FACTORS AFFECTING THE LEVELS OF MALE INVOLVEMENT IN PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV IN MBEYA CITY

By

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A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Public Health of Muhimbili University of Health and Allied Sciences

Muhimbili University of Health and Allied Sciences

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation titled ***Factors affecting the levels of male involvement in Prevention of Mother to Child transmission of HIV in Mbeya city*** in partial fulfillment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

Prof. E.P.Y Muhondwa

(Supervisor)

Date: 4th June 2010

DECLARATION AND COPYRIGHT

I, **Paulina Beatrice Mbezi,** declare solemnly that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature: _____ **Date** 04/06/2010

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DEDICATION

I dedicate this dissertation to my late beloved Parents, Mr. Samuel A. Mbezi and Mrs. Edna T. Mbezi. Also, to my son Samuel Mbua Magashi

ABSTRACT

The dissertation aimed to assess factors affecting the levels of male involvement in PMTCT of HIV services in Mbeya City. The descriptive cross-sectional study explored also the association between the various barriers males encounter and the optimum responsibilities required for male involvement in PMTCT of HIV services. The study was conducted in July 2009 in Mbeya city using a quantitative method, namely face-to-face structured questionnaire. A systematic random sampling technique was used to select 384 males, married or cohabiting aged 18 to 60 years residing in the catchments areas in Mbeya city.

Results showed that 317 (83.0%) of respondents had a high level of knowledge on MTCT of HIV. The respondents 219 (73.5%) with knowledge on transmission of HIV from MTCT during pregnancy, had tested for HIV together with their wives/partners. The respondents 138 (36.0%) were optimally involved in PMTCT services in Mbeya city. The findings revealed that a smaller number of the married 59 (33.9%) and cohabiting 79 (37.6%) respondents were optimally involved in PMTCT services.

The socio-cultural and economic factors, individual related and service provision factors were found to hinder males utilising PMTCT of HIV services to the optimum level. It is recommended that MOHSW and other stakeholders should continue disseminating health promotion materials, advocacy campaigns on male involvement in PMTCT program to reach household level, targeting males. All these measures will ultimately lead to changes in males' attitude towards their involvement in PMTCT. Mbeya regional authority should utilize influential leaders of the communities in collaboration with NGOs to formulate and disseminate context specific and cultural sensitive messages on socio-cultural issues about PMTCT. ANC/PMTCT clinics should be friendlier and supportive to males and service providers should ensure efforts are made to involve males wholly in PMTCT implementation

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARV	Antiretroviral
GTZ	German Technical Cooperation
HIV	Human Immunodeficiency Virus
MOHSW	Ministry of Health and Social Welfare
MTCT	Mother-to-Child Transmission of HIV
NACP	National AIDS Control Program
PMTCT	Prevention of Mother to Child Transmission of HIV
RCHS	Reproductive and Child Health Services
NVP	Nevirapine
SPSS	Statistical Package for Social Sciences
SRH	Sexual and Reproductive Health
STIs	Sexually Transmitted Infections
UMATI	Uzazi na Malezi Bora Tanzania
UNAIDS	Joint United Nations program on HIVAIDS
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Problem

Mother-to-child transmission (MTCT) of HIV refers to the transmission of HIV infection from HIV infected mothers to their infants. MTCT of HIV is the major source of childhood HIV infections for more than 90% of children under 15 years of age worldwide (UNAIDS, 2006). Because of the large number of women of reproductive age living with HIV/AIDS, decreasing the transmission of HIV from MTCT continues to be a challenge. The numbers of infections in children will likely increase if urgent measures to prevent transmission are not put in place. MTCT of HIV can take place during pregnancy, labour and delivery and breastfeeding (Family Health International, 2003). Mothers and pregnant women need to know that there is a 20-45% risk of HIV transmission from infected mothers to their children without intervention (Piot & Cotl-Seck, 1999; Preble & Piwoz, 2001).

In sub-Saharan Africa, the HIV epidemic in children is reversing the gains in child health and survival and has made caring for HIV-infected children costly for families and health systems. In many of these countries, one-third of paediatric hospital admissions are related to HIV/AIDS (Phoolcharoen & Detels, 2002). Prevention efforts can slow the spread of HIV.

However, pregnant women in countries heavily affected by HIV/AIDS often do not have access to services aimed at preventing MTCT of HIV (PMTCT of HIV in Africa: Issues and challenges). PMTCT of HIV programmes and other vital comprehensive care and treatment services must be extended as a matter of urgency.

Tanzania's Ministry of Health and Social Welfare (MOHSW) in collaboration with the UNICEF initiated a pilot programme on PMTCT of HIV in 2000 that involved four National consultant Hospitals namely Muhimbili National Hospital, Bugando Medical Hospital,

Kilimanjaro Christian Medical Centre, Mbeya Referral Hospital and Kagera Regional hospital. Following a successful PMTCT of HIV piloting phase in 2002, the MOHSW committed to scale-up PMTCT of HIV services to the whole country. The aim is to expand and integrate PMTCT of HIV services in routine Reproductive and Child health Services (RCHs) in all regions in the country. The PMTCT programme targets pregnant women and those of reproductive age and their sexual partners, children, families and communities (Tanzania National PMTCT guidelines, 2003; 2007).

The goals of the programme are to reduce MTCT of HIV and to improve care for infected parents and children by introducing and scaling up comprehensive PMTCT services within all RCH facilities. The PMTCT programme aims to prevent HIV infection in children, giving babies the chance to be healthy and HIV free, and to provide women and their families with access to HIV prevention, testing, care, treatment and support. The approach consists of four elements (McIntyre, & Gray, 2002; Rutenberg et al, 2003) as follows:

Primary prevention is the most effective means to control the spread of HIV and minimize its impact on individuals, families and communities. Preventing HIV infection in women of child bearing age is the best way to prevent MTCT. Sexually active women and men should be encouraged to use safer sex practices, including barrier methods such as condom use, and to reduce the number of sexual partners, staying faithful to their sexual partner.

Healthcare workers at reproductive and child health facilities should encourage all women of child bearing age and their partners to be tested for HIV in order to learn of their HIV status. Attention should also be directed to ensure that Healthcare workers and other caregivers who are not infected do not become infected while providing care and support to those who are living with HIV. The prevention and treatment of Sexually Transmitted Infections (STIs) is an important HIV prevention intervention. Co- infection with STI increases HIV significantly. Young people should be provided with information about and access to HIV prevention services and should be encouraged to abstain from sexual activity until they can make responsible decisions.

Family planning is part of a comprehensive public health strategy to prevent MTCT of HIV. With appropriate support, women who know they are HIV-infected and who choose not to have more pregnancies can avoid unintended pregnancies and therefore reduce the number of infants at risk for MTCT of HIV.

Family planning services are especially important for HIV-infected mothers who have stopped exclusive breastfeeding early to prevent MTCT and those who chose replacement feeding. Family planning clinics can also be sites for couples counselling and testing for HIV infection. The rapid spread of HIV has made access to effective contraception and family planning services even more important throughout the world. Most women are unaware of their HIV status. Access to family planning counselling and referral for women known or thought to be HIV-infected and their partners is critical for preventing unintended pregnancies. Such counselling also provides an opportunity to discuss related risks, both present and future, and is a vital component of reducing maternal and child morbidity and mortality.

Many HIV-infected women are diagnosed for the first time during pregnancy. Although much of the focus of intervention in pregnancy will be to reduce MTCT, ongoing care and support for the mother and child is very important, as long-term HIV treatment for mother. For women who are already infected and pregnant, PMTCT programmes offer a range of services and interventions that reduce the risk of MTCT of HIV. These include routine HIV education, counselling and testing for pregnant women and their partners, ARV treatment and prophylaxis, safer delivery practices and counselling on safer infant feeding.

Providing HIV treatment, care and support is critical for enabling HIV-infected women to address their health needs and ensure the wellbeing of their children and families. It is important to develop and reinforce referrals to programmes for treatment, care and support services that promote long-term care of women who are HIV-infected and their families. Collectively these programmes are called PMTCT-Plus (Tanzania National PMTCT guidelines, 2007).

Achievements/progress:

Effective integration of PMTCT service in routine Reproductive and Child health services will likely strengthen maternal care, infant care and family care throughout the country by providing essential Antenatal care, family planning services, Antiretroviral treatment and prophylaxis, safer delivery practices, counselling and support for the woman's infants-feeding choice and follow-up care and support during postpartum visits and child clinic visits.

Counselling coverage for PMTCT of HIV was initially low (34%) in the year 2002 but has been increasing progressively as the programme was scaled-up to more health facilities (87%) by 2005. The trend for HIV prevalence has also been observed to have decreased over the five years from 11 percent during pilot, 10 percent in the year 2003 to 6.7 percent in year 2005.These findings emphasize on the need to expand the PMTCT of HIV services while giving special priorities to areas with high HIV prevalence.

Many studies have confirmed that, in the absence of maternal HIV infection, breast milk is the best food for infants. Breast milk provides all of the nutrition and water infants need in the first six months of life and protects children against childhood illnesses like diarrhoea, severe ear infection and pneumonia. Breastfed infants have lower mortality rates than non breastfed children. Breastfeeding reduces a mother's risk of some cancers and helps space her pregnancies. If a woman becomes infected with HIV during pregnancy or lactation, the risk of MTCT of HIV is very high. Therefore, it is very important that mothers receive information about the risk of becoming infected with HIV late in pregnancy or during breastfeeding (Tanzania National AIDS Control Programme, 2005).

Obstacles/ constraints:

Male involvement in PMTCT of HIV programmes has often been difficult and challenging. However their participation in PMTCT of HIV programme has been shown to be an important factor in the acceptance and success of PMTCT of HIV programme within a community.

Men have much to offer as fathers, husbands, brothers and sons in assuming a greater role in PMTCT of HIV and care and treatment programmes. Various strategies can be used to help involve men.

All over the world, HIV has settled into communities where people are poorly educated and living in poverty. It is often poor, uneducated, and unempowered women and children who are most susceptible to the disease. Millions of people are vulnerable to HIV because they do not know the basic facts or because their life choices are constrained by poverty.

Poverty can force women into situations where prostitution or sex exchanged for gifts and favors become their only source of income.

Disclosure by prominent individuals with HIV, the availability of better medicine and the resulting improvement in quality of life of people living with HIV and AIDS are changing perceptions of the people living with HIV. There is broader recognition and acknowledgement of their potential to continue to be productive contributors to the community. All women and men, irrespective of their HIV status, have the right to determine the course of their sexual and reproductive lives and to have access to information and services that allow them to protect their own and their family's health.

Lack of knowledge may cause people to be frightened of HIV. Most people have some understanding of HIV transmission, but many lack in-depth or accurate knowledge about HIV. For example, many do not understand the difference between HIV and AIDS or how the disease progresses. The fear of death can be very powerful.

1.2 Statement of the Problem

Despite global recognition at the level of international agreements, many countries have not developed large-scale programs that reach out to men. Issues such as the AIDS epidemic have reinforced the urgency of encouraging men to take responsibility for their own sexual and reproductive health and that of their partners (Salem, 2004).

In countries where communication between couples is limited and manifestations of masculinity often involve violence against women and alcohol consumption, high-risk sexual behavior is commonplace.

PMTCT programmes have done very little to involve men, despite acknowledging their key roles and positive experiences in other reproductive health programmes like family planning services. Antenatal and MCH clinics are women's spaces that cannot be easily adopted to accommodate men (Rutenberg et al, 2002; 2003). Women take all responsibilities of RCH without encouraging their male partners to share the burden more equally (Ndong et al, 1999).

Poor infrastructure of ANCs and unfriendly environment to males not conducive to couple counseling due to lack of privacy, comfort, convenience, confidentiality and poor providers' behavior adversely affect men's capacity to use reproductive health services. Most service providers are not equipped or trained to accommodate male clients; Clinics may take too long and in the process discourage the males since this tends to interfere with other activities. Financial constraints, loss of income through lost work time, or the inability to arrange transport are all factors that prevent men from either accompanying their wives to Reproductive Health (RH) appointments or keeping their own RH appointments (Walston, 2005).

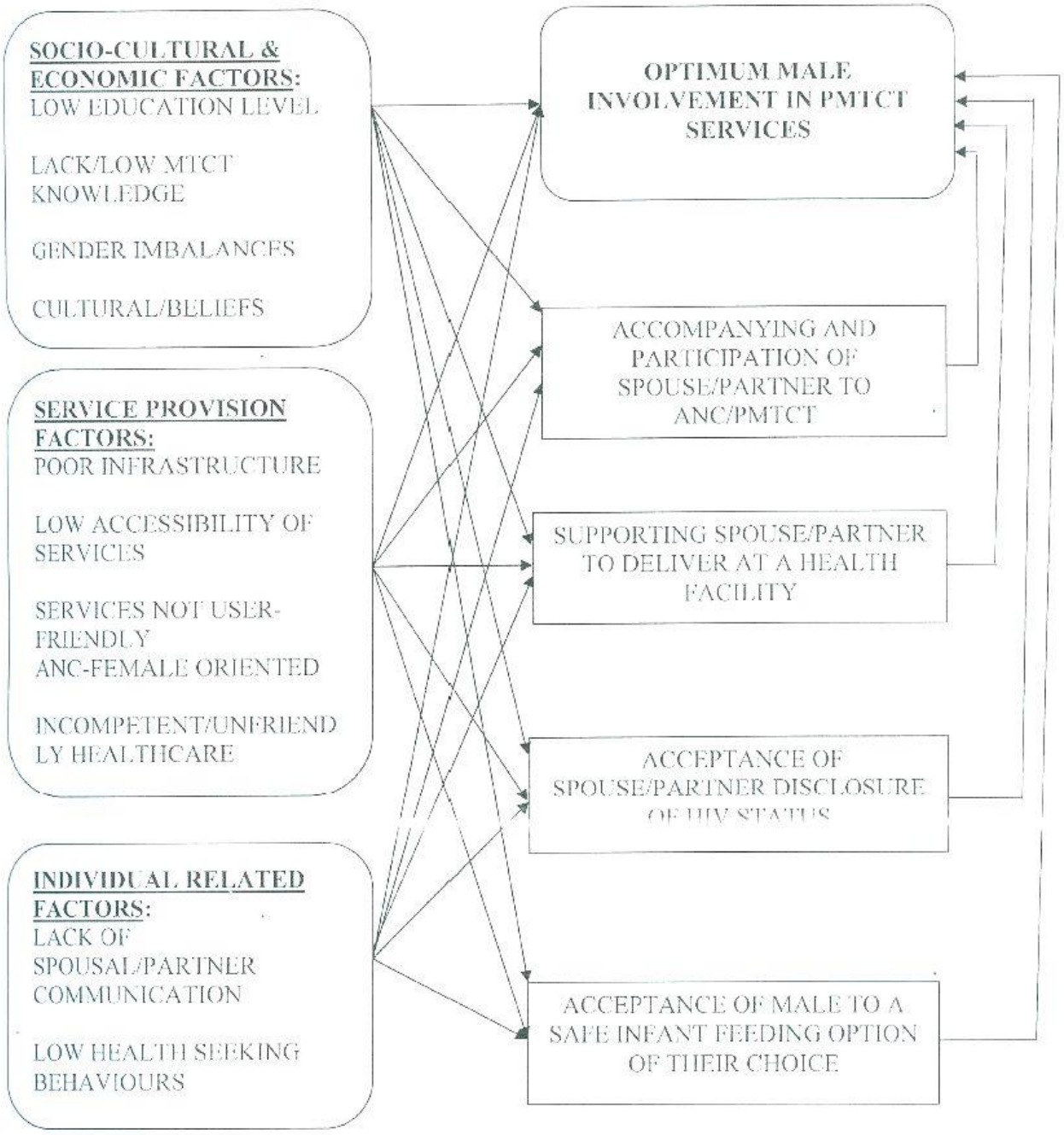
Poverty is a major bottleneck to male involvement in PMTCT of HIV programs especially on infant feeding decision when the couple is HIV positive. The situation is more acute in rural areas where the vast majority of population in Tanzania lives, yet where the infrastructure is poor and wanting, roads are poorly maintained and or impassable, and even where means of transport are available, the cost of transportation can be prohibitively high for most families. Clinics are also few and far between limiting the extent to which PMTCT services can reach most men in those areas. Gender differences; Strong economic dependence of women on men; this limit their effective decision-making, at household, service provision and at policy levels (Walston, 2005).

Cultural expectations make it difficult for women to discuss reproductive health issues with men. Cultural barriers often prevent women from taking necessary precautions to protect themselves and their babies from HIV. Domestic violence reduces women's control over their exposure to HIV. In places where dominance and violence are regarded as man's right, women are seldom able to question their husbands about extramarital encounters, negotiate condom use, or refuse sex (Zambia National PMTCT: Communication Strategy, 2004).

At the community level men have an influence on cultural norms that guide individual and community behaviour.The potential benefits of men's involvement include expanded rights for women, improved family health, better communication between partners, and joint and informed decision making within households. Male involvement and support are also vital for primary prevention of HIV and avoiding unintended pregnancy (De Cock et al, 2000).

However, reports from various PMTCT sites still show generally low male involvement, with its negative impact on the level of uptake of interventions in these programmes by women (Lee, 1999; Rutenberg et al, 2002).The lack of involvement by men deprives women of their partners' care & support in coping with the HIV infection, in taking Antiretroviral therapy (ARV) and making appropriate infant feeding choices (UNICEF, 2001). Nevertheless, despite the key roles males have, they have not participated fully in PMTCT in Tanzania and Mbeya City was no exception.

1.3 Conceptual Framework



Conceptual Framework on Optimum male involvement in PMTCT Services

Conceptual framework depicts the association between the various barriers males encountered in PMTCT of HIV services and the optimum responsibilities required for male involvement in PMTCT of HIV services. In this framework, there are a set of socio-cultural and economic factors and service provision factors hindering males utilizing PMTCT of HIV services to the optimum level.

A: The socio-cultural and economic factors: These factors relate to the gender and cultural norms which define the role of males in women's Reproductive health life as perceived by males themselves in the community in which they live (Lee, 1999; PATH, 1997; Rutenberg et al, 2002). Socio-cultural factors relate to males' opinion on and perceptions of their roles in PMTCT, on women's right to access PMTCT services, on couple communication, counselling and testing, and their potential reactions to a positive HIV test in their female partners. Socio-cultural and gender norms negatively influence the involvement of males in PMTCT programmes.

B: The service provision factors: These are factors that are related to the PMTCT programmes themselves and how friendly and accessible they are to males (Clark, 2001, Greene, 2000; Kumah, 1999; Rutenberg et al, 2002). In this study, the service provision factors relate to males' opinion on gender-specific PMTCT clinic, on the compatibility of PMTCT clinics schedules with males other daily activities, and on staff attitudes and other barriers encountered by males at PMTCT sites. The way in which PMTCT services are delivered presents many barriers to males' involvement.

C: Individual Related Factors: These relate to the level of awareness and misconceptions amongst males about PMTCT services (Kamal, 2002; Kumah, 1999; PATH, 1997). In this study, Knowledge and awareness relate to the general knowledge on MTCT and ways to prevent it, and also awareness of the existence of the PMTCT programme in Mbeya City. Also the demographic characteristics that include age, level of education, tribe and duration of relationship with female partner.

The lack of knowledge and awareness of PMTCT services among males is a barrier to their involvement; as well as males' demographic characteristics that influence their perceptions of PMTCT services.

1.4 Broad Objective

To assess factors affecting the levels of male involvement in PMTCT services in Mbeya city.

1.5 Specific Objectives

1. To determine current levels of male involvement in PMTCT of HIV services in Mbeya City.
2. To assess the attitude and knowledge of males on PMTCT of HIV in Mbeya city.
3. To determine the association of different levels of male involvement with socio-cultural, individual and service delivery factors in PMTCT of HIV services in Mbeya city.

1.6 Research Questions

1. What is the extent of male involvement in PMTCT?
2. Is male involvement in PMTCT optimal?
3. What are the factors affecting Male's involvement in PMTCT programmes?

1.7 Rationale of the study

This study focused on optimum male involvement in PMTCT of HIV services.
The optimum level included respondents who met all the criteria of:
Accompanying and participation of spouse/partner to ANC/PMTCT;
Support his spouse/partner to deliver at health facility;
Acceptance of male to adhere to safe infant feeding option of their choice;
Acceptance of spouse/partner disclose of her HIV status with no stigmatization.
Sub optimum levels included respondents who met some of the criteria but not all.

The study findings have been used as a base for recommendations on how to improve the level of male's involvement in PMTCT programmes. The increase of males would contribute to the improvement of uptake of PMTCT interventions by women and in turn would contribute to the reduction of MTCT rates hence reduction of child mortality and improvement of maternal health.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Global Review

Early childhood intervention services for families affected by HIV/AIDS begin during the prenatal period with adequate access to prenatal care and effective programs to prevent and treat mother-to-child transmission of HIV. Yet access to PMTCT programs is significantly lacking in areas hit hardest by the HIV/AIDS epidemic. Although the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS in 2001 identified PMTCT as one of five priorities, there has been only preliminary progress in making this goal a reality. Although heads of state over the world had indicated commitment to reduce the proportion of infants infected with HIV by 20% (160,000) by 2005, and 50% by 2010 (Wilfert, 2002), only eleven of the 33 most affected countries met the 2005 goal, far short of the aim for global change (UNAIDS, 2006).

By 2005, fewer than 10% of HIV-positive pregnant women had access to PMTCT services worldwide (UNAIDS, 2006). This low coverage rate is terrible, considering that approximately 35% of infants born to HIV-positive mothers will acquire HIV infection without treatment before, during, and after birth (UNAIDS and World Health Organization, 2006).

Although regimens to reduce the risk of mother-to-child transmission of HIV have existed since the 076 trial results were released in 1994 (Connor et al., 1994), millions of children (an estimated 90% of cumulative AIDS cases) have been born infected by HIV since that time (UNAIDS, 2006); and most of these infants and children have died. While 15-30% of infants born to HIV-positive mothers who do not breastfeed will acquire infection without provision of PMTCT regimens, the risk increases to 20- 45% for breastfed infants in the absence of a treatment regimen (De Cock et al, 2000). Offering comprehensive PMTCT services can result in HIV transmission of less than 2% (Cooper et al, 2002). The HIV/AIDS epidemic has become a global problem.

At the end of 2003, 16.5% adults aged between 15–49 years were infected with HIV, out of which the higher percentage were women. Formal and informal surveys around the world on reproductive health are increasingly focusing on male involvement in reproductive health programmes (UNAIDS Reports, 2004).

Focus group discussions have also concentrated at looking at the male participation and involvement in reproductive health programmes. They look at males' attitudes towards reproductive health and sexual behaviours. This increase in the surveys reflects the widening recognition of men's importance in sexual and reproductive health. During the 14th International conference on AIDS held in Barcelona (Osborne, 2002), it was discovered that although "male" involvement was still very low, more males were getting involved in PMTCT related reproductive health issues than ever before and, were making a difference to program uptake.

The id21 health Research, in the UK, identified the following barriers to scaling up PMTCT that include: Weak health systems, limited human resources, lack of supplies, including drugs, stigma, low levels of male involvement, Weak community mobilization. Vertical financing mechanisms for targeted programmes can increase this separation of HIV and Sexual and Reproductive Health services. Policy and programmatic processes for HIV and maternal health have also developed separately, both nationally and internationally. National HIV and AIDS policy and coordination structures often failed to include reproductive and maternal health stakeholders. The reviews of success stories in a number of African countries have identified decentralized approaches, strong national leadership and political commitment, and a comprehensive approach to integrating PMTCT into maternal health services as factors leading to success. Funding for integrated programmes, national efforts to develop strategies and proposals, and better guidance from technical and implementing agencies are also needed (Druce & Nolan, 2008).

Family Health International's approach is guided by the belief that prevention must go beyond specific PMTCT interventions and placed within the context of a comprehensive HIV prevention,

care, and support program. Comprehensive PMTCT includes identifying and strengthening referral systems to respond to the care and support needs of HIV-infected mothers and their families (Family Health International (FHI), 2009) on PMTCT of HIV).

AIDS epidemic have reinforced the urgency of encouraging men to take responsibility for their own sexual and reproductive health and that of their partners (Salem, 2004). Despite global recognition at the level of international agreements, many countries have not developed large-scale programs that reach out to men. As a result, many men are not aware of why they need to be involved in Sexual &Reproductive Health, how they can be involved, and what services are available for them and their partners (Walston, 2005).

Since MCH clinics typically do not reach men, HIV/AIDS prevention outreach to men and communities is also extremely important so that MTCT prevention is not the burden of women alone (Preble, Piwoz, 2002). In India, the government recognized that efforts to strengthen Antenatal Care services were not sufficient in isolation and that enhancing their acceptance in the community was critical. It was noted that male involvement in MCH services was low in public sector (as opposed to private sector) clinics; husbands either were not allowed or chose not to accompany their wives for ANC services. India's PMTCT policy now mandates enhancing male involvement in ANC and providing opportunities to implement various reproductive health-related interventions in a couples-oriented setting. (Preble, EA & Piwoz, EG, 2002)

Involving men could also help reduce the overall prevalence of HIV/AIDS an outcome possible only if men are involved not just as clients of RHC but also as partners, service providers, policymakers, teachers, and project managers (Walston, N 2005).

2.2 Sub- Saharan Africa Review

The study done by Peltzer, K (2007), was to investigate knowledge of PMTCT and to describe potential barriers that might affect acceptability of interventions for PMTCT in a resource poor setting in South Africa. Results indicate that major potential barriers in implementing PMTCT

programmes in a resource poor setting included physical access to the health facility, PMTCT knowledge, stigma and support, HIV testing, and delivery preference. Use of skilled professional childbirth attendants by all women remains a goal of safe motherhood programmes, despite well-known barriers. Increasing use of skilled professional childbirth attendants, facility-based when feasible, should also be a behavioral goal of PMTCT programmes. This would allow timely, supervised receipt of ARVs during the intrapartum period, while at the same time allowing opportunity for quality routine childbirth care, and improved obstetric practice administered by skilled providers.

In Botswana, PMTCT officials seeking to increase the relatively low levels of service utilization developed a sixteen-minute video for use in clinics. The video provides standardized information about the benefits of PMTCT to pregnant women and partners in a group setting before individual counseling. The program tested the effect of the video on acceptance of VCT during a one-month pilot period in twelve clinics and found that 68 percent of women who viewed the video accepted the HIV test versus just 52 percent of women who did not view the video (Smith, 2002).

IntraHealth's International (2005) in Rwanda has helped the Ministry of Health establish and support PMTCT services at 10 hospitals and health centers in Gitarama and Byumba Provinces. The greatest challenges facing providers of PMTCT services is reaching sexual partners of HIV-positive women and persuading them to receive HIV counseling and testing. The success of the PMTCT partner involvement initiative have been attributed to three principal activities: a system in which sexual partners are invited discreetly (via letters from health facility staff) to accompany women to prenatal visits and receive voluntary counseling and testing; the involvement of men in the reproductive health services provided to their spouses, such as prenatal counseling; and a community-provider partnership approach that promotes male partner involvement by challenging attitudes and behaviors of men that compromise their own health as well as the health of women and children.

Partner involvement has grown dramatically as a result of these activities. In fact, the trend is that the majority of women's sexual partners now accompany their spouses to the PMTCT counseling sessions without receiving a written invitation letter. By maximizing identification of HIV-positive pregnant women and systematically reaching out to their male partners, the project is encouraging a norm of male participation in the continuum of HIV/AIDS services offered at health facilities (Rwanda, 2005).

The study has revealed that males have not been adequately involved in PMTCT programmes in Chipata district, consequently affecting their participation. The lack of involvement and participation is related to socio-economic factors, cultural factors and health systems delivery factors. The research findings have shown that although knowledge regarding HIV/AIDS issues and PMTCT is influenced by educational level it is not affected by the residential area. The integration of the PMTCT programme to ANC is an obstacle for males to access the service because the environment is tailored to favor females more than males. Therefore, if men are to be involved in PMTCT, the ANC activities should be redesigned in such a way that men are involved. Low male participation has been found to be attributed to inadequate information for males on PMTCT as they depend on second hand information from their wives which tends to be inadequate most of the time. Health workers have not created a way for males to get first hand information straight from the health centres. The encouraging fact is that males are willing to get involved and participate in PMTCT programmes (Benkele, R, 2007).

Another study in Mbale, Uganda investigating the level of male involvement, and its determinants, in the PMTCT programme has shown that of the male partners who had a low male involvement index had not attended antenatal care with their wives/spouses. The men who had attained secondary education were more likely to have a high male involvement index than those who had primary or no formal education. The factors hindering male involvement in the PMTCT programme were cultural; socio-economic and related to poor health system (lack of privacy, rude staff, and over-congested antenatal clinic) (Byamugisha, 2006).

Male involvement has been inadequate in PMTCT communication initiatives to date. Programmes have largely focused on encouraging women to come for PMTCT services but have often left out men as critical decision-makers. If men are not informed of the benefits of PMTCT and clearly understand the risks to their children, they will not become a supportive force for PMTCT uptake and compliance. Women and their partners have limited information on PMTCT. PMTCT is still a relatively new concept for many. While some information campaigns have been underway, there are still many people that lack the basic information (Zambia National PMTCT, 2004).

In Rwanda, male partners play a key role in family decisions to use health services, especially when fee for services is required. Involving men in PMTCT and other HIV prevention services has been a challenge, hindering disclosure of HIV test results within couples and use of PMTCT services by HIV-positive pregnant women. Also, male involvement in PMTCT services at these sites has become routine: the majority of male partners participate without being prompted by an invitation letter. Letters and community outreach appear to have also impacted reproductive health service use such as deliveries at health facilities and utilization of modern contraceptive methods (Family Health International, 2005).

Perez et al,2008; evaluated the acceptability and feasibility of reinforcing the role of traditional birth attendants (TBAs), a study done in family and child health services through their participation in PMTCT programmes in Zimbabwe. A decrease in use of antenatal care services with an increase in home deliveries was affecting the coverage of PMTCT interventions in a context of accelerated economic crisis. Although the long-term goal of ANC service delivery in Zimbabwe remains the provision of skilled delivery attendance, PMTCT programmes will benefit from complementary approaches to prevent missed opportunities.

Traditional Birth Attendants were willing to expand their scope of work regarding activities related to PMTCT. There is a need to reinforce their knowledge on MTCT prevention measures and better integrate them into the health system.

Male involvement projects report from Zimbabwe revealed cultural beliefs reinforcing the community perception of men who at public supported their wives by accompanying them to the clinic as "weak or bewitched"(Rutenberg et al, 2002). Social, gender related issues affect men as they may engage in high-risk behaviours more frequently than women in order to meet the perceived expectations of social norms (White et al, 2003).

PMTCT programmes have done very little to involve men, despite acknowledging their key roles and positive experiences in other reproductive health programmes like family planning services. Antenatal and mother & Child health clinics are women's spaces that cannot be easily adopted to accommodate men (Rutenberg et al, 2002; 2003). Some key successes have been demonstrated in resource-poor countries; however, the translation of successful interventions into public health policy has been slow because of a variety of factors such as inadequate funding and cultural, social, and institutional barriers (Fowler et al, 2000).

Men want to make use of the existing health care facilities, but the way these facilities function is not very conducive to their utilization because of constraints related to the time, the attitude of the healthcare providers and the expenses involved (Kamal, 2002). Given the weakened health infrastructure in many high HIV burden countries, inadequate donor funding (Fowler et al, 2007), has played a significant role in limiting access to PMTCT services in developing world. Adequate MCH services are the cornerstone of any intervention to prevent MTCT. However, most African countries provide only limited MCH services, facing managerial, financial and human resource constraints.

A disapproval of MTCT services is that they are too female- focused, which may be understandable given that most of these services are linked to antenatal clinics. However, as lessons from family planning programmes have shown, the highest uptake of services is achieved where male partners approve and give support for services. Couple HIV counseling and testing would be a way to greater involve men. (Rutenberg et al, 2003).

PMTCT programs should collaborate with VCT programs aimed at the general population to ensure that couple counseling takes place and that general-purpose VCT programs adequately address PMTCT. Working through general-purpose programs will help ensure early male involvement in PMTCT and overcome an important obstacle to testing that many women face, the need to consult their spouse. The more discussion about HIV and MTCT in the community and among couples, the easier it will be for women to accept HIV testing within the ANC setting (Rutenberg et al, 2003).

PMTCT programs should promote male involvement by addressing community-wide beliefs and norms that often limit such involvement. Such efforts are most effective when programs communicate directly to men or indirectly through influential community leaders. Programs should, whenever possible, link with existing male involvement efforts working at the community level.

Couples counseling can reach men within the ANC clinic, and PMTCT clinics should institute referral programs to encourage male partners to seek VCT at alternative sites.
Program should, however, be careful to avoid blaming men or to reinforce their dominant role in decision-making within the couple. Strategies for informing male partners about PMTCT services and encouraging their support include inviting men to the clinic for HIV counseling and testing, community education on PMTCT in places where men congregate, and support groups for men. These strategies led to a significant increase in discussions about VCT and PMTCT between PMTCT clients and their regular partners, HIV testing among male partners of PMTCT clients, and disclosure of HIV results by both women and men to a regular partner (Rutenberg et al, 2002).

In a study of couples counseling at ANC clinics in Zimbabwe, couples received health talks and counseling on issues such as general family welfare and support, pregnancy, relationships, couple communication, and HIV and other STIs. Couples attended up to three counseling sessions. The couples participating in the study reported more confidence in talking about their relationships,

HIV and other STIs, and condom use, and were better able to deal with unfaithful partners (Tongoona et al, 2002).

Kenya PMTCT program managers identified the need to involve male partners as a critical program element. Strategies for informing male partners about PMTCT services and encouraging their support include inviting men to the clinic for HIV counseling and testing, community education on PMTCT in places where men congregate, and support groups for men. These strategies led to a significant increase in discussions about VCT and PMTCT between PMTCT clients and their regular partners, HIV testing among male partners of PMTCT clients, and disclosure of HIV results by both women and men to a regular partner (Rutenberg et al, 2002).

The Zambia Exclusive Breastfeeding Study started a couples counseling clinic on Saturday mornings that significantly increased male involvement in the PMTCT program. To encourage men to undergo VCT, male community outreach workers approach women in the clinic waiting room to offer assistance in engaging their partners. Women who agree to participate arrange for the outreach workers visit their husbands at home and invite them to attend VCT. The strategy, although requiring a significant reorientation of antenatal services and more human resources, helped to increase the numbers of couples counseled ten-fold to about 55 per month (Shutes et al, 2002). Another study done by Tshibumbu,(2006); showed that the level of men's involvement amongst respondents was moderate and that knowledge had a positive influence on involvement, while socio-cultural factors had a negative influence.

2.3 National Review

The study on factors affecting coverage of male involvement in PMTCT in Tanzania is reinforcing TBAs knowledge on MTCT prevention measures before they can contribute to the provision of PMTCT services. At the moment, in rural settings, TBAs' advice to women on HIV/AIDS issues (including PMTCT) is not frequent. It has been shown that TBAs, if given additional skills and motivated, can be used effectively in program implementation and contribute

to reaching women who deliver outside health facilities with PMTCT interventions (from counselling to providing single-dose Nevirapine [sdNVP]. After careful selection, training and sustained and regular supervision, TBAs played an important role in supporting and referring pregnant mothers for facility-based PMTCT services. (Perez et al, 2008).

It have been found that because of cultural norms, men preferred to receive information about PMTCT from fellow men who were their peers or older, and in gender-specific groups. Men are considered themselves marginalized by PMTCT programmes according to a study done in Tanzania by Burke et al, 2004. Most societies in sub-Saharan Africa are patrilineal and men believe that they are culturally mandated to be custodians of their families and communities. Men are responsible for making both productive and reproductive decisions. One of the motivations for bearing children, especially sons, is to extend the family name. Thus men consider fatherhood to be an important part of the definition and value of being a man. Most of the fertility research has gathered information from women.

All the major fertility research programmes like the World Fertility Surveys, the Contraceptive Prevalence Surveys and the recent Demographic and Health Surveys have concentrated on studying the fertility behavior and outcomes of women, paying little attention to the study of male fertility (Muvandi, & Simbamwaka, 1996). Such approaches to fertility reduction usually assume that women's sexual and fertility patterns are the critical variables that need to be altered. They fail to recognize two things, namely; that changing women's roles and behavior alone is not sufficient to resolve the population problem and that woman alone cannot achieve a demographic transition (Muvandi & Simbamwaka, 1996).

Men may defer seeking healthcare until it is too late, because they perceive illness or utilization of health services as signs of weakness. When men do seek help, they often feel unwelcome at heath facilities, which are largely attended by women. Frequently they confront health workers who, for a variety of reasons, are unable or uncomfortable treating males. Channeling Men's Positive Involvement in the National HIV/AIDS Response (CHAMPION) encourages men's

positive involvement in HIV prevention and reproductive health promotion by increasing men's individual knowledge and skills. (Tanzania Engender Health: (CHAMPION) Strategy, 2004).

Another study done (Msuya, & Mbizvo, 2008) on Low male partner participation in antenatal HIV counselling and testing in northern Tanzania; it was found that Test results presented male partners (12.5%) came for HIV-VCT. A high proportion 40% came after the woman had delivered.

HIV-seropositive women whose partners attended were three times more likely to use Nevirapine prophylaxis, four times more likely to avoid breastfeeding and six times more likely to adhere to the infant feeding method selected than those whose partners didn't attend (Msuya, Mbizvo, 2008. Women were more likely to bring their partner for VCT if they collected their own test results, were living with their partner, had a high monthly income and had expressed at enrolment the intention to share HIV results with their partner. Although PMTCT programs are presumably a good entry point for male involvement in prevention of sexual and perinatal HIV transmission, this traditional clinic-based approach reaches few men. With emphasis on counselling, partner participation will encourage male partners to come for VCT. Also, promotion of couple testing and counselling outside antenatal settings in male friendly and accessible settings should be given priority (Msuya, Mbizvo, 2008).

2.4 Conclusions from the literature review

The previous studies confirm the importance of involving males in PMTCT programmes. The studies also show that it is not that easy to convince males to be involved in programmes that are designed for and provided by women. The women's uptake in PMTCT services is considerably affected by the attitude of their female partners and healthcare providers.

2.5 Strength and weakness of the various studies

Most of the studies mentioned used women as respondents instead of males themselves; and a good number of studies are qualitative in nature. Studies focused mostly on the impact of males' attitudes on the uptake of PMTCT services by women and very little are said about the actual reasons behind males' attitude. However, the studies are from different countries that show variations in norms across cultures. Following the above studies and their results; there was a need to conduct more quantitative research with males themselves as respondents to understand their attitude better.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Design of the study

This was a descriptive cross-sectional study designed to examine the relationship between the levels of male involvement and the various factors affecting PMTCT services. The study was conducted in July 2009. A quantitative method was employed. Such design was chosen to enable to meet the objectives of the study.

3.2 Area of the study

The study area was in Mbeya city which comprises of a mixture of people including the indigenous tribes of Mbeya region. These tribes are Nyakyusa from Kyela and Rungwe districts, Ndali from Ileje district, Bungu from Chunya district, Safwa, Malila from Mbeya district, Nyiha from Mbozi district and Sangu, Wanji and Sukuma from Mbarali district. According to the 2002 population and housing census general report, Mbeya region had a total population of 2.2 million, with urbanization rate of 14%, and population density of 35 people per square kilometre. Administratively, the region has eight districts councils namely; Chunya, Ileje, Kyela, Mbarali, Mbeya city, Mbeya district, Mbozi and Rungwe.

Mbeya city has 214 square kilometers with population of 340,000, growth rate of 4%. It is divided into 2 divisions, 36 wards and 180 streets. The region has 362 health facilities of which seven are district hospitals, one regional hospital and one referral hospital (8 voluntary and 2 private), 30 Health centres and 315 dispensaries. The region has 117 PMTCT sites of which; 18 Chunya, 6 Ileje, 12 Kyela, 12 Mbarali, 17 Mbeya district, 12 Mbeya city, 8 Mbozi and 32 Rungwe.

3.3 Study population

The study population was comprised of all adult males married or cohabiting aged 18 to 60 years residing in the community of the 12 selected streets with PMTCT of HIV services in Mbeya city. The age was chosen because it is the expected reproductive age-group.

3.4 Sample size estimation

The sample size is estimated using the formula,

$$n = \frac{z^2 p [1-p]}{e^2}$$

Where: n= minimum required sample size

Z= Standard normal deviate corresponding to the level of significant

P= proportion of males who have optimum criteria of male involvement in PMTCT services in Mbeya.

In this case it is unknown; therefore **p** was taken as 50% (0.5).

e = margin of error; estimated to be 0.05.

q=1 – p, thus 1 – 0.5 = 0.5

Therefore $n = \frac{1.96 \times 1.96 (0.5 (1 - 0.5)}{0.05 \times 0.05} = \mathbf{384}$

3.5 Sampling methods

The study sample was obtained through multistage cluster sampling method because the sample was drawn from a large and diverse population with defined geographical areas. Mbeya city was chosen purposively. Random sampling using ballot technique was used at the city level where, six wards within the PMTCT of HIV catchment areas were selected from thirty-six wards. The selected wards were Ruanda, Iganzo, Nzovwe, Mabatini, Iyunga and Maendeleo.

From each of the six wards selected in the first stage, three Streets were selected making a total of eighteen streets. From every street selected, a sampling frame of males aged 18 to 60 years married or cohabiting were prepared to match the criteria for the study. Every 6th name in the sampling frame was enrolled in the study sample.

3.6 Recruiting and training of research assistants

Four research assistants who were form six graduates, fluent in Kiswahili were recruited and trained on how to conduct the interview by using the questionnaires and assist the principal researcher during data collection. The training was done for two days prior to the actual date of the study.

3.7 Pre-testing of the study tool

This was done in order to test the clarity of questions and study logistics. It was also helpful for research assistants to exercise flexibility in the questionnaires. This exercise was carried out in an area not selected for the study before the actual study took place. Thirty questionnaires were done during pretesting.

3.8 Data collection methods

The data was collected through face-to–face interviews in the Community using a structured questionnaire to respondents who accepted to be in the study. The questionnaire was developed in English and then translated to Swahili. The instrument was peer-reviewed for content validity and revised. The Principal researcher and research assistants administered the questionnaire. The questionnaire included both closed and open-ended questions. The questionnaire consisted of questions aimed at eliciting information about:

Dependent variables: Levels of optimum male involvement in PMTCT services (Optimum and sub optimum).

The optimum level included respondents who met all the criteria of:

- Accompanying and participation of wife/partner to Antenatal Care/PMTCT ;
- Support his wife/partner to deliver at health facility;
- Acceptance of male to adhere to safe infant feeding option of their choice;
- Acceptance of wife/partner to disclose her HIV status with no stigmatisation.

Sub optimum levels included respondents who met some of the criteria but not all.

Independent variables:

- Socio-demographic characteristics
- Knowledge on PMTCT
- Attitude
- Socio-cultural factors
- Service-provision factors

3.9 Data cleaning, entry and analysis

Every day the principal researcher assisted by research assistants reviewed the questionnaires for completeness and gave each a serial number. Data entry was done using Epi info version 6 and analysis was done using SPSS version 15.0 programmes. Frequencies were run for categorical variables and comparison between proportions was done using the Chi-square test for differences in proportions. A p-value of <0.05 was considered significant. Continuous variables were summarized by calculating means and their respective standard deviations (SD). Knowledge scale was used to categorizing knowledge questions into scores.

3.10 Ethical considerations

The permission to conduct the study was obtained from the relevant authorities that included the MUHAS Research and Publications Committee. This gives ethical clearance to Mbeya Regional Administrative Secretary, Mbeya City Executive Director and City Medical Officer of Health, and finally Ward Executive Officers. Informed written consent was obtained from all respondents for their willingness to participate in the study. Explanation was given on study objectives, and how the information obtained might improve the RCH care and hence PMTCT of HIV. They were told that their participation in the research was voluntary and information obtained will be kept confidential and would be used for the research purpose only.

3.11 Limitation of the study

The information from the female partners of the respondents could be useful for cross-checking the reliability of the given information by males; however, females were not involved in this study.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic characteristics of respondents

The socio-demographic characteristics of the respondents are shown in Table 1. The respondents' age ranged between 18 and 60 years with mean age of 38.2 ± SD 9.8 years. The respondents in 31-40 age groups comprised the greater part. Most of respondents 283 (73.7%) had completed primary education. Most of the respondents 334 (87.0%) had one wife/partner. Surprisingly, 210 (54.7%) were cohabiting.

Majority of the respondents 330 (86.0%) had an average duration of relationship with their female partner of between 3 and 4 years. Greater part of the respondents 175 (45.6%) had an average number of three children that had been fathered with the index wife/partner, of which 204 (53.1%) of children had two years of age. Most of the respondents 339 (88.3%) were Christian.

Table 1: Socio-demographic characteristics of respondents (n=384)

Characteristic	frequency	percentage
Age (Years)	**n**	**%**
18 – 30	97	25.3
31 – 40	148	38.5
41 – 50	92	24.0
51 – 60	47	12.2
Level of Education		
No formal education	20	5.2
Completed primary education	283	73.7
Completed secondary education	72	18.8
Completed college/University	9	2.3
Marital status		
Married	174	45.3
Cohabiting	210	54.7
Number of wives/partners		
Only one	334	87.0
Two	30	7.8
Three	10	2.6
Four or more	10	2.6
Duration of relationship with wife/partner	**frequency**	**percentage**
Up to 2 years	51	13.3
Between 3 and 4 years	330	86.0
Between 5 and 9 years	2	0.5
More than 10 years	1	0.3
Number of children fathered with the index wife/partner		
One	6	1.6
Two	123	32.0
Three	175	45.6
Four	77	20.1
Five or more	3	0.8
The age of the respondents youngest child		
Up to one year	18	4.7
Two years	204	53.1
Three years	137	35.7
Four years	21	5.5
Five years or more	4	1.04
Religion		
Christian	339	88.3
Muslim	45	11.7

4.2 Level of male involvement in PMTCT services

It should be remembered that male involvement was operationalized by asking respondents about the issues depicted in appendix 6.

The findings of this study revealed that most of the respondents 308 (80.2%) knew that their wives/partners were tested for HIV the last time they were pregnant, while, 287 (74.7%) of respondents had discussed with their wives/partners about testing for HIV the last time they were pregnant.

Generally 247 (64.3%) respondents accompanied their wives/partners to ANC/PMTCT clinics.

Majority of the respondents 100 out of 384 (26.0%) showed willingness of accompanying their wives/partners for HIV testing, on the other hand, 374 (97.4%) of the respondents accepted the use of ARVs to protect their unborn child. Best part of the respondents 372 (96.9%) agreed for their wife/partner not to breastfeed and 377 (98.2 %) of the respondents were willing to buy formula milk as a replacement feeding

4.3 Association of Demographic variables against optimum and sub-optimum male involvement in PMTCT services.

As shown in Table 2, A smaller proportion of the married 59 (33.9%) and cohabiting 79 (37.6%) respondents were optimally involved in PMTCT services, this implies that male involvement as pertaining to marital status of the respondents is about 138 (36%) only. the male however, the association between the marital status of the respondents and male involvement in PMTCT services was not statistically significant ($p = 0.451$). Conversely, a smaller number 3 (15.0%) of respondents who had no formal education and 135 (37.1%) of those who had formal education were optimally involved in PMTCT services. The association between education level (p-value 0.056), religion of respondents (p-value 0.168), age of respondents (p-value 0.221), number of children of respondents (p-value 0.364) and male involvement in PMTCT was not significant.

Table 2: Association between male involvement status and Socio-Demographic characteristics

Demographic variables	Optimum	Sub-optimum	p-value
Marital status			
Married	59 (33.9%)	115 (66.1%)	**0.451**
Cohabiting	79 (37.6%)	131 (62.4%)	
Education			
No formal education	3 (15.0%)	17 (85.0%)	**0.056**
Formal education	135 (37.1%)	229 (62.9%)	
Religion			
Christian	126 (37.2%)	213 (62.8%)	**0.168**
Muslim	12 (26.7%)	33 (73.3)%	
Age			
18 – 30 yrs	40 (41.2%)	57 (58.8%)	**0.221**
31 – 40 yrs	54 (36.2%)	95 (63.8%)	
41 – 50 yrs	33 (36.3%)	58 (63.7%)	
51 - 60 yrs	11 (23.4%)	36 (76.6%)	
Number of children			
One	4 (66.7%)	2 (33.3%)	**0.364**
Two	45 (36.6%)	78 (63.4%)	
Three	63 (36.0%)	112 (64.0%)	
Four +	26 (33.8%)	54 (67.5%)	
Total	**138 (36.0)**	**246 4.0)**	

4.4 Knowledge about PMTCT of HIV and male involvement

As shown in appendix 8, most respondents 380 (99%) had already heard about PMTCT. A good number of respondents 339 (88.3%) knew about PMTCT services, where, 343 (89.3%) of respondents knew that HIV testing was offered to all pregnant women at all health facilities. The knowledge about HIV transmission was also high among the respondents. 298 (77.6%) of the respondents knew that HIV can be transmitted during pregnancy, 334 (87.0%) during delivery, and 343 (89.3 %) through breastfeeding.

Likewise the knowledge about prevention of HIV infection from mother to child was high among the respondents. Majority of the respondents 383 (99.7%) knew that antiretroviral drugs given during labour and delivery can protect the unborn child from her mother's HIV infection and 297 (77.3%) of the respondents knew that caesarian section was recommended to reduce the chance of HIV transmission from mother to her child.

Table 3 shows the level of knowledge of PMTCT of HIV among respondent in this study. About 317 (83%) of respondents had high level of knowledge, while only 20 (5%) of the respondent had low knowledge level.

There were 10 questions, each respondent were required to respond correctly to all. The highest score were expected to be 10.

Table 3: Percentage distribution on level of PMTCT knowledge (n=384)

level of knowledge	Score	n	%
Low	0 – 3	20	5
Moderate	4 – 7	47	12
High	8 – 10	317	83
Total		**384**	**100**

4.5 Association between male involvement and knowledge

Generally, the study revealed a significant association between male involvement and knowledge of participants on PMTCT. During analysis of the data, it was found that, those respondents with low knowledge none of them was optimally involved in PMTCT. Therefore, the data shown in the table 4 below, the knowledge score was modified to combine those with low and moderate knowledge together to have meaningful interpretation. As shown in the table, respondents with optimum involvement in PMTCT, 93% of the respondents had high knowledge score. While 57 out 67 (85%) of the respondents with low knowledge score were found to have non optimal male involvement. On the other hand, it was revealed that those with high knowledge score were almost 4 times likely to practice optimal involvement in PMTCT (OR = 3.86; $p<0.001$) compared to respondents with low knowledge score.

Table 4: Association between knowledge and male involvement in PMTCT

	Knowledge score		**p<0.001**
Male Involvement	Low (%)	High (%)	Total
Non Optimal	57 (23)	189 (77)	246
Optimal	10 (7)	128 (93)	138
Total	67 (17)	317 (83)	384

4.6 Attitude, Social and Cultural factors and male involvement

Specific attitude, social and cultural factors were presumed to be associated with different aspects of male involvement in PMTCT in the conceptual framework of the study. Respondents were invited to react to statements which expressed different attitude, socio-cultural factors, and their responses were elicited in terms of the extent to which they agreed or disagreed with particular statements in accordance with the likert scale. Table 5a shows the results of this exercise. The finding revealed that: Majority of the respondents 264 (68.7%) were of the opinion that pregnant women could be tested for HIV without their spouse/partner's consent, A greater part, of the respondents 288 (75.0%) agreed that PMTCT information should not be given to males first, 264 (68.7%) of the respondents agreed to accompany their wives/partners to ANC/PMTCT clinics, 267 (69.5%) of the respondents agreed that ANC/PMTCT clinics were not for women and children only. About 278 (72.4%) of the respondents agreed that couple HIV testing should take place at ANC/PMTCT clinics and 214 (55.7%) of the respondents disagreed that a married woman who was found to be HIV positive was unfaithful to her husband; however, 321 (83.6%) of the respondents said that she should not be divorced. A substantial proportion 273 (71.0%) approve of discussing about HIV testing with their wife/partner during their pregnancy.

Table 5a: Opinion on Attitude, social and cultural factors (n=384)

Statements	POSITIVE		NEGATIVE	
	n	%	n	%
A pregnant woman can be tested for HIV without the permission of her husband/partner	264	68.7	120	31.3
Males should accompany their pregnant wives/partners to ANC/PMTCT clinic	264	68.7	120	31.3
Males who accompany their wives/partners to ANC/PMTCT clinics are generally considered to be weak or bewitched	97	25.3	287	74.7
It is not proper for men to discuss with women about HIV testing during pregnancy	111	29.0	273	71.0
The ideal husband/spouse and wife/partner should undergo HIV test at the same time at the ANC/PMTCT clinic	278	72.4	106	27.6
Married couples should use condoms to reduce chances of mother-to-child transmission of HIV	223	58.1	161	41.9
ANC/PMTCT clinics are considered to be for women and children only	117	30.5	267	69.5
When a wife is found to be HIV positive after HIV testing this show that she has been unfaithful to her husband	170	44.3	214	55.7
A wife/a married woman is found to be HIV positive, she should be divorced	63	16.4	321	83.6
PMTCT information should first be given to males then to females	96	25.0	288	75.0

4.7 Association between attitude, social, cultural factors and male involvement

As shown in table 5b below, about 329 out of 384 (85.7%) of the respondents had negative attitude towards male involvement in PMTCT. Surprisingly, those who showed positive attitude towards male involvement in PMTCT, only 13 out of 55 (23.6%) found to have optimal involvement in PMTCT, while those found to have negative attitude towards male involvement in PMTCT showed higher (38%) optimum male involvement. The difference being statistically significant (P=0.04). This implies that positive attitude may not be a good indicator of male involvement in PMTCT.

Table 5b: Association between attitude and male involvement			**p=0.040**
Male Involvement	Negative attitude	Positive attitude	Total
Non Optimal	**204 (62%)**	**42 (76.4%)**	**246 (64%)**
Optimal	**125 (38%)**	**13 (23.6%)**	**138 (36%)**
Total	**329**	**55**	**384**

4.8 Service-provision factors and male involvement

The findings on service-provision factors on PMTCT services in this study are depicted in Table 6a. Two thirds of respondents 250 (65.0%) did not find gender separation at ANC/PMTCT clinics to be important, whereas, about three quarters of the respondents did not agree that males should be attended by males only when they need ANC/PMTCT services. For the most part, 284 (74.0%) of respondents thought that ANC/PMTCT clinics should also be opened during weekends and evening so as to enable male to access the services. Some of the respondents 216 (56.3%) had an opinion that PMTCT programmes had done little to involve males to support their wives/partners. Likewise, almost the same number of respondents 224 (58.3%) had an opinion that healthcare workers did not keep HIV results confidential. Interestingly, 251 respondents (65.4%) would like to have written invitation from healthcare workers to attend ANC/PMTCT clinics.

Despite long distances to the ANC/PMTCT clinics and high transport costs, 247 (64.3%) of the respondents were willing to accompany their spouses to the clinic and most of respondents 353 (92.0%) were in favour of taking the HIV test with their wives/partners in order to take precautions.

Table 6a: Opinion on Service-provision factors (n=384)

Opinion	POSITIVE		NEGATIVE	
	n	%	n	%
Males should have male only PMTCT clinic	134	35.0	250	65.0
At the ANC/PMTCT clinics males should be attended to by male health care workers only	91	24.0	293	76.0
Healthcare workers do not like to see males at ANC and PMTCT clinics	133	34.6	251	65.4
ANC/PMTCT clinics should also be opened during weekends and evening so that males can access also	284	74.0	100	26.0
Staffs at the ANC/PMTCT clinic that your wife/partner attended do not keep HIV results of males and females confidential	160	41.7	224	58.3
PMTCT programmes have done very little to involve males in their support of their wives/partners in PMTCT services	216	56.3	168	43.7
Males tend to attend ANC/PMTCT clinic if invited by healthcare provider to come	251	65.4	133	34.6
ANC/PMTCT clinics may be conducted very far from your home and transport is expensive	137	35.7	247	64.3
You can do HIV test with your wife/partner to know your HIV status, in order to take precaution	353	92.0	31	8.0

4.9 Association between service-provision and male involvement

Table 6b summarizes the service provision as a factor of male involvement in PMTCT. There was almost equal distribution between those who had negative attitude and their counter parts towards the PMTCT services with association with their involvement in PMTCT (p=0.315).

Table 6b: Association between service provision factor and male involvement

Male Involvement	Negative attitude	Positive attitude	Total
Non Optimal	**117 (61.6%)**	**129 (66.5%)**	**246 (64%)**
Optimal	**73 (38.4%)**	**65 (33.5%)**	**138 (36%)**
Total	**190**	**194**	**384**

4.10 Association between male involvement in PMTCT and socio-demographic characteristics

Some of the socio-demographic characteristics were found to have significant association with male involvement in terms of wife/partner being tested for HIV the last time she was pregnant (Table 7a) The association between education and male involvement was significant (p-value 0.000), where, a smaller number of respondents 9 (45.0%) with no education and most of respondents 299 (82.1%) their wives/partners were tested for HIV during the last pregnancy. There was an association between marital status and male involvement (p-value 0.016), where, a large number of married 144 (82.8% and 164 (78.1%) of cohabiting respondents their wives/partners were tested for HIV in the last pregnancy. However, the association of other socio-demographic characteristics and male involvement were not significant, such as, number of children in a couple (p-value 0.107), religion of respondents (p-value 0.416) and age of respondents (p-value 0.057)

Table 7a: Association between male involvement in PMTCT and socio-demographic characteristics

Demographic variables:	HIV testing in the last pregnancy		
Age groups	**Yes**	**No**	**p-value**
18 – 30 yrs	83 (85.6%)	14 (14.4%)	**0.057**
31 – 40 yrs	126 (84.6%)	23 (15.4%)	
41 – 50 yrs	67 (73.6%)	24 (26.4%)	
51 – 60 yrs	32 (68.1%)	15 (31.9%)	
Education			
No formal education	9 (45.0%)	11 (55.0%)	**0.000**
Completed formal Education	299 (82.1%)	65 (17.9%)	
Marital status			
Married	144 (82.8%)	30 (17.2%)	**0.016**
Cohabiting	164 (78.1%)	46 (21.9%)	
Number of children			
Two	114 (88.4%)	15 (11.6%)	**0.107**
Three	138 (78.9)	37 (21.1%)	
Four and more	56 (70.0%)	24 (30.0%)	
Religion			
Christian	269 (79.4%)	70 (20.6%)	**0.416**
Muslim	39 (86.7%)	6 (13.3%)	

4.11 Association between male involvements in PMTCT and socio-demographic variables

Marital status was found to be the only item significantly associated with male involvement in PMTCT (p-value 0.000) among socio-demographic characteristics in terms of couples being tested together for HIV (Table 7b). Other socio-demographic characteristics were not significantly associated with male involvements such as, education of respondents (p-value 0.070), age of respondents (0.760), number of children of respondent (p-value 0.722), religion of respondents (p-value 0.097).

Table 7b: Association between male involvement and demographic variables

Demographic variables	**Have you been tested for HIV together with your wife/partner at an ANC/PMTCT clinic?**		
Age	**Yes**	**NO**	**p-value**
18 -30 yrs	66 (68.0%)	31 (32.0%)	**0.760**
31 – 40 yrs	102 (68.5%)	47 (31.5%)	
41 – 50 yrs	64 (70.3%)	27 (29.7%)	
51 – 60 yrs	29 (61.7%)	18 (38.3%)	
Education			
No formal education	8 (40%)	12 (60.0%)	**0.070**
Completed formal education	253 (69.5%)	111 (30.5%)	
Marital status			
Married	137 (78.7%)	37 (21.3%)	**0.000**
Cohabiting	124 (59.0%)	86 (41.0%)	
Number of children			
Two	95 (73.6%)	34 (26.4%)	**0.722**
Three	111 (63.4%)	64 (36.6%)	
Four and more	55 (68.8%)	25 (31.2%)	
Religion			
Christian	236 (69.6%)	103 (30.4%)	**0.097**
Muslim	25 (55.6%)	20 (44.4%)	

4.12 Association between male involvement in PMTCT and socio-demographic variables

Male involvement in accompanying their wife/partner to an ANC/PMTCT clinic was found to be significantly associated with marital status of the respondents, p-value 0.000, and also number of children, p-value 0.049 (Table 7c). However, all other socio-demographic characteristics were not significantly associated with male involvement in terms accompanying their wife/partner to an ANC/PMTCT clinic as shown in Table 7c.

Table 7c: Association between male involvement and demographic variables

Demographic variables	**Have you ever accompanied your wife/partner to an ANC/PMTCT clinic?**		
Age groups	**YES**	**NO**	**p-value**
18 – 30 yrs	60 (61.9%)	37 (38.1%)	**0.835**
31 – 40 yrs	95 (63.8%)	54 (36.2%)	
41 – 50 yrs	62 (68.1%)	29 (31.9%)	
51 – 60 yrs	30 (63.8%)	17 (36.2%)	
Education			
No formal education	12 (60.0%)	8 (40.0%)	**0.220**
Completed formal education	235 (64.6%)	129 (35.4%)	
Marital status			
Married	92 (52.9%)	82 (47.1%)	
Cohabiting	155 (73.8%)	55 (26.5%)	**0.000**
Number of children			
Two	71 (55.0%)	58 (45.0%)	**0.049**
Three	124 (70.9%)	51 (29.1%)	
Four and more	52 (65.0%)	28 (35.0%)	
Religion			
Christian	223 (65.8%)	116 (34.2%)	**0.072**
Muslim	24 (53.3%)	21 (46.7%)	

CHAPTER FIVE

5.0 DISCUSSION

5.1 The current levels of male involvement in PMTCT of HIV services in Mbeya City.

The findings of this study revealed relatively high male involvement in PMTCT of HIV services. The involvement of males were cutting across most of the criteria such as discussing and testing of HIV with their wives/partners, accompanying their wives/partners to ANC/PMTCT clinics, acceptance of the use of ARV to protect the new born and protection of their new born through breastfeeding. These findings of the level of male involvement, found to be higher than those which were reported in Zambia by Tshibumbu (2006). However, a study done by Msuya and Mbizvo in Arusha –Tanzania (2008) showed low male involvement in HIV-VCT.

These findings show a positive outcome on male involvement in PMTCT services. This is most likely because the males were informed and involved from the beginning, which led them providing better support for their female partners.

5.2 The attitude and knowledge of males on PMTCT of HIV in Mbeya city.

Most of respondents had high level of knowledge on PMTCT of HIV, in terms of mode of transmission especially during pregnancy and breastfeeding and male involvement in PMTCT. These findings correspond to the findings of the study done in Zambia by Tshibumbu (2006).

However, the current findings show more positive outcomes towards PMTCT programmes compared to the findings by Benkele, R in Zambia (2007), whereby most of respondents had negative attitude towards male involvement in ANC/PMTCT clinics. Also the current findings were similar to the findings in the study by Burke et al, (2004) in Tanzania, which found that men preferred to get PMTCT information from peers of same sex, or service providers.

This study have shown high level of knowledge about prevention of HIV infection from MTCT was high among respondents. Majority of the respondents knew that antiretroviral drugs given during labour and delivery can protect the unborn child from her mother's HIV infection.

Also the respondents knew that caesarian section was recommended to reduce the chance of HIV transmission from mother to her child.

Generally, the study revealed a significant association between male involvement and knowledge of participants on PMTCT. For instance, it was found that, majority of respondents with knowledge of PMTCT in terms of transmission of HIV from MTCT during pregnancy, had tested for HIV together with their wives/partners. The association between male involvement and knowledge of HIV prevention was statistically significant. The high level of knowledge may be attributed to the sensitisation programmes that have been carried out in Mbeya city over the recent years. This has also contributed to the positive attitude of the respondents.

5.3 The association of different levels of male involvement with socio-cultural, individual and service delivery factors in PMTCT of HIV services in Mbeya city.

5.3.1 Socio-cultural factors

The results of this study showed that though majority of respondents who either disagreed or were undecided regarding the notion that males who accompany their wives/partners to ANC/PMTCT clinics are weak or bewitched, most of them were found to accompany their wives/partners to ANC/PMTCT clinics. This gives an impression that most of males disregard the myths about male involvement in ANC/PMTCT services. However, a big part of those respondents who considered accompanying their wives/partners as a weakness or bewitched did not accompany them. The belief in witchcraft and male dominance tends to adversely affect involvement of males in PMTCT services. This mindset is relatively more difficult to change. This shows the importance of sensitization campaigns to males who still have negative attitude to ANC/PMTCT services.

5.3.2 Individual factors

Though individual factors in this study were found not to be statistically significant, it has been shown that individual factors still influence male involvement on PMTCT services. It is depicted in the findings as very small proportion of married and cohabiting respondents were optimally involved in PMTCT services. Likewise, the findings indicate the level of education influences male involvements as those who had no formal education and of those who had formal educations were in sub-optimal level of involvement in PMTCT services.

studies done in Mbale, Uganda which investigated the level of male involvement, and its determinants, in the PMTCT programme whose results showed that the male partners who had a low male involvement index did not attend ANC with their wives/partners.

5.3.3 Service-provision factors

There is a significant association between male involvement and service provision factors. The majority of the respondents showed great acceptance but suggesting obstacles for them to attend the PMTCT services. Majority seem to suggest the opening time of the clinic to be adjusted for them to attend, some of the respondents suggesting that they should be attended by a male health worker. However, the findings that some health workers do not observe confidentiality in the HIV result are an alarming message to the service providers if they need to improve male involvement in PMTCT clinics. All these findings concur to studies conducted in other parts, such as a study done by (Walston, 2005), found that many men are not aware of why they need to be involved in Sexual &Reproductive Health (SRH), how they can be involved, and what services are available for them and their partners. Likewise, a study by (Benkele, R, 2007), found that if men are to be involved in PMTCT, the ANC activities should be redesigned in such a way that men are involved. Health workers have not created a way for males to get first hand information straight from the health centers. Similarly, in a study done by Kamal, 2002 in India found other factors contributing to low male involvement include non-conducive functions of health facilities relating to time constraints, the attitude of health care providers and the expenses involved. The encouraging fact is that males are willing to get involved and participate in PMTCT programmes.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Socio-cultural and economic factors affect the level of male involvement in PMTCT of HIV in Mbeya City. The findings showed that the level of knowledge among respondents on PMTCT services was high. This has had a positive effect on the involvement of males in PMTCT services. Use of condoms to reduce chances of MTCT of HIV by married couples is acceptable (77.6%) However, a smaller number of married and cohabiting respondents were optimally involved in PMTCT services. However, more than half of respondents with high knowledge were found to have non optimal involvement in PMTCT.

Service provision factors currently pertaining in Mbeya city do not adversely affect involvement of males in PMTCT services. Males do not want to be attended by male health workers only and feel that health workers do not want to see males attending the clinics. However, the majority of males do accompany their partners all the same. Likewise, some males had an opinion that healthcare workers did not keep HIV results confidential.

Individual factors related to male involvement in PMTCT services in Mbeya City do contribute positively. Males do communicate with their wives/partners and accept that the husband's consent is not necessary for them to test for HIV during pregnancy or at any other time. Education level, religion, age and marital status have an insignificant effect on male involvement in PMTCT services in the study area.

6.2 RECOMMENDATIONS

1. Ministry of Health and Social Welfare and other stakeholders should continue disseminating health promotion materials on male involvement in PMTCT programmes to

reach households level, targeting males. In addition, advocacy campaigns should be used. All these measures will ultimately lead to changes in males' attitude towards their involvement in PMTCT.

2. Mbeya regional authority should utilise influential, key leaders of the communities in collaboration with NGOs to formulate and disseminate context specific and cultural sensitive messages that are acceptable on socio-cultural issues through health promotion about PMTCT.

3. ANC/PMTCT clinics should be friendlier and supportive to males and service providers should ensure efforts are made to involve males wholly in every PMTCT implementation.

REFERENCES

Abrams, E.J Myer,. L Rosenfield, El-Sadr, W M 2007, 'Prevention of mother-to-child transmission services as a gateway to family-based human immunodeficiency virus care and treatment in resource-limited settings: rationale and international experiences'. *American Journal of Obstetrics and Gynecology, 197*: S101–S106.Accessed 11/April 2009.9:20
http://www.sciencedirect.com/science?_ob=RedirectURL&Method=

Banjunirwe, F & Muzoora, M 2005, 'Barriers to the implementation of programs for the prevention of mother-to-child transmission of HIV: a cross-sectional survey in rural and urban Uganda'. *AIDS Res Ther, 2*, 10. Accessed 20 April 2009.4:42
(http://creativecommons.org/licenses/by/2.0)

Benkele, R 2007, 'Male involvement and participation in prevention of mother to child transmission (PMTCT) of HIV/AIDS – a case of Chipata district Zambia'

Burke, M Rajabu, M Ramadhani, A Burke, J 2004, 'Male participation in Prevention of Mother to Child Transmission; Prevention Programs in Tanzania.' Accessed 5April,2009.11:03AM.
http://afao.org.au/conference2004/TUE1330_Burke_Male_participation_in_PMTCT.pdf.

Byamugisha, R 2006, 'Male involvement in the prevention of mother-to-child transmission of HIV programme in Mbale, Uganda'

Clark, S 2001, 'Including men in Reproductive health' AIDS Link

Commission on HIV/AIDS and Governance in Africa 2004, 'Mother-to-Child Transmission plus' Mitigation strategies for Africa: Economic Commission for Africa, Addis Ababa.

Commission on HIV/AIDS and Governance in Africa 2004, 'preventing mother-to-child transmission of HIV in Africa: issues and challenges', Background paper for CHGA Interactive Gaborone, Botswana, 26-27 July 2004.Index no. CHGA-B-I2-0001: Economic Commission for Africa, Addis Ababa. Accessed 30April 2009. 10.02.
http://www.uneca.org/CHGA.

De Cock, KM Fowler, MG Mercier, E de Vincenzi, I Saba, J Hoff, E et al. 2000, 'Prevention of mother-to-child HIV transmission in resource-poor countries: translating research into policy and practice', *Journal of American Medical Association*, 283(9), 1175–1182.

Druce, N and Nolan, A 2008, 'Seizing the Big Missed Opportunity: Linking HIV and Maternity Care Services in sub-Saharan Africa', Reproductive Health Matters 15:30, 05 June, pages190-201. Id21 Research Highlight

Family Health International (FHI), 2009, 'Prevention of Mother-to-Child Transmission PMTCT) of HIV'

Family Health International, 2003, 'HIV/AIDS care and treatment: a clinical course for people caring for persons living with HIV/AIDS', facilitator's guide, Arlington.

Fowler, MG Lampe, MA Jamieson, DJ Kourtis, AP, et al 2007, 'reducing the risk of mother-to-child human immunodeficiency virus transmission: past successes, current progress and challenges and future directions'. *American Journal of Obstetrics, Gynecology Sep; 197:S3-9.* Accessed 30/04/09. 11:53.

http://www.ncbi.nlm.nih.gov/pubMed/17825648?ordinalpos=1&itool=Entrezsystem.2.Pentrez.Pubmed_ReultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum

Greene, M 2000, 'Changing women and avoiding men Stereotypes and reproductive health programmes', *IDS Bulletin.HIV Testing and Counseling'* Accessed April 18, 2009 11.47.

Horizon Programme, 2002, 'Integrating HIV prevention and care into maternal and child health care setting: Lessons learned from horizons studies Maasai Mara and Nairobi, Kenya', *Consultation Report* New York: Population Council Accessed on 04/05/09 12.30 http://creativecommons.org/licenses/by/2.0

IntraHealth's International, 2005, 'Male Involvement in Preventing Mother–to–Child Transmission of HIV, Rwanda'

Kamal, I 2002, 'Field experiences in involving men in safe motherhood: Programming for male involvement in reproductive health', WHO/PAHO. Washington DC.

Kumah, O 1999, 'Fostering male involvement and partnership; a stepwise process, reproductive health through advocacy'

Lee, R 1999, 'Men's involvement in women's reproductive health projects and programmes in the Philippines', *Reproductive Health Matters*7 (14):106-117.

McIntyre, J & Gray, G 2002, 'What can we do to reduce mother-to-child transmission of HIV?' *British Medical Journal* 324:218-221

Ministry of Health and Central Board of Health, 2004, 'National Prevention of Mother to Child Transmission (PMTCT) of HIV', Communication Strategy; Mobilizing People for Action in Zambia

Ministry of Health and Social Welfare, 2007, 'Tanzania, National AIDS Control Programme', HIV/AIDS/STI surveillance Report No. 20

Ministry of Health, Zambia, 2004, 'PMTCT of HIV', a reference manual for health workers Lusaka: Central Board of health.

Msuya, SE Mbizvo, EM Hussain, A Uriyo, J Sam, NE Stray-Pedersen, B 2008,'Low male partner participation in antenatal HIV counselling and testing in northern Tanzania', implications for preventive programs *AIDS Care*. Jul; 20(6):700-9.Accessed on 23/03/09 10:20

http://www.ncbi.nlm.nihgov/site (Entrez? DB=pubmed&Cmd=serch&Term=

Muvandi, I & Simbamwaka, J 1996, 'Determinants of male fertility and sexual behaviour', UMATI; Male fertility and sexual behavior research report series no.4.

Ndong, I Robert, M Becker, J Haws, M et al 1999, 'Men's Reproductive Health: Defining, Designing and Delivering Services'.Vol 25.supplement, January. The Alan Guttmacher Institute Accessed 12May 2009.12.08.

File://E:\Men's Reproductive Health Defining and Delivering Services files\Me…

Newell, M 2001, 'Prevention of mother-to-child transmission of HIV', Challenges for the current decade. *Bulletin of the World Health Organization*

Newell, ML 2006, 'Current issues in the prevention of mother-to-child transmission of HIV-1 infection', *Trans R Soc Tropical Medicine & Hygiene, 100*(1), 1–5

Peltzer, K Mosala, T Shisana, O & Nqeteko, A 2007, 'Barriers to Prevention of HIV Transmission from Mother to Child (PMTCT) in a Resource poor setting in the Eastern Cape, South Africa', African Journal of Reproductive Health. *Curationis, 29*(1), 54–61.

Perez, F 2008, 'Factors affecting coverage of male involvement in prevention of mother- to child transmission in Tanzania', BMC Public Health. Accessed on 22 April 09.9:03

Perez, F Aung, K Ndoro, T Dabis, F Engelsmann, B 2008, ,Participation of traditional birth attendants in prevention of mother-to-child transmission of HIV in two rural districts in Zimbabwe', a feasibility study.

Phoolcharoen, W & Detels, R 2002, 'Acquired immunodeficiency Syndrome', *Oxford textbook of public health*,4thedition New York: Oxford University Press1453-1477.Accessed 20May 2009 3:24PM.

http://www.ph.uclaedu/epi/faculty/detels/Epi227/reader/AIDS_oxford.pdf

Piot, P & Cotl-Seck, A 1999, 'Preventing mother-to-child transmission of HIV in Africa'

Population Council, 2005, 'Mixed success involving men in maternal care Worldwide', Maternal and child health

Preble, E & Piwoz, E 2001, 'Prevention of HIV in Africa: practical guidance for programs', Washington DC: Support for Analysis and Research in Africa (SARA) project. Washington, DC. Sara@aed.org

Preble, EA Piwoz, EG 2002, 'Prevention of Mother to Child Transmission of HIV in Asia', Practical Guidance for programs Accessed 08 May 2009 12:33

http://www.ncbi.nlm.nih.gov/Pubmed/18197758?ordinalpos=i&itod=EntrezSystem2.Pentrez.Pubmed._ResultsPanel.Pubmed_Discovery_RA&link.pos=i&log/=related.

Program for Appropriate Technology in Health (PATH), (1997) Involving men in reproductive health

Rutenberg, N Kalibala, S Baek, C Rosen, J et al, 2003, 'Programme recommendations for the prevention of mother-to-child transmission of HIV',: *a practical guide for managers*. (UNICEF), New York.

Rutenberg, N 2002, 'Integrating HIV prevention and care into maternal and child health care settings', Lessons learned from Horizons studies. New York: Population Council.

Rutenberg, N Baek, C Kalibala, S Jamieson, E Rosen, 2003, 'Evaluation of United Nations-Supported Pilot Projects for the PMTCT of HIV', Overview of findings. Washington, DC: Population Council. *Safe Motherhood Initiative Fact sheet*

http://www.safemotherhood.org/ibctfacts.htm

Tanzania Engender Health, 2004, 'Channeling Men's Positive Involvement in the National HIV/AIDS Response', (CHAMPION) Strategy

Tanzania, 2003, 'National PMTCT guidelines', Draft

Tanzania 2007, 'National PMTCT guidelines'

Tshibumbu, DD 2006, 'Factors influencing Men's involvement in Prevention of Mother –to-Child Transmission (PMTCT) of HIV Programmes in Mambwe District, Zambia'.

Un General Assembly Special Session on HIV/AIDS (UNGASS), 2001,'Global crisis-Global Action',' Declaration of Commitment on HIV/AIDS,' New York

UNAIDS and World Health Organization, 2006, 'WHO *and UNAIDS Secretariat Statement on* Implementation of PMTCT in the developing world', *Acta Paediatric, 91*, 863–863.

Accessed 30March 2009.

http://www.who.int/hiv/toronto2006/WHO-UNAIDSstatement_TC_081406_dh.pdf.

UNAIDS, Inter-Agency Task Team on Gender and HIV/AIDS, 2002.'HIV/AIDS, Gender and the Prevention of Mother-to-Child Transmission (PMTCT)'. Accessed 08/04/09 10:18

http://www.panos.org.uk/aids/stigma_countries_study.htm

UNAIDS, 2006, 'Report *on the Global HIV/AIDS Epidemic'*, Geneva: UNAIDS. Accessed 13/05/09 8:33

http://www.unaids.org/en/HIVdata/2006 Global Report/default. asp

UNICEF, 2003, 'Integrating HIV Prevention and Care into Maternal and Child Health care setting', Lessons learned from Horizon studies.

UNICEF, 2001, 'Stigma, HIV/AIDS and prevention of mother-to-child transmission', a pilot study in Zambia, India, Ukraine and Burkina Faso

United Nations Population Fund, 1999, 'Implementing the reproductive health vision: involving men in reproductive health', Evaluation Findings.

Walston, N 2005, 'Challenges and Opportunities for Male Involvement in Reproductive Health in Cambodia', POLICY Project/Cambodia USAID

White, V Greene, M & Murphy, E 2003, 'Men and reproductive health programs: influencing gender norms', Washington: Synergy Project.

Wilfert, C 2002, 'Prevention of mother-to-child transmission of HIV: reflections on

World Health Organization, 2006, 'Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: Towards universal access', Geneva: WHO.

http://www. popcouncil.org/publications/popbriefs/pb11 (1) . _1.html