.0)	12(100)		
Total	53(16.6)	267(83.4)	320(100)		
Religion					
Christian	36(17.5)	170(82.5)	206(100)	0.3	0.55
Muslim	17(14.9)	97(85.1)	114(100)		
Total	53(16.6)	267(83.4)	320(100)		
Ethnicity					
Yoruba	34(17.2)	163(82.7)	197(100)	0.2	0.67
Others	19(15.5)	104(84.5)	123(100)		
Total	53(16.6)	267(83.4)	320(100)		
Occupation					
Formal employment	12(18.5)	53(81.5)	65(100)	0.2	0.64
Informal Employment	41(16.1)	214(83.9)	255(100)		
Total	53(16.6)	267(83.4)	320(100)		
Income					
≤50000	32(16.8)	159(83.2)	191(100)	0.0	1.00
>50,000	10(16.7)	50(83.3)	60(100)		
Total	42(16.7)	209(83.2)	251(100)		
Age at Marriage					
≤30yrs	44(16.1)	230(83.9)	274(100)	0.4	0.55
>30yrs	9(19.6)	37(80.4)	46(100)		

Table 4.9b: FACTORS INFLUENCING MPI IN PMTCT PROGRAMME AMONG RESPONDENTS

Total	53(16.6)	267(83.4)	320(100)		
Duration of marriage(yrs)					
<10	50(16.7)	250(83.3)	300(100)	0.6	1.00
>10	3(15.0)	17(85.0)	20(100)		
Total	53(16.6)	267(83.4)	320(100)		
Parity					
First Pregnancy					
Yes	26(20.8)	99(79.2)	125(100)	2.7	0.10
No	27(13.9)	168(86.1)	195(100)		
Total	53(16.6)	267(83.4)	320(100)		
Previous positive child					
Yes	4(16.7)	20(83.3)		0.0	1.00
No	49(16.6)	247(83.4)			
Total	53(16.6)	267(83.4)			
ARV commenced before current pregnancy					
Yes	29(13.2)	190(86.8)	219(100)	5.5	0.01*
No	24(23.8)	77(76.2)	101(100)		
Total	53(16.6)	267(83.4)	320(100)		
Adherence					
Yes	19(35.8)	125(46.8)	144(100)		
No	34(64.2)	142(53.2)	176(100)	2.14	0.14
Total	53(100.0)	267(100)	320(100)		
Disclosure					
Disclosed	40(28.0)	103(72.0)	143(100)	24.4	<0.0001*
Not disclosed	13(7.3)	164(92.7)	177(100)		
Total	53(16.6)	267(83.4)	320(100)		
Knowledge of Partner status					
Yes	44(18.0)	200(82.0)	244(100)	1.6	0.20
No	9(11.8)	67(88.2)	76(100)		
Total	53(16.6)	267(83.4)	320(100)		

Table 4.9c: FACTORS INFLUENCING MPI IN PMTCT PROGRAMME AMONG RESPONDENTS

Variables	MPI			X ²	P-Value
	High	Low	Total		
HIV status					
Positive	4(17.4)	19(82.6)	23(100)	0.6	1.00
Negative	39(17.7)	181(82.3)	220(100)		
Total	43(17.7)	200(82.3)	243(100)		
HIV related discussion					
High	71(51.8)	66(48.2)	137(100)	11.0	<0.00*
Low	60(32.8)	123(67.2)	183(100)		
Total	131(40.9)	189(59.1)	320(100)		

**Fisher's exact*

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4.10 Logistic regression on factors associated with male partner involvement among respondents

In a multiple logistic regression model (Table 4.10), male partner involvement remained significantly associated with disclosure of HIV status to partners. Those who had disclosed their status to their partners were four times (AOR= 4.0; CI: 1.080-5.061) more likely to report high male partner involvement compared to those who had not disclosed.

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Table 4.10: LOGISTIC REGRESSION ANALYSIS OF MALE PARTNER INVOLVEMENT AMONG RESPONDENTS

Variables	AOR	95% CI LOWER	UPPER	p value
First Parity				
Yes	0.598	0.319	1.120	0.108
No(ref)	1.000			
ARV use before current pregnancy				
Yes	1.558	0.785	3.089	0.205
No(ref)	1.000			
Discussion score among partners				
High	1.049	0.500	2.206	0.900
Low(ref)	1.000			
Disclosure of HIV status				
Yes	4.070	1.008	5.061	<0.001
No(ref)	1.000			
Knowledge of partners HIV status				
Yes	0.805	0.326	1.986	0.634
No(ref)	1.000			
Adherence to ARV drugs				
Yes	1.816	0.891	3.703	0.100
No(ref)	1.000			

4.11 Focus group discussion results

Qualitative Analysis

Five thematic areas were identified and assessed from the three focus group discussions. They were

1. Knowledge of HIV and PMTCT transmission among respondents
2. Is it difficult for women to tell their partners their status? And why?
3. How do you rate men's participation in your PMTCT?
4. Reasons why men don't participate in PMTCT
5. Ways men can participate in PMTCT

Thematic area 1: Knowledge of HIV and PMTCT transmission

All participants knew that HIV transmission can be through sharing of needles, sharp objects, blood transfusion and multiple sexual partner without using barrier method of family planning – condom, majority are also aware that HIV mothers can pass the infection to the baby during pregnancy, labour and breast feeding.

Majority had this knowledge strictly through PMTCT services after they have been diagnosed of HIV or during pregnancy and not before. No one has ever heard this information before pregnancy.

....." Yes, I know you can get HIV by sleeping with different men which I have heard on television, radio advert at different times but I didn't hear the baby can get it too through me until I became pregnant and the nurse told me in the hospital"

(Participant 5 FGD 1)

....." Yes, I know about HIV through different drama on television and newspaper but I didn't know my baby too can have it until I registered here....."

(Participant 4 FGD 3)

They described PMTCT as a way of preventing baby from acquiring HIV from the mother during pregnancy, labour, delivery and breastfeeding.

“Now I know with proper care and use of my drugs my baby can be HIV free that is why I always take my drugs but I didn't know before I came to the hospital for my first pregnancy”

(Participant 1 FGD 2)

.....” I like the fact that now I can breastfeed my baby without the fear of anyone knowing or suspecting that am HIV positive as long as I take my drugs my baby will be fine”

(Participant 1 FGD 3)

All participants are aware of drugs aspect during PMTCT which is only one prong of PMTCT, they are not aware of other three prongs of PMTCT which involves use of contraceptives and others

.....”They told us to be using condom in the clinic after pregnancy but they didn't tell us why.....

(Participant 6 FGD 2)

.....”I cannot tell my husband to use condom because he will start thinking am promiscuous, he once told me he cannot use condom as a bachelor and now that he is married still be using condom”

(Participant 4 FGD 1)

Thematic Area 2: Is it difficult for women to tell their partners their status? And why?

Some FGD participants did not disclose their status to their partners due to fear of divorce, losing their marriages, abandonment to take care of children alone, violence and beating from their partner, that they will be blame for the infection and the fear of reporting them to their partners' family.

.....my husband and I were tested together before marriage and the Pastor had to call us for counseling, I didn't know anything until they told us what happened and Pastor asked us to

decide whether to go ahead with the wedding or not because my husband was negative, he said he would go ahead and he has been so supportive but he did not tell his family even till date.....

(Participant 5 FGD 2)

.....I lost my first marriage because I told my husband, he pushed me out, humiliated me in front of his family, I remarried because I wanted to prove to him that I can be HIV positive and still live a happy life but I can never tell any man about my status again, NEVER (she cried)

(Participant 6 FGD 3)

.....I don't know how to tell my husband about my status because I don't know what may happen to me but now I have two other children, this is my third pregnancy as long as all his children are negative, even if he knows later I will tell him I just got tested positive too.....

(Participant 8 FGD 1)

.....except doctors call him to tell him directly, I can never tell my husband because he will beat the hell out of me.....

(Participant 3 FGD 3)

.....my husband is in the military, he is not in Lagos, he comes home once in a while if I tell him I am HIV positive, he will think I have become prostitute since he is not around.....

(Participant 10 FGD 2)

.....my husband aunt who is a nurse knew about the status when I was tested in the hospital; now I can't breathe again in the family, I can't even open my mouth to talk, I have been ostracized, if not for my husband that stood by me I would have left.....(she sighs)

(Participant 7 FGD 1)

But majority of them agreed that partner disclosure is necessary, it will make a burden easier for them to carry and they will get enough support. They discussed that if the government can provide an avenue for an experienced health worker to handle the aspect of disclosure for partners, it will give them a lot of support. Some of the participants reported that this issue of

disclosure had made them to lose their first marriages and after remarrying now, they can never agree to any form of disclosure.

.....I think telling husband is the best, it makes things a lot easier for you, you don't have to carry too much secret around and it is easier to take drugs with a supportive husband....., hmmm,(she says) but men will always be men, anytime he is upset he is always reminding me of my condition"

(Participant 5 FGD 2)

..... if I tell my husband, I won't have to hide to take my drugs and the fear of him knowing will not be there..... (Participant 5 FGD 3)

....." telling husband is good oh; but how will I open my mouth to say it, one day he will still know but not through me" (Participant 6 FGD 1)

Thematic Area 3: How do you rate men's participation in your PMTCT

Many of the participants did not have much to say in their partner participation in their ANC they described pregnancy as the solely role of women at home although they all agreed that pregnancy should be shared responsibilities but majority bear the emotional burden all alone. Majority claimed that their partners only provided generous financial assistance but nothing else at home, and the financial can even be limited to pregnancy period only and nothing thereafter.

.....he always reminds me when my ANC is due and he gives me money for any test in the hospital but aside that, he doesn't even bother.....

(Participant 5 FGD 1)

.....my husband helps me to look after the other children and to even cook sometimes only during, he is always providing generously for me and the baby, but he does not follow me to the clinic.....(Participant 7 FGD 3)

.....he does not know about my drugs so he can't remind me but he is always reminding me when my antenatal clinic is due.....(Participant 3 FGD 3)

.....my husband does not care whether I walk to the clinic or not, no support at all.....

(Participant 2 FGD 3)

.....he is trying his best to provide for us, aside that am alone.....

(Participant 5 FGD 2)

.....he has accompanied me to the clinic once, when I wanted to register since then he will just remind me to go and ask about the clinic later.....

(Participant 10 FGD 1)

Majority indicated that they don't want their partner to accompany them to the clinic because they prefer not to tell them their status so that they can have peace in their marriage especially when it comes to in-laws, others said even if its compulsory their husbands will not accompany them because of the time spent in the health facilities because of their jobs, others gave reasons that the ANC hospital environment is not conducive for men.

Thematic Area 4: Reasons why men do not participate in PMTCT

Many of the reasons gave as why men don't want to participate in PMTCT as majorly busy schedule, time spent in health facility to sing and dance that men see it as women schedule.

....." well, I think some men do not participate because they don't even know some of us are HIV positive..... (Participant 8 FGD 1)

..... some men do not participate because they go to work, they can't leave where they are working and be doing antenatal clinic..... (Participant 1 FGD 2)

.....they feel there is no time for antenatal clinic when there is need to make money"

(Participant 4 FGD 2)

.....my husband does daily job, if he doesn't go to work in one day, we cannot eat, how can he follow me to the hospital..... (Participant 1 FGD 1)

.....men don't seem to have time for such issues..... (Participant 6 FGD 2)

..... " they are too busy making money" (Participant 5 FGD 3)

..... " my husband sees it as a woman's responsibility after all men don't get pregnant.....

(Participant 3 FGD 1)

..... " It is for women..... (Participant 9 FGD 1)

....." men believe it is the cultural right of women only..... (Participant 1 FGD 3)

.....it is the sole business of women and men believe they should not participate"

(Participant 10 FGD 2)

Thematic Area 5: Ways men can get involved in PMTCT

Majority of the respondents in the various focus groups were of the opinion that men should play some role in PMTCT services but some feel it is better to leave men out of their issues because they don't want to complicate their lives further.

Ways in which pregnancy responsibilities could be shared included helping to cook food in the kitchen when tired, helping with house chores, helping with the children and not just providing financial contribution only.

..... "men can discuss more with their wives" (Participant 4 FGD 2)

....." Men can also look for information from other sources so that they can compare the information with whatever their wives tell them after clinic"

(Participant 7 FGD 1)

..... " men should look for information on how to protect the baby as well and inform the mothers" (Participant 6 FGD 3)

.....men can assist with house chores and cooking and not only providing money at home.....(Participant 10 FGD 2)

.....men can get involved by making themselves available when the need arises.....

(Participant 8 FGD 3)

..... getting involved in PMTCT as a man should include taking her to the clinic, staying with her and providing money for her to spend at the clinic..... (Participant 1 FGD 3)

..... " men should learn about PMTCT how it affects their babies..... (Participant 5 FGD 3)

....."to be involved health workers should ensure that they invite men to the PMTCT programme and ensure that they attend instead of leaving it solely to their wives.....

(Participant 6 FGD 2)

....." Should provide encouragement for their wives and support them instead of giving them trouble" (Participant 2 FGD 2)

....." men can follow us to the clinic but only if the nurses there will welcome them.....

(Participant 4 FGD 1)

.....men can be involved by reminding their wives about their clinic appointments"

(Participant 4 FGD 2)

....." They can accompany their wives to the clinic and ask question"

(Participant 2 FGD 1)

....." men can also look out for information on how to take care of their family well

(Participant 8 FGD 1)

Chapter Five

5.1 DISCUSSION

5.1.1 CHARACTERISTICS OF RESPONDENTS

The sociodemographic characteristics of the respondents showed that majority were married, age group 30-34 and also belong to Yoruba ethnic group. This is expected because of the fact that Lagos state is in the south west of Nigeria a region dominated by Yorubas which could be the reason for the high proportions of respondents from this ethnicity in this study.

Findings from this study showed that majority of respondents belong to age group 30-34 while their partners were age group 35-39, this is similar to a study on efforts to end vertical transmission of HIV conducted by Elena Ghanotakis et al (2015), where there is disparities in age, education and income status of participants and their partners which gives greater access to power, influence and resources to men and this may be a challenge in the uptake of HIV testing disclosure of HIV status to partners.

5.1.2 KNOWLEDGE OF HIV AND PMTCT

Over 90% of the respondents in the study had a poor knowledge of HIV transmission and prevention while only 20% had good knowledge of PMTCT which is not consistent with a cross sectional the study done among HIV positive women in Ghana on the knowledge of PMTCT which revealed PMTCT knowledge of 95% among HIV positive women by Boateng et al (2013). However, another study on knowledge of HIV and PMTCT in a suburban community in Lagos State by Balogun et al (2010) reported only 8.3% of the respondents have good knowledge while more than 50% reported poor knowledge of HIV and PMTCT.

Majority of FGD participants all responded positively about hearing HIV and PMTCT even though they all had different definitions for it and different ways of preventing HIV and PMTCT, the knowledge varied widely.

5.1.3 LEVEL OF MALE INVOLVEMENT

Many respondents reported low level of MPI (16.6%) in seven ranges of activities with partners providing generous financial assistance to attend ANC contributing 92.5% to the MPI score, this shows that men are not getting involved in pregnancy apart from providing financial support.

There is also need for further study on which of the seven activities weighs more and should be prevalent male involvements during pregnancy. The finding is in contrast to the study conducted in Khayelista (2016) reported that MPI as consisting solely of men accompanying their female partners to attend antenatal visits.

The reported range of MPI activities, financial support and discussion around antenatal care were reported in the study as the most prevalent partner involvement activities. This is consistent with the study reported by Brittain, conducted in Kyaalithia who reported financial support and discussion around ANC as the most prevalent partner involvement activities (Brittain et al., 2015).

Being able to attend antenatal visits depends on several factors and attendance may be constrained by health facility barriers, employment and cultural belief that attendance ANC is seeing as a woman's duty only. This is consistent with the results of a study conducted in Durban, South Africa (Ladur et al, 2015). It is therefore important that targeted interventions for men while their partners are pregnant may be more beneficial and it will aim to engage men in PMTCT activities.

5.1.4 FACTORS ASSOCIATED WITH MALE PARTNER INVOLVEMENT

This study shows that disclosure influence male partner involvement in PMTCT and among participants who had been on ARV before this current pregnancy after adjusting for the effect of other variables. This could be linked with the fact that majority of male partner had no knowledge of their partners' HIV status hence participation in PMTCT services is low.

Also high level of discussion, adherence and commencement of ARV use before the current pregnancy were found to be associated with male partner involvement.

This is similar to a study conducted in Tanzania, Uganda and Nairobi that found that MPI improves ARV adherence, facilitates couples communication and joint decision making, it builds open communication within couple that ensures equal and safe partnership at homes (Byamugisha et al, 2010a; Ditekemena et al., 2012; Reece et al , 2010).

A high level of MPI was significant among participants who had disclosed their HIV status to their husbands, those who had been on ARV before this current pregnancy and among those who had High HIV related discussion with their partners.

This is to show that disclosure and communication with couple is vital and could influence the nature and extent of MPI in PMTCT. This finding is also consistent with the systemic review of MPI done in Sub-Saharan Africa on Male Partner involvement (Rebecca et al.,2008).

In multivariate analysis, a high level of MPI was significantly associated among participants who had disclosed their status to their partners. These are the men who get highly involved in their partner's pregnancy. Policy makers should develop programmes that encourage and build responsible relationship with high communication as the target so as to promote male partner involvement.

Due to the scope of this study, it was not possible to interview men and all of the views concerning MPI were expressed by women this may present a biased perspective of the extent of MPI in the study population.

5.1.5 HIV RELATED COMMUNICATION AND DISCLOSURE

Participants reported low (43.8%) level of HIV discussion on testing with their partners and also reported low level of HIV related discussion and PMTCT discussion (35.7% & 34.1%) respectively, only 21.6% participants recorded high level of HIV related discussion with partners, which is very low and discouraging because communication within couples is very important to ensure partners involvements and its sustainability.

High reported rate of HIV-related discussion with partners is encouraging as this is found to be significantly associated with both disclosure and MPI in multivariate analysis.

This is similar to the review on MPI in sub-saharan Africa where poor communication was reported as a barrier to the uptake of HIV testing among women attending ANC. Also similar to a study by Ditekeman et al, 2012 and Koo et al, 2012, has also shown that communication and disclosure to partners about sexual and reproductive health issues increased the commitment of pregnant women to PMTCT programmes.

Disclosure among survey participants to their male partners was low at 44.7% which is expected as a result of low discussion level. This is also consistent with the study done in South Africa and other African. Many of the participants in FGD gave reasons for non-disclosure as " *I lost my first husband because I was truthful and I told him about the HIV, I was chased out of my home, I lost everything my marriage, my dignity..... now that I managed to remarry, I can never tell any man my HIV state again*" (Participant 5, FGD 2).

A study conducted in PMTCT sites in Zambia and Kenya by Farquhar et al, 2015 and Semrau et al, 2005 shows that where pregnant women communicated with their partners especially on couple HIV counselling, the couple counseling improved the uptake of HIV testing, antiretroviral prophylaxis and alternatives to prolonged and mixed breastfeeding, and no increased risk of adverse social events was reported compared with individual counseling. Rates of partner disclosure were high and rarely accompanied by negative reactions on the part of the partner.

Also women who disclosed their HIV status to their partners were more likely to return for post-test counselling, accept antiretroviral prophylaxis, modify infant feeding practices and increase condom use in the postpartum period than those who did not (Kiarie et al., 2006; Farquhar et al., 2004; Semrau et al 2005; Msuya et al. 2006).

In this study, respondents believed they had a lot to lose by disclosing their status in terms of violence, rejection and abandonment. This is consistent with result of another study on Male partner involvement in the context of PMTCT by Kalembo et al, 2011 who reported fear of abandonment and violence as the main reasons for non-disclosure of HIV status among HIV pregnant women. There is need for dynamic shift in gender empowerments and equality so that women will stop believing that they have a lot to lose by disclosing their status.

5.1.6 PMTCT ADHERENCE TO ARV THERAPY

In this study, all respondents are on antiretroviral drug, and 68% had been on ARV use before this current pregnancy with about 55% reported they had never missed a drug during this pregnancy. This adherence rate is low and is contrary to the study done in South Africa by Brittain, 2015 on male involvement in the context of PMTCT as well as the study conducted by Byamugisha, 2010 who reported high adherence rate of 79% and 85% respectively.

The adherence was low despite the fact that majority 75.9% were on fixed dose combination which should be a lot easier to manage and also despite the fact that women are intent on preventing MTCT. This is contrary to a study by Stinson, 2011 that the type of ARV regimen taken during pregnancy influenced maternal adherence that women taking twice-daily AZT were less likely to adhere than women taking fixed combination dose while Stringer et al, 2011 found that women on combined ART were more likely to adhere than those taking other doses.

In this study, an association was found on having a previous positive child, ARV use before this current pregnancy, disclosure to partner of HIV status, knowledge of partner status as well as knowledge of HIV and high male partner involvement. This is consistent with a finding on Male involvement in PMTCT by Ditekemena et al, 2012 which shows that a high male partner involvement leads to an improvement in ARV prophylaxis uptake, adherence and promotes compliance with family planning and optimal infant nutrition.

A quantitative research in rural South Africa by Gourlay, 2013 also found women with higher HIV and PMTCT knowledge scores more likely to adhere to ARV than those with low knowledge score. A study on level of male involvements by Shiyagaya, 2016 also reported that male partner involvement improves adherence of mothers to antiretroviral use, potentially reduces the incidence of HIV infection during pregnancy, improves child survival and encourages safe infant feeding practices.

A study by Cecilia in 2008 also reported that adherence to HAART for pregnant women dramatically reduces perinatal transmission: a woman who has not disclosed to her sexual partner may not be able to adhere well to HAART and will not be able to use condoms, get good nutritional support and will most likely have stress.

5.2 CONCLUSION

The study on Male Partner Involvement in the prevention of mother to child transmission of HIV in Lagos state found out that the level of male partner involvement was low in Lagos state at 16.6% and factors associated with high male partner involvements included disclosure to one's partner, HIV related communication among partners and those who had been on ARV drugs before the current pregnancy.

Disclosure is an independent risk factor for male partner involvement. This highlights the importance of the need to facilitate partner disclosure so as to gain more male partners support in the state as well as encourage high communication among partners. There is also need for services that promote and facilitate couples counselling as well as the provision of psychosocial support for HIV concordant and discordant couples, should also be explored.

In addition, my findings highlight the potential need to intervene at the level of the couple in order to increase MPI, as higher levels of discussion were found to be associated with MPI, and men who communicate with their partners appear to be more likely to participate in PMTCT programmes, interventions should target communication within the couple, and this should preferably occur before pregnancy.

Also it is important that PMTCT services delivery should be integrative of men so that men feel important to be inclusive of PMTCT services, this will give opportunity for sustainable impact on PMTCT activities for women to increase PMTCT activities.

5.3 RECOMMENDATIONS

From the findings of this study, the following hereby are recommended that

- Government should encourage male oriented family planning services. Services that promote and facilitates couple counseling and communication should be explored in Lagos state.
- There is need for services in Lagos state that facilitates couple counseling like religious houses, premarital counseling, as well as provision of psychological and psychosocial

support for HIV concordant and discordant couples should be explored. Also, having a high level of HIV related discussion with the partner is associated with high MPI and there is need for intervention that will target communication among couple.

- Male partner involvement intervention also should aim to involve variety of activities such as encouraging partners to attend ANC this will allow for couples testing and enhance disclosure. Integration of male partners could strengthen all four pillars of PMTCT as male partners are often decision-makers.
- The word PMTCT should be changed to Prevention of Parents to child transmission of HIV- PPTCT, to assist men to feel more welcomed at the health care facilities and it also reflects the social reality of families in the dynamics of transmission.

5.4 LIMITATIONS OF THE STUDY

- Women are the sole respondents on their male partners' involvement which may affect reliability of information on levels of support received and their partners' HIV status.
- A precise and universally accepted definition of male involvement in PMTCT is lacking making it difficult to have a standardized definition of MPI.

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APPENDIX

1. INFORMED CONSENT FORM

Male partner involvement during Pregnancy: The missing component in PMTCT adherence Lagos state?

My name is Dr Okunromade Oyeladun, I am conducting a research in partial fulfilment of the award of masters in Public Health in Field Epidemiology Practice. I am collecting information about male partner involvement in pregnancy, specifically when the pregnant woman is HIV-positive. I am interested in finding out what your experience of male partner involvement in your pregnancy is, as well as your experience of being on an antiretroviral regimen during pregnancy. Your participation in this study is voluntary, and if you decide not to participate then you will face no negative consequences. This study is not being conducted by any antenatal service, so if you decide not to participate then your antenatal treatment will not be affected in any way.

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

- An interviewer will ask you questions and write down your answers. This should not take longer than 20 minutes.
- All of your answers to the questions will be kept private and confidential, and your name and anything that could be used to identify you will not be recorded. Only the researchers on this study will see your answers.

The purpose of the study has been explained to me, I have had the opportunity to ask questions about these, and these questions have been answered to my satisfaction. I understand that the answers I provide will be confidential and that my identity will be kept anonymous. I consent voluntarily to participate in this study and I understand that I have the right to withdraw from the study at any time without this affecting my antenatal treatment in any way or leading to any negative consequences.

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

Date: _____

Thank you.

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

Date: _____

Thank you.

2. QUESTIONNAIRE

INTERVIEW QUESTIONNAIRE FOR THE STUDY ON MALE PARTNER INVOLVEMENT IN THE PMTCT PROGRAMME IN LAGOS STATE, NIGERIA

Serial No _____

LGA _____

1. Demographic characteristics and Socio-economic factors

S/N	Questions	Responses – myself	Partner
1.1	Age as at last birthday		
1.2	Religion	a) Christian b) Muslim c) Traditional	
1.3	Educational status	1. No formal education 2. Primary education 3. Secondary education 4. Tertiary education	
1.4	Ethnic group	a) Yoruba b) Igbo c) Hausa d) Others(specify)	
1.5	Occupation	a) Daily labour b) Formal employment c) Business owner d) Housewife e) Student f) Others	
1.6	What is your total monthly income?	a) <50,000 b) 50,000-99,000 c) >100,000 d) I don't know	
1.7	Marital status	a) Married b) Divorce c) Cohabiting	
1.8	Age at marriage		

2. Sex and HIV History

2.1 Age at sexual debut.....

2.2 Is this your first pregnancy? Yes or No

If No.....

2.3 How many children do you have?

2.4. When did you test positive? a) during this pregnancy b) before this pregnancy

2.5. Age at which tested positive?

2.6. Have you been on ARV before pregnancy?

2.8 When did you start ARV?

2.9 No of weeks of the pregnancy as at when registered for ANC?

2.8 How often do you come for ANC?

3. Knowledge and awareness of PMTCT

Instructions: Tick one of the appropriate statements reflecting the respondent opinion as follow: Yes, No, or Do not know.

2.1 Is it possible for a woman to acquire HIV when she is pregnant?

1. Yes ___ 2. No ___ 3. Do not know ___

2.2 What will happen to her HIV status when a woman who is HIV-positive becomes pregnant?

1. Remains positive ___ 2. Become Negative ___ 3. Do not know ___

2.3 Can a mother who is HIV-positive transmit the HIV virus to her unborn child during pregnancy?

1. Yes ___ 2. No ___ 3. Do not know ___

If Yes, how does it happen?

1. Through unprotected sex

2. High viral load

3. When the mother is sick (advanced HIV)

4. When partners have an STI

5. Do not know how

2.4 Can a mother who is HIV-positive transmit the HIV virus to her unborn child during delivery?

1. Yes ___ 2. No ___ 3. Do not know ___

If Yes, how does it happen?

1. Through Vaginal delivery

2. Through assisted hospital procedures

3. Prematurity of the baby

4. Do not know how

2.5 Can a mother who is HIV-positive transmit the HIV virus to her unborn child during breastfeeding?

1. Yes ____ 2.No ____ 3. Do not know

If yes, how?

1. Through unprotected sex

2. Sores on the mouth of infant

3. Sores on the breasts of the mother

4. Do not know how

2.6 Is giving antiretroviral medicine to the mother and the child reduce the chance of transmission of HIV from a mother to her child?

1. Yes ____ 2. No ____ 3. Do not know ____

2.7 Can delivering the baby by operation reduce the chance of HIV from the mother to the child?

1. Yes ____ 2. No ____ 3. Do not know ____

2. Where did you first heard about the prevention of mother to child transmission of HIV programme?

1. Yes ____ 2. No ____

do you know what it is all about?

1. Partners counselled and tested for HIV together

2. Partners are counselled about feeding options

3. Partners are put on ART treatment

4. Mothers are counselled and tested

5. Mothers are put on treatment

6. Cannot remember

3. HIV-related communication and disclosure

- 1) Have you ever discussed HIV testing with your partner? Yes or No
- 2) Have you ever discussed using family planning or protection to prevent pregnancy with you partner? Yes or No
- 3) Is this pregnancy planned for? Yes or No
- 4) Have you ever discussed preventing horizontal transmission with your partner?
- 5) Have you disclosed your status to your partner? Yes or No
- 6) If No, why
 - a. Feeling of shame or guilt
 - b. Conflict at home
 - c. Fear of beating or slapping
 - d. Negative reactions from inlaws
 - e. Fear of losing my marriage
- 7) Has your partner ever gone with you for testing? Yes or No
- 8) Did he disclose his status to you? Yes or No
- 9) Is your partner:
 - positive
 - negative
 - I don't know _____
- 10) How often do you attend ANC?
 - a. Weekly
 - b. Once in 2wks
 - c. Once a month
 - d. Occasionally
- 11) Has your partner or your inlaw does anything to hit, slap or hurt you physically because of your status? Yes or No

4. LEVEL OF MPI INVOLVEMENT

- 1) Has your partner ever accompanied you for ANC visit? Yes or No
- 2) If no, why
Cultural issue _____

3. HIV-related communication and disclosure

- 1) Have you ever discussed HIV testing with your partner? Yes or No
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4. LEVEL OF MPI INVOLVEMENT

- 1) Has your partner ever accompanied you for ANC visit? Yes or No
- 2) If no, why
Cultural issue _____

Fear _____

Employment _____

Time spent at facility _____

Attitude of health care provides _____

Lack of knowledge about PMTCT _____

Feeling of shame _____

It is a woman problem _____

Others (Please specify)

- 3) Does your partner provide generous financial support for your antenatal visits? Yes or No
- 4) Does your partner know when your antenatal visits are due? Yes or No
- 5) Does your partner remind you of your antenatal visits? Yes or No
- 6) Do you freely discuss with your partner what happens during antenatal visits? Yes or No
- 7) Does your partner remind you to take your ARV? Yes or No

Thank you for your time!!!!!!

3. FOCUS GROUP DISCUSSION GUIDE

Qualitative Analysis

Five thematic areas

1. Knowledge of HIV and PMTCT transmission among respondents
 - a. Have you ever heard of HIV and PMTCT before?
 - b. If so, where did you hear about it?
 - c. In your opinion, how does HIV and PMTCT transmit?
 - d. How can it be prevented?
2. What are the typical roles of men and women during pregnancy?
 - a. What are their roles and responsibilities when they have a child together?
Traditionally, the man is seen as being the one who must earn money while the woman stays at home and looks after the house and children – is this still true of men and women's roles today, or have these roles changed?
 - b. Would the fact that a woman is HIV-positive change these roles at all?
 - c. Does a man have different responsibilities when his partner is HIV-positive and pregnant?
 - d. Does a man have any specific responsibilities when his partner is accessing PMTCT services?
3. Decision-making regarding having a child questions?
 - a. I have noticed that many of the women who we have spoken to had not planned to have a child. Do you think that this is true of most women who fall pregnant? If yes, what are the reasons for this?

- b. I have also noticed that many unmarried women fall pregnant. Do you think that this is the norm nowadays?
- c. Is marriage an outdated tradition, or is there still a place for marriage in our society?
- d. Is it expected for a woman in your community to have a child?
- e. If a woman in your community did not have a child, would she be looked down on or treated differently?
4. HIV testing and disclosure
- a. Why do you think that HIV testing is important?
- b. Is testing only important in an antenatal setting, or are there other important situations during which women should be tested?
- c. Do women generally tell their partners before they get tested? o If not, why do they not tell them?
- d. After they have been tested, is it difficult for women to tell their partners their status?
- a. If yes, what do you think makes it difficult? If it is not difficult, what do you think makes it easy?
- e. Are women given any support from health workers in order to make disclosure easier?
- f. Is disclosing to a male partner different to disclosing to a family member or friend?
- g. I would like to speak next about couples counselling and testing, where couples are tested and receive counselling together.
- h. Is counselling and testing available to couples at this clinic?

- i. Are couples encouraged to be tested together?
 - j. Have you ever been offered couples counselling? If yes, where were you offered this?
 - k. Where do you think the best place would be for couples counselling to occur?
 - l. Do you think that women like you would be willing to have HIV counselling and testing with their partners?
 - m. Would you prefer to be tested on your own, or would you like the opportunity to be tested with your partner?
5. Male partner involvement in pregnancy, ways men can participate in PMTCT:
- a. Do you feel that pregnancy is purely a women's issue, or is pregnancy something that both men and women should be involved in?
 - b. What do you feel is a man's role during pregnancy?
 - c. What are his responsibilities while his female partner is pregnant? Is his only responsibility to provide financial support, or is his role more than this?
 - d. What do your partners do to help you with your pregnancies?
 - e. What would you like your partners to do to help you with your pregnancies?
 - f. In your community, what is seen as normal for a man to do to help his female partner while she is pregnant?
 - g. If men are not very involved in pregnancy, then why do you think that they are not more involved?

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 - f. In your community, what is seen as normal for a man to do to help his female partner while she is pregnant?
 - g. If men are not very involved in pregnancy, then why do you think that they are not more involved?

- h. Have you experienced barriers against male involvement? If yes, what barriers have you experienced?
- i. Do you think that men are always supportive of their partners, or do they become more supportive and involved when their partners are pregnant?
- j. I have noticed that some men support their partners to take their ARVs every day. Do you think that male partner support is helpful for adherence?
- k. Do men become more supportive when their partners are pregnant, or are they always supportive (regarding adherence and issues related to HIV)?
- l. Do you think that it would be acceptable if a man came with his partner to the clinic for antenatal visits?
- m. Would other pregnant women find it acceptable? Would the staff at the clinic find it acceptable? Is there space in the clinic for men, or do they have to wait outside the clinic?
- n. Did your partners come with you to your antenatal visits?
- o. Did they come inside the clinic, or did they wait outside until you were finished?



LAGOS STATE GOVERNMENT



LAGOS STATE UNIVERSITY TEACHING HOSPITAL, IKEJA

HEALTH RESEARCH AND ETHICS COMMITTEE
REG.NO. NHREC04/04/2008
(www.nhrec.net)

PROF. D. A. A. OKE
Chief Medical Director
0120117152, 05058905254,
02117042959115

PROJECT TITLE: A PROPOSAL ON MALE PARTNER INVOLVEMENT IN THE PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV IN LAGOS STATE
REF. NO.: LREC. 06/10/783
PRINCIPAL INVESTIGATOR: DR. OKUNROMADE OYELADUN .F.
ADDRESS: DEPT. OF EPIDEMIOLOGY NAD MEDICAL STATISTICS, UI
DATE OF RECEIPT OF VALID APPLICATION: 30/01/17
DATE OF APPROVAL: 14/02/17

This is to inform you that the research described here in the submitted protocol, the consent forms, advertisements and other participant information materials have been reviewed and given full approval by the Health Research and Ethics Committee of LASUTH (LREC)

This approval dates from 14/02/2017 to 14/05/2017. If there is any delay in starting the Research, Please inform the HREC LASUTH so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. All informed consent forms used in this study must carry the HREC LASUTH assigned number and duration of HREC approval. In a multiyear research, endeavor to submit your annual report to the HREC early in order to obtain renewal of your approval and avoid disruption of your research.

THE NATIONAL CODE FOR HEALTH RESEARCH AND ETHICS(www.nhrec.net) REQUIRES YOU TO COMPLY WITH ALL INSTITUTIONAL GUIDELINES, RULES AND REGULATIONS AND WITH THE TENETS OF THE CODE INCLUDING ENSURING THAT ALL ADVERSE EVENTS ARE REPORTED PROMPTLY TO THE HREC. NO CHANGES ARE PERMITTED IN THE RESEARCH WITHOUT PRIOR APPROVAL BY HREC LASUTH EXCEPT IN CIRCUMSTANCES OUTLINED IN THE CODE. THE LREC RESERVES THE RIGHT TO CONDUCT COMPLIANCE VISIT TO YOUR RESEARCH SITE WITHOUT PREVIOUS NOTIFICATION.

DR. A. ADEOOKUN
Chief Director of Clinical Services and Training
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LAGOS STATE GOVERNMENT

LSMH 2695/II/251

17th March, 2017

Dr Okunromade Oyeladun,
Nigeria Field Epidemiology,
Laboratory Training Program (NFELTP),
50, Haile Selassie Street,
Asokoro Abuja.

RE: APPLICATION FOR PERMISSION TO CONDUCT RESEARCH THESIS

This is to acknowledge receipt of your above captioned correspondence dated 30th January, 2017 and convey the social approval of the Lagos State Ministry of Health for you to proceed with the study as requested.

On completion of the study, a copy of the research findings should be made available to the Lagos State Ministry of Health for knowledge sharing.

Thank you


Dr. O.O. Taiwo
Director, Healthcare Planning Research & Statistics
For: Honourable Commissioner (Health)



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